

Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa
Assumptions for shadow calculations

Shadow receptor: Astras - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (444)
Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:00 15:40	08:21 16:40	07:13 17:46	06:48 19:55	05:28 21:01	04:27 22:02	04:20 22:19	05:09 21:35	06:15 20:17	07:18 18:53	07:27 16:32	08:32 15:37
2	09:00 15:41	08:19 16:42	07:11 17:48	06:45 19:57	05:25 21:03	04:26 22:04	04:21 22:19	05:11 21:33	06:17 20:14	07:20 18:50	07:29 16:30	08:34 15:36
3	08:59 15:42	08:16 16:45	07:08 17:50	06:42 19:59	05:23 21:05	04:25 22:05	04:22 22:18	05:13 21:30	06:19 20:12	07:22 18:48	07:32 16:27	08:36 15:35
4	08:59 15:44	08:14 16:47	07:05 17:53	06:39 20:01	05:20 21:08	04:23 22:06	04:23 22:18	05:15 21:28	06:21 20:09	07:25 18:45	07:34 16:25	08:38 15:34
5	08:58 15:45	08:12 16:49	07:02 17:55	06:36 20:04	05:18 21:10	04:22 22:08	04:24 22:17	05:17 21:26	06:23 20:06	07:27 18:42	07:36 16:23	08:39 15:34
6	08:58 15:47	08:10 16:52	07:00 17:57	06:34 20:06	05:16 21:12	04:21 22:09	04:25 22:16	05:19 21:24	06:25 20:03	07:29 18:39	07:39 16:20	08:41 15:33
7	08:57 15:48	08:08 16:54	06:57 17:59	06:31 20:08	05:13 21:14	04:21 22:10	04:26 22:15	05:22 21:21	06:27 20:00	07:31 18:37	07:41 16:18	08:43 15:32
8	08:56 15:50	08:06 16:56	06:54 18:02	06:28 20:10	05:11 21:16	04:20 22:12	04:27 22:14	05:24 21:19	06:30 19:58	07:33 18:34	07:43 16:16	08:44 15:31
9	08:55 15:51	08:03 16:59	06:52 18:04	06:25 20:12	05:09 21:18	04:19 22:13	04:29 22:13	05:26 21:17	06:32 19:55	07:35 18:31	07:46 16:14	08:46 15:31
10	08:54 15:53	08:01 17:01	06:49 18:06	06:23 20:15	05:07 21:20	04:18 22:14	04:30 22:12	05:28 21:14	06:34 19:52	07:38 18:28	07:48 16:12	08:47 15:30
11	08:54 15:55	07:59 17:04	06:46 18:08	06:20 20:17	05:04 21:23	04:18 22:15	04:32 22:11	05:30 21:12	06:36 19:49	07:40 18:26	07:50 16:10	08:48 15:30
12	08:53 15:57	07:56 17:06	06:43 18:11	06:17 20:19	05:02 21:25	04:17 22:16	04:33 22:10	05:32 21:09	06:38 19:47	07:42 18:23	07:52 16:08	08:50 15:30
13	08:51 15:59	07:54 17:08	06:41 18:13	06:15 20:21	05:00 21:27	04:16 22:16	04:34 22:08	05:34 21:07	06:40 19:44	07:44 18:20	07:55 16:06	08:51 15:29
14	08:50 16:01	07:51 17:11	06:38 18:15	06:12 20:23	04:58 21:29	04:16 22:17	04:36 22:07	05:36 21:04	06:42 19:41	07:46 18:18	07:57 16:04	08:52 15:29
15	08:49 16:03	07:49 17:13	06:35 18:17	06:09 20:26	04:56 21:31	04:16 22:18	04:38 22:06	05:39 21:02	06:44 19:38	07:49 18:15	07:59 16:02	08:53 15:29
16	08:48 16:05	07:47 17:15	06:32 18:20	06:06 20:28	04:54 21:33	04:15 22:19	04:39 22:04	05:41 20:59	06:46 19:35	07:51 18:12	08:01 16:00	08:54 15:29
17	08:46 16:07	07:44 17:18	06:29 18:22	06:04 20:30	04:52 21:35	04:15 22:19	04:41 22:03	05:43 20:57	06:48 19:32	07:53 18:10	08:04 15:58	08:55 15:29
18	08:45 16:09	07:42 17:20	06:27 18:24	06:01 20:32	04:50 21:37	04:15 22:20	04:43 22:01	05:45 20:54	06:51 19:30	07:55 18:07	08:06 15:56	08:56 15:29
19	08:44 16:11	07:39 17:22	06:24 18:26	05:58 20:34	04:48 21:39	04:15 22:20	04:44 22:00	05:47 20:52	06:53 19:27	07:58 18:04	08:08 15:54	08:57 15:29
20	08:42 16:13	07:37 17:25	06:21 18:28	05:56 20:37	04:46 21:41	04:15 22:20	04:46 21:58	05:49 20:49	06:55 19:24	08:00 18:02	08:10 15:53	08:57 15:30
21	08:41 16:15	07:34 17:27	06:18 18:31	05:53 20:39	04:44 21:43	04:15 22:21	04:48 21:56	05:51 20:47	06:57 19:21	08:02 17:59	08:12 15:51	08:58 15:30
22	08:39 16:17	07:32 17:30	06:16 18:33	05:50 20:41	04:42 21:45	04:15 22:21	04:50 21:55	05:53 20:44	06:59 19:18	08:04 17:57	08:15 15:49	08:59 15:31
23	08:37 16:19	07:29 17:32	06:13 18:35	05:48 20:43	04:41 21:47	04:16 22:21	04:51 21:53	05:56 20:41	07:01 19:16	08:07 17:54	08:17 15:48	08:59 15:31
24	08:36 16:22	07:26 17:34	06:10 18:37	05:45 20:46	04:39 21:49	04:16 22:21	04:53 21:51	05:58 20:39	07:03 19:13	08:09 17:52	08:19 15:46	08:59 15:32
25	08:34 16:24	07:24 17:36	06:07 18:39	05:43 20:48	04:37 21:50	04:16 22:21	04:55 21:49	06:00 20:36	07:05 19:10	07:11 16:49	08:21 15:45	09:00 15:32
26	08:32 16:26	07:21 17:39	06:04 18:42	05:40 20:50	04:36 21:52	04:17 22:21	04:57 21:47	06:02 20:33	07:08 19:07	07:13 16:46	08:23 15:43	09:00 15:33
27	08:30 16:28	07:18 17:41	06:02 18:44	05:38 20:52	04:34 21:54	04:17 22:21	04:59 21:45	06:04 20:31	07:10 19:04	07:16 16:44	08:25 15:42	09:00 15:34
28	08:28 16:31	07:16 17:43	05:59 18:46	05:35 20:54	04:32 21:56	04:18 22:21	05:01 21:43	06:06 20:28	07:12 19:02	07:18 16:42	08:27 15:41	09:00 15:35
29	08:27 16:33		06:56 19:48	05:33 20:57	04:31 21:57	04:18 22:20	05:03 21:41	06:08 20:25	07:14 18:59	07:20 16:39	08:29 15:40	09:00 15:36
30	08:25 16:35		06:53 19:50	05:30 20:59	04:30 21:59	04:19 22:20	05:05 21:39	06:10 20:23	07:16 18:56	07:23 16:37	08:31 15:38	09:00 15:37
31	08:23 16:38		06:50 19:53		04:28 22:01		05:07 21:37	06:13 20:20		07:25 16:34		09:00 15:38
Potential sun hours	228	262	365	429	515	539	538	474	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Ausekli - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (770)
Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June
1	09:01 15:40	08:21 16:40	07:14 17:46	06:48 19:55	05:28 21:01	04:27 22:03
2	09:00 15:41	08:19 16:42	07:11 17:48	06:45 19:57	05:25 21:04	04:26 22:04
3	09:00 15:42	08:17 16:45	07:08 17:51	06:42 20:00	07:08 (5) 07:11 (5)	05:23 21:06
4	08:59 15:44	08:15 16:47	07:06 17:53	06:40 20:02	07:06 (5) 07:12 (5)	05:21 21:08
5	08:59 15:45	08:13 16:50	07:03 17:55	07:30 (8) 07:31 (8)	07:03 (5) 07:12 (5)	05:18 21:10
6	08:58 15:47	08:11 16:52	07:00 17:57	07:27 (8) 07:32 (8)	07:00 (5) 07:12 (5)	05:16 21:12
7	08:58 15:48	08:08 16:54	06:57 18:00	07:24 (8) 07:33 (8)	06:57 (5) 07:12 (5)	05:14 21:15
8	08:57 15:50	08:06 16:57	06:55 18:02	07:21 (8) 07:33 (8)	06:56 (5) 07:12 (5)	05:11 21:17
9	08:56 15:52	08:04 16:59	06:52 18:04	07:19 (8) 07:34 (8)	06:56 (5) 07:11 (5)	05:09 21:19
10	08:55 15:53	08:01 17:01	06:49 18:06	07:17 (8) 07:34 (8)	06:56 (5) 07:09 (5)	05:07 21:21
11	08:54 15:55	07:59 17:04	06:46 18:09	07:17 (8) 07:33 (8)	06:58 (5) 07:08 (5)	05:04 21:23
12	08:53 15:57	07:57 17:06	06:44 18:11	07:17 (8) 07:32 (8)	07:00 (5) 07:05 (5)	05:02 21:25
13	08:52 15:59	07:54 17:09	06:41 18:13	07:18 (8) 07:30 (8)	06:15 21:27	04:16 22:17
14	08:51 16:01	07:52 17:11	08:21 (7) 08:24 (7)	06:38 18:15	07:04 (6) 07:28 (8)	06:12 20:24
15	08:50 16:03	07:50 17:13	08:19 (7) 08:27 (7)	06:35 18:18	07:02 (6) 07:13 (6)	06:09 20:26
16	08:48 16:05	07:47 17:16	08:16 (7) 08:29 (7)	06:33 18:20	06:59 (6) 07:14 (6)	06:07 20:28
17	08:47 16:07	07:45 17:18	08:13 (7) 08:29 (7)	06:30 18:22	06:56 (6) 07:14 (6)	06:04 20:31
18	08:46 16:09	07:42 17:20	08:11 (7) 08:30 (7)	06:27 18:24	06:54 (6) 07:14 (6)	06:01 20:33
19	08:44 16:11	07:40 17:23	08:10 (7) 08:31 (7)	06:24 18:27	06:54 (6) 07:14 (6)	05:59 20:35
20	08:43 16:13	07:37 17:25	08:10 (7) 08:30 (7)	06:21 18:29	06:53 (6) 07:13 (6)	05:56 20:37
21	08:41 16:15	07:35 17:27	08:10 (7) 08:31 (7)	06:19 18:31	06:54 (6) 07:14 (6)	05:53 20:39
22	08:40 16:17	07:32 17:30	08:10 (7) 08:30 (7)	06:16 18:33	06:54 (6) 07:13 (6)	05:51 20:42
23	08:38 16:20	07:29 17:32	08:10 (7) 08:30 (7)	06:13 18:35	06:54 (6) 07:11 (6)	05:48 20:44
24	08:36 16:22	07:27 17:34	08:12 (7) 08:29 (7)	06:10 18:38	06:55 (6) 07:09 (6)	05:46 20:46
25	08:35 16:24	07:24 17:37	08:12 (7) 08:28 (7)	06:07 18:40	06:57 (6) 07:07 (6)	05:43 20:48
26	08:33 16:26	07:22 17:39	08:13 (7) 08:26 (7)	06:05 18:42	05:40 20:50	05:40 20:50
27	08:31 16:29	07:19 17:41	08:16 (7) 08:23 (7)	06:02 18:44	05:38 20:53	04:34 21:55
28	08:29 16:31	07:16 17:44		05:59 18:46	05:35 20:55	04:33 21:56
29	08:27 16:33			06:56 19:49	05:33 20:57	04:31 21:58
30	08:25 16:35			06:53 19:51	05:30 20:59	04:30 22:00
31	08:23 16:38			06:51 19:53		04:28 22:01
Potential sun hours	227	262	365	429	515	539
Total, worst case		214	302	104		
Sun reduction		0.19	0.40	0.43		
Oper. time red.		1.00	1.00	1.00		
Wind dir. red.		1.00	1.00	1.00		
Total reduction		0.19	0.40	0.43		
Total, real		42	122	44		

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Ausekli - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (770)
Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	July	August	September	October	November	December
1	04:20	05:09	06:15	06:57 (5)	07:19	07:57 (8)
	22:20	21:35	20:18	10 07:07 (5)	18:54	13 08:10 (8)
2	04:21	05:11	06:17	06:55 (5)	07:21	07:55 (8)
	22:20	21:33	20:15	13 07:08 (5)	18:51	16 08:11 (8)
3	04:22	05:13	06:19	06:54 (5)	07:23	07:55 (8)
	22:19	21:31	20:12	15 07:09 (5)	18:48	17 08:12 (8)
4	04:23	05:15	06:21	06:53 (5)	07:25	07:55 (8)
	22:18	21:29	20:09	16 07:09 (5)	18:45	16 08:11 (8)
5	04:24	05:18	06:24	06:54 (5)	07:27	07:57 (8)
	22:18	21:27	20:06	15 07:09 (5)	18:42	14 08:11 (8)
6	04:25	05:20	06:26	06:56 (5)	07:29	07:59 (8)
	22:17	21:24	20:04	12 07:08 (5)	18:40	11 08:10 (8)
7	04:26	05:22	06:28	06:58 (5)	07:32	08:01 (8)
	22:16	21:22	20:01	10 07:08 (5)	18:37	7 08:08 (8)
8	04:28	05:24	06:30	07:00 (5)	07:34	08:04 (8)
	22:15	21:20	19:58	7 07:07 (5)	18:34	3 08:07 (8)
9	04:29	05:26	06:32	07:02 (5)	07:36	
	22:14	21:17	19:55	3 07:05 (5)	18:31	
10	04:30	05:28	06:34		07:38	
	22:13	21:15	19:53		18:29	
11	04:32	05:30	06:36		07:40	
	22:12	21:12	19:50		18:26	
12	04:33	05:32	06:38		07:42	
	22:10	21:10	19:47		18:23	
13	04:35	05:34	06:40		07:45	
	22:09	21:07	19:44		18:21	
14	04:36	05:37	06:43		07:47	
	22:08	21:05	19:41		18:18	
15	04:38	05:39	06:45		07:49	08:47 (7)
	22:06	21:02	19:38		18:15	10 08:57 (7)
16	04:39	05:41	06:47		07:51	08:45 (7)
	22:05	21:00	19:36		18:13	14 08:59 (7)
17	04:41	05:43	06:49		07:54	08:44 (7)
	22:03	20:57	19:33		18:10	17 09:01 (7)
18	04:43	05:45	06:51	07:46 (6)	07:56	08:42 (7)
	22:02	20:55	19:30	8 07:54 (6)	18:07	19 09:01 (7)
19	04:44	05:47	06:53	07:43 (6)	07:58	08:41 (7)
	22:00	20:52	19:27	13 07:56 (6)	18:05	20 09:01 (7)
20	04:46	05:49	06:55	07:41 (6)	08:00	08:41 (7)
	21:59	20:50	19:24	17 07:58 (6)	18:02	21 09:02 (7)
21	04:48	05:52	06:57	07:40 (6)	08:03	08:41 (7)
	21:57	20:47	19:22	18 07:58 (6)	17:59	20 09:01 (7)
22	04:50	05:54	06:59	07:39 (6)	08:05	08:41 (7)
	21:55	20:44	19:19	19 07:58 (6)	17:57	21 09:02 (7)
23	04:52	05:56	07:02	07:38 (6)	08:07	08:41 (7)
	21:53	20:42	19:16	20 07:58 (6)	17:54	20 09:01 (7)
24	04:53	05:58	07:04	07:37 (6)	08:09	08:42 (7)
	21:52	20:39	19:13	21 07:58 (6)	17:52	19 09:01 (7)
25	04:55	06:00	07:06	07:37 (6)	07:12	07:44 (7)
	21:50	20:36	19:10	20 07:57 (6)	16:49	15 07:59 (7)
26	04:57	06:02	07:08	07:37 (6)	07:14	07:46 (7)
	21:48	20:34	19:08	19 07:56 (6)	16:47	12 07:58 (7)
27	04:59	06:04	07:10	07:39 (6)	07:16	07:49 (7)
	21:46	20:31	19:05	16 07:55 (6)	16:44	7 07:56 (7)
28	05:01	06:07	07:12	07:42 (6)	07:18	07:51 (7)
	21:44	20:28	19:02	13 07:55 (6)	16:42	2 07:53 (7)
29	05:03	06:09	07:14	07:44 (6)	07:21	
	21:42	20:26	18:59	13 08:07 (8)	16:39	
30	05:05	06:11	07:16	07:46 (6)	07:23	
	21:40	20:23	18:56	14 08:09 (8)	16:37	
31	05:07	06:13	07:00 (5)		07:25	
	21:38	20:20	5 07:05 (5)		16:35	
Potential sun hours	538	474	386	321	241	207
Total, worst case		5	312	314		
Sun reduction		0.50	0.46	0.28		
Oper. time red.		1.00	1.00	1.00		
Wind dir. red.		1.00	1.00	1.00		
Total reduction		0.50	0.46	0.28		
Total, real		3	144	89		

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:00	08:21	07:13	17:15 (2)	06:47	05:27	04:27	04:20	05:09	06:15	07:18	07:27
2	15:39	16:40	17:46	17:16 (2)	19:55	21:01	22:02	22:20	21:35	20:17	18:53	16:32
3	09:00	08:19	07:11	17:13 (2)	06:45	05:25	04:25	04:21	05:11	06:17	07:20	07:30
4	15:40	16:42	17:48	17:18 (2)	19:57	21:03	22:04	22:19	21:33	20:14	18:50	17:52 (2)
5	09:00	08:17	07:08	17:11 (2)	06:42	05:23	04:24	04:21	05:13	06:19	07:22	07:32
6	15:42	16:44	17:50	17:20 (2)	19:59	21:06	22:05	22:19	21:31	20:12	18:48	17:49 (2)
7	08:59	08:15	07:05	17:10 (2)	06:39	05:20	04:23	04:22	05:15	06:21	07:25	07:34
8	15:43	16:47	17:52	17:22 (2)	20:01	21:08	22:07	22:18	21:28	20:09	18:45	17:47 (2)
9	08:59	08:12	07:02	17:09 (2)	06:36	05:18	04:22	04:24	05:17	06:23	07:27	07:37
10	15:45	16:49	17:55	17:25 (2)	20:04	21:10	22:08	22:17	21:26	20:06	18:42	17:47 (2)
11	08:58	08:10	07:00	17:10 (2)	06:34	05:15	04:21	04:25	05:19	06:25	07:29	07:39
12	15:46	16:52	17:57	17:28 (2)	20:06	21:12	22:09	22:16	21:24	20:03	18:39	17:46 (2)
13	08:57	08:08	06:57	17:09 (2)	06:31	05:13	04:20	04:26	05:21	06:27	07:31	07:41
14	15:48	16:54	17:59	17:28 (2)	20:08	21:14	22:11	22:16	21:22	20:01	18:37	17:45 (2)
15	08:56	08:06	06:54	17:09 (2)	06:28	05:11	04:19	04:27	05:23	06:29	07:33	07:43
16	15:49	16:56	18:02	17:28 (2)	20:10	21:16	22:12	22:15	21:19	19:58	18:34	17:45 (2)
17	08:56	08:03	06:52	17:10 (2)	06:25	05:09	04:18	04:28	05:26	06:32	07:35	07:45
18	15:51	16:59	18:04	17:27 (2)	20:12	21:19	22:13	22:14	21:17	19:55	18:31	17:45 (2)
19	08:55	08:01	06:49	17:10 (2)	06:23	05:06	04:18	04:30	05:28	06:34	07:38	07:48
20	15:53	17:01	18:06	17:25 (2)	20:15	21:21	22:14	22:12	21:14	19:52	18:28	17:46 (2)
21	08:54	07:59	06:46	17:13 (2)	06:20	05:04	04:17	04:31	05:30	06:36	07:40	07:50
22	15:55	17:03	18:08	17:24 (2)	20:17	21:23	22:15	22:11	21:12	19:49	18:26	17:46 (2)
23	08:53	07:56	06:43	17:16 (2)	06:17	05:02	04:17	04:33	05:32	06:38	07:42	07:53
24	15:56	17:06	18:11	17:20 (2)	20:19	21:25	22:16	22:10	21:10	19:47	18:23	17:50 (2)
25	08:52	07:54	06:41	17:10 (2)	06:14	05:00	04:16	04:34	05:34	06:40	07:44	07:55
26	15:58	17:08	18:13	17:21 (2)	20:21	21:27	22:17	22:09	21:07	19:44	18:20	16:05
27	08:51	07:52	06:38	17:10 (2)	06:12	04:58	04:16	04:36	05:36	06:42	07:46	07:57
28	16:00	17:11	18:15	17:23 (2)	20:23	21:29	22:18	22:07	21:05	19:41	18:17	16:03
29	08:49	07:49	06:35	17:10 (2)	06:09	04:56	04:15	04:37	05:38	06:44	07:49	07:59
30	16:02	17:13	18:17	17:24 (2)	20:26	21:31	22:18	22:06	21:02	19:38	18:15	16:01
31	08:48	07:47	06:32	17:10 (2)	06:06	04:53	04:15	04:39	05:40	06:46	07:51	08:02
32	16:04	17:15	18:20	17:25 (2)	20:28	21:33	22:19	22:05	21:00	19:35	18:12	16:00
33	08:47	07:44	06:29	17:13 (2)	06:04	04:51	04:15	04:40	05:43	06:48	07:53	08:04
34	16:06	17:18	18:22	17:24 (2)	20:30	21:35	22:20	22:03	20:57	19:32	18:10	15:58
35	08:45	07:42	06:27	17:10 (2)	06:01	04:49	04:15	04:42	05:45	06:51	07:55	08:06
36	16:08	17:20	18:24	17:26 (2)	20:32	21:37	22:20	22:02	20:54	19:30	18:07	15:56
37	08:44	07:39	06:24	17:10 (2)	05:58	04:48	04:15	04:44	05:47	06:53	07:58	08:08
38	16:10	17:22	18:26	17:27 (2)	20:35	21:39	22:20	22:00	20:52	19:27	18:04	15:54
39	08:42	07:37	06:21	17:10 (2)	05:56	04:46	04:15	04:46	05:49	06:55	08:00	08:10
40	16:13	17:25	18:28	17:28 (2)	20:37	21:41	22:21	21:58	20:49	19:24	18:02	15:52
41	08:41	07:34	06:18	17:10 (2)	05:53	04:44	04:15	04:47	05:51	06:57	08:02	08:13
42	16:15	17:27	18:31	17:29 (2)	20:39	21:43	22:21	21:57	20:47	19:21	17:59	15:51
43	08:39	07:32	06:15	17:10 (2)	05:50	04:42	04:15	04:49	05:53	06:59	08:04	08:15
44	16:17	17:29	18:33	17:30 (2)	20:41	21:45	22:21	21:55	20:44	19:18	17:56	15:49
45	08:38	07:29	06:13	17:10 (2)	05:48	04:40	04:15	04:51	05:55	07:01	08:07	08:17
46	16:19	17:32	18:35	17:31 (2)	20:43	21:47	22:21	21:53	20:41	19:16	17:54	15:48
47	08:36	07:26	06:10	17:10 (2)	05:45	04:38	04:15	04:53	05:58	07:03	08:09	08:19
48	16:21	17:34	18:37	17:32 (2)	20:46	21:49	22:22	21:51	20:39	19:13	17:51	15:46
49	08:34	07:24	06:07	17:10 (2)	05:43	04:37	04:16	04:55	06:00	07:05	07:11	08:21
50	16:24	17:36	18:39	17:33 (2)	20:48	21:51	22:21	21:49	20:36	19:10	16:49	15:45
51	08:32	07:21	06:04	17:10 (2)	05:40	04:35	04:16	04:57	06:02	07:07	07:14	08:23
52	16:26	17:39	18:42	17:34 (2)	20:50	21:52	22:21	21:47	20:33	19:07	16:46	15:43
53	08:31	07:19	06:01	17:10 (2)	05:37	04:34	04:17	04:59	06:04	07:10	07:16	08:25
54	16:28	17:41	18:44	17:35 (2)	20:52	21:54	22:21	21:45	20:31	19:04	16:44	15:42
55	08:29	07:16	05:59	17:10 (2)	05:35	04:32	04:17	05:01	06:06	07:12	07:18	08:27
56	16:30	17:43	18:46	17:36 (2)	20:54	21:56	22:21	21:43	20:28	19:02	16:41	15:43
57	08:27	07:13	06:56	17:10 (2)	05:32	04:31	04:18	05:03	06:08	07:14	07:20	08:29
58	16:33	17:46	18:49	17:37 (2)	20:57	21:58	22:21	21:41	20:25	18:59	16:39	15:46
59	08:25	07:10	06:53	17:10 (2)	05:30	04:29	04:19	05:05	06:10	07:16	07:23	08:31
60	16:35	17:48	18:51	17:38 (2)	20:59	21:59	22:20	21:39	20:23	18:56	16:37	15:47
61	08:23	07:08	06:50	17:10 (2)	05:28	04:28	04:17	05:07	06:12	07:18	07:25	08:32
62	16:37	17:50	18:53	17:39 (2)	21:01	22:01	22:21	21:37	20:20	16:34	15:48	15:38
Potential sun hours	227	262	365	429	515	539	538	474	386	321	241	207
Total, worst case												
Sun reduction		0.19	0.40							0.28	0.08	
Oper. time red.		1.00	1.00							1.00	1.00	
Wind dir. red.		1.00	1.00							1.00	1.00	
Total reduction		0.19	0.40							0.28	0.08	
Total, real		32	59							55	10	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa
Assumptions for shadow calculations

Shadow receptor: Bajari - Shadow Receptor: 1.0×1.0 Azimuth: 3.1° Slope: 90.0° (488)
Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January		February		March		April		May	June
1	09:00	14:42 (12)	08:21	15:46 (14)	07:13	16:29 (2)	06:48	05:27	04:27	
	15:39	11	14:53 (4)	16:40	17	16:03 (14)	17:46	13	16:42 (2)	19:55
2	09:00	14:42 (12)	08:19	15:47 (14)	07:11	16:33 (2)	06:45	05:25	04:25	
	15:41	12	14:54 (4)	16:42	18	16:05 (14)	17:48	4	16:37 (2)	19:57
3	09:00	14:43 (12)	08:17	15:48 (14)	07:08	16:04 (14)	17:53	06:42	05:23	04:24
	15:42	13	14:56 (4)	16:44	17	16:05 (14)	17:50	19:59	21:06	22:05
4	08:59	14:43 (12)	08:15	15:48 (14)	07:05	16:04 (14)	17:53	06:39	05:20	04:23
	15:43	15	14:58 (4)	16:47	16	16:04 (14)	17:53	20:01	21:08	22:07
5	08:59	14:44 (12)	08:12	15:50 (14)	07:03	16:03 (14)	17:55	06:36	05:18	04:22
	15:45	15	14:59 (4)	16:49	13	16:03 (14)	17:55	20:04	21:10	22:08
6	08:58	14:44 (12)	08:10	15:51 (14)	07:00	16:01 (14)	17:57	06:34	05:15	04:21
	15:46	17	15:01 (4)	16:52	10	16:01 (14)	17:57	20:06	21:12	22:09
7	08:57	14:45 (12)	08:08	15:54 (14)	06:57	15:59 (14)	17:59	06:31	05:13	04:20
	15:48	18	15:03 (4)	16:54	5	15:59 (14)	17:59	20:08	21:14	22:11
8	08:57	14:45 (12)	08:06	15:54 (14)	06:54	15:59 (14)	17:59	06:28	05:11	04:19
	15:49	20	15:05 (4)	16:56	18:02	15:59 (14)	17:59	20:10	21:16	22:12
9	08:56	14:46 (4)	08:03	15:54 (14)	06:52	15:59 (14)	17:59	06:25	05:09	04:18
	15:51	21	15:07 (4)	16:59	18:04	15:59 (14)	17:59	20:12	21:19	22:13
10	08:55	14:47 (4)	08:01	15:54 (14)	06:49	15:59 (14)	17:59	06:23	05:06	04:18
	15:53	22	15:09 (4)	17:01	18:06	15:59 (14)	17:59	20:15	21:21	22:14
11	08:54	14:46 (4)	07:59	15:54 (14)	06:46	15:59 (14)	17:59	06:20	05:04	04:17
	15:55	23	15:09 (4)	17:03	18:08	15:59 (14)	17:59	20:17	21:23	22:15
12	08:53	14:47 (4)	07:56	15:54 (14)	06:43	15:59 (14)	17:59	06:17	05:02	04:17
	15:57	23	15:10 (4)	17:06	18:11	15:59 (14)	17:59	20:19	21:25	22:16
13	08:52	14:47 (4)	07:54	16:30 (2)	06:41	16:30 (2)	18:13	06:14	05:00	04:16
	15:58	23	15:10 (4)	17:08	5	16:35 (2)	18:13	20:21	21:27	22:17
14	08:51	14:48 (4)	07:52	16:27 (2)	06:38	16:27 (2)	18:13	06:12	04:58	04:16
	16:00	23	15:11 (4)	17:11	11	16:38 (2)	18:15	20:24	21:29	22:18
15	08:49	14:47 (4)	07:49	16:25 (2)	06:35	16:25 (2)	18:17	06:09	04:56	04:15
	16:02	24	15:11 (4)	17:13	15	16:40 (2)	18:17	20:26	21:31	22:18
16	08:48	14:48 (4)	07:47	16:25 (2)	06:32	16:25 (2)	18:20	06:06	04:53	04:15
	16:04	24	15:12 (4)	17:15	18	16:43 (2)	18:20	20:28	21:33	22:19
17	08:47	14:49 (4)	07:44	16:24 (2)	06:29	16:24 (2)	18:22	06:04	04:51	04:15
	16:06	23	15:12 (4)	17:18	21	16:45 (2)	18:22	20:30	21:35	22:20
18	08:45	14:49 (4)	07:42	16:24 (2)	06:27	16:24 (2)	18:24	06:01	04:50	04:15
	16:08	23	15:12 (4)	17:20	24	16:48 (2)	18:24	17:55 (1)	20:32	21:37
19	08:44	14:49 (4)	07:39	16:23 (2)	06:24	16:23 (2)	18:26	17:53 (1)	05:58	04:48
	16:10	23	15:12 (4)	17:22	28	16:51 (3)	18:26	4	17:57 (1)	20:35
20	08:42	14:51 (4)	07:37	16:22 (2)	06:21	16:22 (2)	18:28	17:52 (1)	05:56	04:46
	16:13	22	15:13 (4)	17:25	31	16:53 (3)	18:28	7	17:59 (1)	20:37
21	08:41	14:51 (4)	07:34	16:22 (2)	06:18	16:22 (2)	18:31	17:51 (1)	05:53	04:44
	16:15	22	15:13 (4)	17:27	33	16:55 (3)	18:31	10	18:01 (1)	20:39
22	08:39	14:52 (4)	07:32	16:22 (2)	06:16	16:22 (2)	18:33	17:51 (1)	05:50	04:42
	16:17	20	15:12 (4)	17:29	36	16:58 (3)	18:33	12	18:03 (1)	20:41
23	08:38	14:53 (4)	07:29	16:22 (2)	06:13	16:22 (2)	18:35	17:52 (1)	05:48	04:40
	16:19	19	15:12 (4)	17:32	39	17:01 (3)	18:35	14	18:06 (1)	20:43
24	08:36	14:54 (4)	07:26	16:22 (2)	06:10	16:22 (2)	18:37	17:53 (1)	05:45	04:39
	16:21	18	15:12 (4)	17:34	41	17:03 (3)	18:37	13	18:06 (1)	20:46
25	08:34	14:55 (4)	07:24	16:23 (2)	06:07	16:23 (2)	18:39	17:53 (1)	05:43	04:37
	16:24	16	15:11 (4)	17:36	41	17:04 (3)	18:39	11	18:04 (1)	20:48
26	08:32	14:57 (4)	07:21	16:24 (2)	06:04	16:24 (2)	18:42	17:56 (1)	05:40	04:35
	16:26	14	15:48 (14)	17:39	35	17:02 (3)	18:42	5	18:01 (1)	20:50
27	08:31	14:59 (4)	07:19	16:24 (2)	06:02	16:24 (2)	18:44	05:37	04:34	04:17
	16:28	12	15:50 (14)	17:41	31	17:00 (3)	18:44	20:52	21:54	22:21
28	08:29	15:46 (14)	07:16	16:26 (2)	05:59	16:26 (2)	18:46	05:35	04:32	04:17
	16:30	6	15:52 (14)	17:43	21	16:57 (3)	18:46	20:55	21:56	22:21
29	08:27	15:46 (14)	07:14	16:26 (2)	05:56	16:57 (3)	18:46	05:32	04:31	04:18
	16:33	9	15:55 (14)	17:44	19:48	16:57 (3)	18:46	20:57	21:58	22:21
30	08:25	15:46 (14)	07:13	16:26 (2)	05:53	16:57 (3)	18:46	05:30	04:29	04:19
	16:35	12	15:58 (14)	17:46	19:50	16:57 (3)	18:46	20:59	21:59	22:20
31	08:23	15:47 (14)	07:12	16:26 (2)	05:50	16:57 (3)	18:46	05:28	04:28	04:17
	16:37	14	16:01 (14)	17:48	19:53	16:57 (3)	18:46	22:01	04:28	04:17
Potential sun hours	227		262		365		429	515	539	
Total, worst case	557		526		94					
Sun reduction	0.11		0.19		0.40					
Oper. time red.	1.00		1.00		1.00					
Wind dir. red.	1.00		1.00		1.00					
Total reduction	0.11		0.19		0.40					
Total, real	61		102		38					

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Bajari - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (488)
Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) []

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
0.80 1.82 4.75 6.09 9.67 10.05 8.16 7.72 5.94 2.93 0.63 0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	July	August	September	October	November	December
1	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:27 16:32	08:33 15:37 23
2	04:21 22:19	05:11 21:33	06:17 20:14	07:20 18:50	07:30 16:29	08:35 15:36 23
3	04:21 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:36 15:35 21
4	04:22 22:18	05:15 21:28	06:21 20:09	07:25 18:45	07:34 16:25	08:38 15:29 (14) 20
5	04:24 22:17	05:17 21:26	06:23 20:06	07:27 18:42	07:37 16:23	08:40 15:31 (14) 18
6	04:25 22:16	05:19 21:24	06:25 20:03	07:29 18:39	07:39 16:20	08:41 15:19 (14) 17
7	04:26 22:16	05:21 21:22	06:27 20:01	07:31 18:37	07:41 16:18	08:43 15:34 (14) 16
8	04:27 22:15	05:23 21:19	06:29 19:58	07:33 18:34	07:43 16:16	08:44 15:34 (14) 15
9	04:28 22:14	05:26 21:17	06:32 19:55	07:36 18:31	07:46 16:14	08:46 15:35 (14) 13
10	04:30 22:12	05:28 21:14	06:34 19:52	07:38 18:28	07:48 16:12	08:47 15:17 (14) 12
11	04:31 22:11	05:30 21:12	06:36 19:49	07:40 18:26	07:50 16:10	08:49 15:32 (14) 11
12	04:33 22:10	05:32 21:10	06:38 19:47	07:42 18:23	07:53 16:07	08:50 15:17 (14) 10
13	04:34 22:09	05:34 21:07	06:40 19:44	07:44 18:20	07:55 16:05	08:51 15:29 (14) 9
14	04:36 22:08	05:36 21:05	06:42 19:41	07:47 18:18	07:57 16:03	08:52 15:27 (14) 8
15	04:37 22:06	05:38 21:02	06:44 19:38	07:49 18:15	07:59 16:02	08:53 15:25 (14) 7
16	04:39 22:05	05:40 21:00	06:46 19:35	07:51 18:12	08:02 16:00	08:54 15:22 (14) 7
17	04:40 22:03	05:43 20:57	06:48 19:33	07:53 18:10	08:04 15:58	08:55 14:30 (4) 6
18	04:42 22:02	05:45 20:54	06:51 19:30	07:55 18:07	08:06 15:56	08:56 14:28 (4) 6
19	04:44 22:00	05:47 20:52	06:53 19:27	07:58 18:04	08:08 15:54	08:57 14:26 (4) 6
20	04:46 21:58	05:49 20:49	06:55 19:24	08:00 18:02	08:10 15:52	08:58 14:46 (4) 5
21	04:47 21:57	05:51 20:47	06:57 19:21	08:02 18:00	08:13 15:51	08:58 14:44 (4) 5
22	04:49 21:55	05:53 20:44	06:59 19:18	08:04 17:57	08:15 15:49	08:59 14:42 (4) 5
23	04:51 21:53	05:55 20:41	07:01 19:16	08:07 17:54	08:17 15:48	08:59 14:40 (4) 5
24	04:53 21:51	05:58 20:39	07:03 19:13	08:09 17:51	08:19 15:46	09:00 14:38 (12) 6
25	04:55 21:49	06:00 20:36	07:05 19:10	08:11 17:49	08:21 15:45	09:00 14:36 (12) 6
26	04:57 21:47	06:02 20:33	07:08 19:07	08:14 17:46	08:23 15:43	09:00 14:40 (12) 6
27	04:59 21:45	06:04 20:31	07:10 19:04	08:16 17:44	08:25 15:42	09:01 14:50 (4) 7
28	05:01 21:43	06:06 20:28	07:12 19:02	08:18 17:41	08:27 15:41	09:01 14:58 (4) 7
29	05:03 21:41	06:08 20:25	07:14 18:59	08:20 17:39	08:29 15:39	09:01 14:51 (4) 8
30	05:05 21:39	06:10 20:23	07:16 18:56	08:23 17:37	08:31 15:38	09:01 14:48 (4) 9
31	05:07 21:37	06:13 20:20		08:25 16:34		09:00 15:38 9
Potential sun hours	538	474	386	321	241	207
Total, worst case			78	457	466	326
Sun reduction			0.46	0.28	0.08	0.06
Oper. time red.			1.00	1.00	1.00	1.00
Wind dir. red.			1.00	1.00	1.00	1.00
Total reduction			0.46	0.28	0.08	0.06
Total, real			36	129	37	20

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Last time (hh:mm) with flicker	(WTG causing flicker last time)
	Minutes with flicker		

Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Blaumana iela 2 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (666)
Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:28 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
2	09:00 15:40	08:19 16:42	07:11 17:48	06:45 19:57	05:25 21:04	04:25 22:04	04:20 22:20	05:11 21:33	06:17 20:15	07:21 18:51	07:30 16:29	08:35 15:36
3	09:00 15:42	08:17 16:44	07:08 17:50	06:42 19:59	05:23 21:06	04:24 22:06	04:21 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:37 15:35
4	08:59 15:43	08:15 16:47	07:05 17:53	06:39 20:02	05:20 21:08	04:23 22:07	04:22 22:18	05:15 21:29	06:21 20:09	07:25 18:45	07:35 16:25	08:38 15:34
5	08:59 15:45	08:13 16:49	07:03 17:55	06:37 20:04	05:18 21:10	04:22 22:09	04:23 22:18	05:17 21:27	06:23 20:06	07:27 18:42	07:37 16:23	08:40 15:33
6	08:58 15:46	08:10 16:52	07:00 17:57	06:34 20:06	05:15 21:12	04:21 22:10	04:25 22:17	05:19 21:24	06:25 20:04	07:29 18:39	07:39 16:20	08:42 15:32
7	08:58 15:48	08:08 16:54	06:57 17:59	06:31 20:08	05:13 21:15	04:20 22:11	04:26 22:16	05:21 21:22	06:27 20:01	07:31 18:37	07:41 16:18	08:43 15:32
8	08:57 15:49	08:06 16:56	06:55 18:02	06:28 20:10	05:11 21:17	04:19 22:12	04:27 22:15	05:23 21:20	06:30 19:58	07:34 18:34	07:44 16:16	08:45 15:31
9	08:56 15:51	08:04 16:59	06:52 18:04	06:25 20:13	05:09 21:19	04:18 22:13	04:28 22:14	05:26 21:17	06:32 19:55	07:36 18:31	07:46 16:14	08:46 15:30
10	08:55 15:53	08:01 17:01	06:49 18:06	06:23 20:15	05:06 21:21	04:18 22:14	04:30 22:13	05:28 21:15	06:34 19:52	07:38 18:28	07:48 16:12	08:48 15:30
11	08:54 15:55	07:59 17:04	06:46 18:09	06:20 20:17	05:04 21:23	04:17 22:15	04:31 22:12	05:30 21:12	06:36 19:50	07:40 18:26	07:51 16:10	08:49 15:30
12	08:53 15:57	07:57 17:06	06:44 18:11	06:17 20:19	05:02 21:25	04:16 22:16	04:33 22:10	05:32 21:10	06:38 19:47	07:42 18:23	07:53 16:07	08:50 15:29
13	08:52 15:58	07:54 17:08	06:41 18:13	06:14 20:22	05:00 21:27	04:16 22:17	04:34 22:09	05:34 21:07	06:40 19:44	07:45 18:20	07:55 16:05	08:51 15:29
14	08:51 16:00	07:52 17:11	06:38 18:15	06:12 20:24	04:58 21:29	04:16 22:18	04:36 22:08	05:36 21:05	06:42 19:41	07:47 18:18	07:57 16:03	08:53 15:29
15	08:50 16:02	07:49 17:13	06:35 18:17	06:09 20:26	04:56 21:32	04:15 22:19	04:37 22:06	05:38 21:02	06:44 19:38	07:49 18:15	08:00 16:02	08:54 15:29
16	08:48 16:04	07:47 17:15	06:32 18:20	06:06 20:28	04:54 21:34	04:15 22:19	04:39 22:05	05:41 21:00	06:46 19:36	07:51 18:12	08:02 16:00	08:55 15:29
17	08:47 16:06	07:45 17:18	06:30 18:22	06:04 20:30	04:51 21:36	04:15 22:20	04:40 22:04	05:43 20:57	06:49 19:33	07:53 18:10	08:04 15:58	08:56 15:29
18	08:46 16:08	07:42 17:20	06:27 18:24	06:01 20:33	04:50 21:38	04:15 22:20	04:42 22:02	05:45 20:55	06:51 19:30	07:56 18:07	08:06 15:56	08:57 15:29
19	08:44 16:10	07:40 17:22	06:24 18:26	05:58 20:35	04:48 21:40	04:15 22:21	04:44 22:00	05:47 20:52	06:53 19:27	07:58 18:04	08:09 15:54	08:57 15:29
20	08:43 16:13	07:37 17:25	06:21 18:29	05:56 20:37	04:46 21:42	04:15 22:21	04:46 21:59	05:49 20:50	06:55 19:24	08:00 18:02	08:11 15:53	08:58 15:29
21	08:41 16:15	07:34 17:27	06:18 18:31	05:53 20:39	04:44 21:44	04:15 22:22	04:47 21:57	05:51 20:47	06:57 19:21	08:02 17:59	08:13 15:51	08:59 15:30
22	08:40 16:17	07:32 17:29	06:16 18:33	05:50 20:41	04:42 21:45	04:15 22:22	04:49 21:55	05:53 20:44	06:59 19:19	08:05 17:57	08:15 15:49	08:59 15:30
23	08:38 16:19	07:29 17:32	06:13 18:35	05:48 20:44	04:40 21:47	04:15 22:22	04:51 21:53	05:56 20:42	07:01 19:16	08:07 17:54	08:17 15:48	09:00 15:31
24	08:36 16:21	07:27 17:34	06:10 18:37	05:45 20:46	04:39 21:49	04:15 22:22	04:53 21:52	05:58 20:39	07:03 19:13	08:09 17:51	08:19 15:46	09:00 15:31
25	08:35 16:24	07:24 17:36	06:07 18:40	05:43 20:48	04:37 21:51	04:16 22:22	04:55 21:50	06:00 20:36	07:06 19:10	07:11 16:49	08:21 15:45	09:00 15:32
26	08:33 16:26	07:21 17:39	06:04 18:42	05:40 20:50	04:35 21:53	04:16 22:22	04:57 21:48	06:02 20:34	07:08 19:07	07:14 16:46	08:23 15:43	09:01 15:33
27	08:31 16:28	07:19 17:41	06:02 18:44	05:38 20:53	04:34 21:55	04:17 22:22	04:59 21:46	06:04 20:31	07:10 19:05	07:16 16:44	08:25 15:42	09:01 15:34
28	08:29 16:30	07:16 17:43	05:59 18:46	05:35 20:55	04:32 21:56	04:17 22:21	05:01 21:44	06:06 20:28	07:12 19:02	07:18 16:41	08:27 15:41	09:01 15:34
29	08:27 16:33		05:56 19:48	05:32 20:57	04:31 21:58	04:18 22:21	05:03 21:42	06:08 20:26	07:14 18:59	07:21 16:39	08:29 15:39	09:01 15:35
30	08:25 16:35		05:53 19:51	05:30 20:59	04:29 22:00	04:19 22:21	05:05 21:40	06:10 20:23	07:16 18:56	07:23 16:37	08:31 15:38	09:01 15:37
31	08:23 16:37		05:50 19:53		04:28 22:01		05:07 21:38	06:13 20:20		07:25 16:34		09:01 15:38
Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Blaumana iela 2A - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (675)
Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:28 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
2	09:00 15:40	08:19 16:42	07:11 17:48	06:45 19:57	05:25 21:04	04:25 22:04	04:20 22:20	05:11 21:33	06:17 20:15	07:21 18:51	07:30 16:29	08:35 15:36
3	09:00 15:42	08:17 16:44	07:08 17:50	06:42 19:59	05:23 21:06	04:24 22:06	04:21 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:37 15:35
4	08:59 15:43	08:15 16:47	07:05 17:53	06:39 20:02	05:20 21:08	04:23 22:07	04:22 22:18	05:15 21:29	06:21 20:09	07:25 18:45	07:35 16:25	08:38 15:34
5	08:59 15:45	08:13 16:49	07:03 17:55	06:37 20:04	05:18 21:10	04:22 22:09	04:24 22:18	05:17 21:26	06:23 20:06	07:27 18:42	07:37 16:23	08:40 15:33
6	08:58 15:46	08:10 16:52	07:00 17:57	06:34 20:06	05:15 21:12	04:21 22:10	04:25 22:17	05:19 21:24	06:25 20:04	07:29 18:39	07:39 16:20	08:42 15:32
7	08:58 15:48	08:08 16:54	06:57 17:59	06:31 20:08	05:13 21:15	04:20 22:11	04:26 22:16	05:21 21:22	06:27 20:01	07:31 18:37	07:41 16:18	08:43 15:32
8	08:57 15:49	08:06 16:56	06:55 18:02	06:28 20:10	05:11 21:17	04:19 22:12	04:27 22:15	05:23 21:20	06:30 19:58	07:34 18:34	07:44 16:16	08:45 15:31
9	08:56 15:51	08:04 16:59	06:52 18:04	06:25 20:13	05:09 21:19	04:18 22:13	04:28 22:14	05:26 21:17	06:32 19:55	07:36 18:31	07:46 16:14	08:46 15:30
10	08:55 15:53	08:01 17:01	06:49 18:06	06:23 20:15	05:06 21:21	04:18 22:14	04:30 22:13	05:28 21:15	06:34 19:52	07:38 18:28	07:48 16:12	08:48 15:30
11	08:54 15:55	07:59 17:04	06:46 18:09	06:20 20:17	05:04 21:23	04:17 22:15	04:31 22:12	05:30 21:12	06:36 19:50	07:40 18:26	07:51 16:10	08:49 15:30
12	08:53 15:57	07:57 17:06	06:44 18:11	06:17 20:19	05:02 21:25	04:16 22:16	04:33 22:10	05:32 21:10	06:38 19:47	07:42 18:23	07:53 16:07	08:50 15:29
13	08:52 15:58	07:54 17:08	06:41 18:13	06:14 20:22	05:00 21:27	04:16 22:17	04:34 22:09	05:34 21:07	06:40 19:44	07:45 18:20	07:55 16:05	08:51 15:29
14	08:51 16:00	07:52 17:11	06:38 18:15	06:12 20:24	04:58 21:29	04:16 22:18	04:36 22:08	05:36 21:05	06:42 19:41	07:47 18:18	07:57 16:04	08:53 15:29
15	08:50 16:02	07:49 17:13	06:35 18:17	06:09 20:26	04:56 21:32	04:15 22:19	04:37 22:06	05:38 21:02	06:44 19:38	07:49 18:15	08:00 16:02	08:54 15:29
16	08:48 16:04	07:47 17:15	06:32 18:20	06:06 20:28	04:54 21:34	04:15 22:19	04:39 22:05	05:41 21:00	06:46 19:36	07:51 18:12	08:02 16:00	08:55 15:29
17	08:47 16:06	07:45 17:18	06:30 18:22	06:04 20:30	04:51 21:36	04:15 22:20	04:40 22:03	05:43 20:57	06:49 19:33	07:53 18:10	08:04 15:58	08:56 15:29
18	08:46 16:08	07:42 17:20	06:27 18:24	06:01 20:33	04:50 21:38	04:15 22:20	04:42 22:02	05:45 20:55	06:51 19:30	07:56 18:07	08:06 15:56	08:56 15:29
19	08:44 16:10	07:40 17:22	06:24 18:26	05:58 20:35	04:48 21:40	04:15 22:21	04:44 22:00	05:47 20:52	06:53 19:27	07:58 18:04	08:09 15:54	08:57 15:29
20	08:43 16:13	07:37 17:25	06:21 18:29	05:56 20:37	04:46 21:42	04:15 22:21	04:46 21:59	05:49 20:50	06:55 19:24	08:00 18:02	08:11 15:53	08:58 15:29
21	08:41 16:15	07:34 17:27	06:18 18:31	05:53 20:39	04:44 21:44	04:15 22:22	04:47 21:57	05:51 20:47	06:57 19:21	08:02 17:59	08:13 15:51	08:59 15:30
22	08:40 16:17	07:32 17:29	06:16 18:33	05:50 20:41	04:42 21:45	04:15 22:22	04:49 21:55	05:53 20:44	06:59 19:19	08:05 17:57	08:15 15:49	08:59 15:30
23	08:38 16:19	07:29 17:32	06:13 18:35	05:48 20:44	04:40 21:47	04:15 22:22	04:51 21:53	05:56 20:42	07:01 19:16	08:07 17:54	08:17 15:48	09:00 15:31
24	08:36 16:21	07:27 17:34	06:10 18:37	05:45 20:46	04:39 21:49	04:15 22:22	04:53 21:52	05:58 20:39	07:03 19:13	08:09 17:51	08:19 15:46	09:00 15:31
25	08:35 16:24	07:24 17:36	06:07 18:40	05:43 20:48	04:37 21:51	04:16 22:22	04:55 21:50	06:00 20:36	07:06 19:10	07:11 16:49	08:21 15:45	09:00 15:32
26	08:33 16:26	07:21 17:39	06:04 18:42	05:40 20:50	04:35 21:53	04:16 22:22	04:57 21:48	06:02 20:34	07:08 19:07	07:14 16:46	08:23 15:43	09:01 15:33
27	08:31 16:28	07:19 17:41	06:02 18:44	05:38 20:53	04:34 21:55	04:17 22:22	04:59 21:46	06:04 20:31	07:10 19:05	07:16 16:44	08:25 15:42	09:01 15:34
28	08:29 16:30	07:16 17:43	05:59 18:46	05:35 20:55	04:32 21:56	04:17 22:21	05:01 21:44	06:06 20:28	07:12 19:02	07:18 16:41	08:27 15:41	09:01 15:34
29	08:27 16:33		05:56 19:48	05:32 20:57	04:31 21:58	04:18 22:21	05:03 21:42	06:08 20:26	07:14 18:59	07:21 16:39	08:29 15:39	09:01 15:35
30	08:25 16:35		05:53 19:51	05:30 20:59	04:29 22:00	04:19 22:21	05:05 21:40	06:10 20:23	07:16 18:56	07:23 16:37	08:31 15:38	09:01 15:37
31	08:23 16:37		05:50 19:53		04:28 22:01		05:07 21:38	06:13 20:20		07:25 16:34		09:01 15:38
Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Brandini - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (498)
 Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:00 15:39	08:21 16:40	07:13 17:46	06:47 19:55	05:27 21:01	04:27 22:02	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:27 16:32	08:33 15:37
2	09:00 15:40	08:19 16:42	07:10 17:48	06:45 19:57	05:25 21:03	04:25 22:04	04:21 22:19	05:11 21:33	06:17 20:14	07:20 18:50	07:30 16:29	08:34 15:36
3	08:59 15:42	08:17 16:44	07:08 17:50	06:42 19:59	05:23 21:05	04:24 22:05	04:21 22:19	05:13 21:31	06:19 20:12	07:22 18:48	07:32 16:27	08:36 15:35
4	08:59 15:43	08:14 16:47	07:05 17:52	06:39 20:01	05:20 21:08	04:23 22:07	04:22 22:18	05:15 21:28	06:21 20:09	07:25 18:45	07:34 16:25	08:38 15:34
5	08:58 15:45	08:12 16:49	07:02 17:55	06:36 20:04	05:18 21:10	04:22 22:08	04:24 22:17	05:17 21:26	06:23 20:06	07:27 18:42	07:36 16:22	08:40 15:33
6	08:58 15:46	08:10 16:51	07:00 17:57	06:34 20:06	05:15 21:12	04:21 22:09	04:25 22:16	05:19 21:24	06:25 20:03	07:29 18:39	07:39 16:20	08:41 15:32
7	08:57 15:48	08:08 16:54	06:57 17:59	06:31 20:08	05:13 21:14	04:20 22:11	04:26 22:15	05:21 21:21	06:27 20:00	07:31 18:36	07:41 16:18	08:43 15:32
8	08:56 15:49	08:06 16:56	06:54 18:02	06:28 20:10	05:11 21:16	04:19 22:12	04:27 22:14	05:23 21:19	06:29 19:58	07:33 18:34	07:43 16:16	08:44 15:31
9	08:56 15:51	08:03 16:59	06:52 18:04	06:25 20:12	05:08 21:18	04:18 22:13	04:28 22:13	05:25 21:17	06:31 19:55	07:35 18:31	07:46 16:14	08:46 15:30
10	08:55 15:53	08:01 17:01	06:49 18:06	06:23 20:15	05:06 21:21	04:18 22:14	04:30 22:12	05:28 21:14	06:34 19:52	07:38 18:28	07:48 16:12	08:47 15:30
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31	08:23 16:37		06:50 19:53		04:28 22:01		05:07 21:37	06:12 20:20		07:25 16:34		09:00 15:38
Potential sun hours	227	262	365	429	515	539	538	474	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Cimzes iela 1 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (698)
 Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:28 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
2	09:00 15:40	08:19 16:42	07:11 17:48	06:45 19:57	05:25 21:04	04:25 22:04	04:20 22:20	05:11 21:33	06:17 20:15	07:21 18:51	07:30 16:29	08:35 15:36
3	09:00 15:42	08:17 16:44	07:08 17:50	06:42 19:59	05:23 21:06	04:24 22:06	04:21 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:37 15:35
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5	08:59 15:45	08:13 16:49	07:03 17:55	06:37 20:04	05:18 21:10	04:22 22:09	04:24 22:18	05:17 21:26	06:23 20:06	07:27 18:42	07:37 16:23	08:40 15:33
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31	08:23 16:37		06:50 19:53		04:28 22:01		05:07 21:38	06:13 20:20		07:25 16:34		09:01 15:38
Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Cimzes iela 10 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (562)
 Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:28 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
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26	08:33 16:26	07:21 17:39	06:04 18:42	05:40 20:50	04:35 21:53	04:16 22:22	04:57 21:48	06:02 20:34	07:08 19:07	07:14 16:46	08:23 15:43	09:01 15:33
27	08:31 16:28	07:19 17:41	06:02 18:44	05:38 20:53	04:34 21:55	04:17 22:22	04:59 21:46	06:04 20:31	07:10 19:05	07:16 16:44	08:25 15:42	09:01 15:34
28	08:29 16:30	07:16 17:43	05:59 18:46	05:35 20:55	04:32 21:56	04:17 22:21	05:01 21:44	06:06 20:28	07:12 19:02	07:18 16:41	08:27 15:41	09:01 15:34
29	08:27 16:33		06:56 19:48	05:32 20:57	04:31 21:58	04:18 22:21	05:03 21:42	06:08 20:26	07:14 18:59	07:21 16:39	08:29 15:39	09:01 15:35
30	08:25 16:35		06:53 19:51	05:30 20:59	04:29 22:00	04:19 22:21	05:05 21:40	06:10 20:23	07:16 18:56	07:23 16:37	08:31 15:38	09:01 15:37
31	08:23 16:37		06:50 19:53		04:28 22:01		05:07 21:38	06:13 20:20		07:25 16:34		09:01 15:38
Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Cimzes iela 11 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (521)
Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01	08:21	07:13	06:48	05:28	04:27	04:20	05:09	06:15	07:18	07:28	08:33
	15:39	16:40	17:46	19:55	21:01	22:03	22:20	21:35	20:17	18:53	16:32	15:37
2	09:00	08:19	07:11	06:45	05:25	04:25	04:21	05:11	06:17	07:21	07:30	08:35
	15:40	16:42	17:48	19:57	21:04	22:04	22:20	21:33	20:15	18:51	16:29	15:36
3	09:00	08:17	07:08	06:42	05:23	04:24	04:21	05:13	06:19	07:23	07:32	08:37
	15:42	16:44	17:50	19:59	21:06	22:06	22:19	21:31	20:12	18:48	16:27	15:35
4	08:59	08:15	07:05	06:39	05:20	04:23	04:22	05:15	06:21	07:25	07:34	08:38
	15:43	16:47	17:53	20:02	21:08	22:07	22:18	21:29	20:09	18:45	16:25	15:34
5	08:59	08:13	07:03	06:37	05:18	04:22	04:24	05:17	06:23	07:27	07:37	08:40
	15:45	16:49	17:55	20:04	21:10	22:08	22:18	21:26	20:06	18:42	16:23	15:33
6	08:58	08:10	07:00	06:34	05:16	04:21	04:25	05:19	06:25	07:29	07:39	08:42
	15:46	16:52	17:57	20:06	21:12	22:10	22:17	21:24	20:04	18:39	16:20	15:32
7	08:58	08:08	06:57	06:31	05:13	04:20	04:26	05:21	06:27	07:31	07:41	08:43
	15:48	16:54	17:59	20:08	21:15	22:11	22:16	21:22	20:01	18:37	16:18	15:32
8	08:57	08:06	06:55	06:28	05:11	04:19	04:27	05:23	06:30	07:34	07:44	08:45
	15:49	16:56	18:02	20:10	21:17	22:12	22:15	21:19	19:58	18:34	16:16	15:31
9	08:56	08:04	06:52	06:25	05:09	04:18	04:28	05:26	06:32	07:36	07:46	08:46
	15:51	16:59	18:04	20:13	21:19	22:13	22:14	21:17	19:55	18:31	16:14	15:31
10	08:55	08:01	06:49	06:23	05:06	04:18	04:30	05:28	06:34	07:38	07:48	08:48
	15:53	17:01	18:06	20:15	21:21	22:14	22:13	21:15	19:52	18:28	16:12	15:30
11	08:54	07:59	06:46	06:20	05:04	04:17	04:31	05:30	06:36	07:40	07:51	08:49
	15:55	17:04	18:09	20:17	21:23	22:15	22:12	21:12	19:50	18:26	16:10	15:30
12	08:53	07:57	06:44	06:17	05:02	04:17	04:33	05:32	06:38	07:42	07:53	08:50
	15:57	17:06	18:11	20:19	21:25	22:16	22:10	21:10	19:47	18:23	16:07	15:29
13	08:52	07:54	06:41	06:14	05:00	04:16	04:34	05:34	06:40	07:44	07:55	08:51
	15:58	17:08	18:13	20:22	21:27	22:17	22:09	21:07	19:44	18:20	16:05	15:29
14	08:51	07:52	06:38	06:12	04:58	04:16	04:36	05:36	06:42	07:47	07:57	08:53
	16:00	17:11	18:15	20:24	21:29	22:18	22:08	21:05	19:41	18:18	16:04	15:29
15	08:50	07:49	06:35	06:09	04:56	04:15	04:37	05:38	06:44	07:49	08:00	08:54
	16:02	17:13	18:17	20:26	21:32	22:19	22:06	21:02	19:38	18:15	16:02	15:29
16	08:48	07:47	06:32	06:06	04:54	04:15	04:39	05:41	06:46	07:51	08:02	08:55
	16:04	17:15	18:20	20:28	21:34	22:19	22:05	21:00	19:35	18:12	16:00	15:29
17	08:47	07:44	06:30	06:04	04:51	04:15	04:40	05:43	06:49	07:53	08:04	08:56
	16:06	17:18	18:22	20:30	21:36	22:20	22:03	20:57	19:33	18:10	15:58	15:29
18	08:46	07:42	06:27	06:01	04:50	04:15	04:42	05:45	06:51	07:56	08:06	08:56
	16:08	17:20	18:24	20:33	21:38	22:20	22:02	20:55	19:30	18:07	15:56	15:29
19	08:44	07:39	06:24	05:58	04:48	04:15	04:44	05:47	06:53	07:58	08:09	08:57
	16:10	17:22	18:26	20:35	21:40	22:21	22:00	20:52	19:27	18:04	15:54	15:29
20	08:43	07:37	06:21	05:56	04:46	04:15	04:46	05:49	06:55	08:00	08:11	08:58
	16:13	17:25	18:29	20:37	21:42	22:21	21:59	20:50	19:24	18:02	15:53	15:29
21	08:41	07:34	06:18	05:53	04:44	04:15	04:47	05:51	06:57	08:02	08:13	08:59
	16:15	17:27	18:31	20:39	21:44	22:21	21:57	20:47	19:21	17:59	15:51	15:30
22	08:40	07:32	06:16	05:50	04:42	04:15	04:49	05:53	06:59	08:05	08:15	08:59
	16:17	17:29	18:33	20:41	21:45	22:22	21:55	20:44	19:19	17:57	15:49	15:30
23	08:38	07:29	06:13	05:48	04:40	04:15	04:51	05:56	07:01	08:07	08:17	09:00
	16:19	17:32	18:35	20:44	21:47	22:22	21:53	20:42	19:16	17:54	15:48	15:31
24	08:36	07:27	06:10	05:45	04:39	04:15	04:53	05:58	07:03	08:09	08:19	09:00
	16:21	17:34	18:37	20:46	21:49	22:22	21:52	20:39	19:13	17:51	15:46	15:31
25	08:34	07:24	06:07	05:43	04:37	04:16	04:55	06:00	07:06	07:11	08:21	09:00
	16:24	17:36	18:40	20:48	21:51	22:22	21:50	20:36	19:10	16:49	15:45	15:32
26	08:33	07:21	06:04	05:40	04:35	04:16	04:57	06:02	07:08	07:14	08:23	09:01
	16:26	17:39	18:42	20:50	21:53	22:22	21:48	20:34	19:07	16:46	15:43	15:33
27	08:31	07:19	06:02	05:38	04:34	04:17	04:59	06:04	07:10	07:16	08:25	09:01
	16:28	17:41	18:44	20:53	21:55	22:22	21:46	20:31	19:05	16:44	15:42	15:34
28	08:29	07:16	05:59	05:35	04:32	04:17	05:01	06:06	07:12	07:18	08:27	09:01
	16:30	17:43	18:46	20:55	21:56	22:21	21:44	20:28	19:02	16:41	15:41	15:34
29	08:27		06:56	05:32	04:31	04:18	05:03	06:08	07:14	07:21	08:29	09:01
	16:33		19:48	20:57	21:58	22:21	21:42	20:26	18:59	16:39	15:39	15:35
30	08:25		06:53	05:30	04:29	04:19	05:05	06:10	07:16	07:23	08:31	09:01
	16:35		19:51	20:59	22:00	22:21	21:40	20:23	18:56	16:37	15:38	15:37
31	08:23		06:50		04:28		05:07	06:13		07:25		09:01
	16:37		19:53		22:01		21:38	20:20		16:34		15:38
Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Cimzes iela 12 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (537)
 Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:28 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
2	09:00 15:40	08:19 16:42	07:11 17:48	06:45 19:57	05:25 21:04	04:25 22:04	04:21 22:20	05:11 21:33	06:17 20:15	07:21 18:51	07:30 16:29	08:35 15:36
3	09:00 15:42	08:17 16:44	07:08 17:50	06:42 19:59	05:23 21:06	04:24 22:06	04:21 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:37 15:35
4	08:59 15:43	08:15 16:47	07:05 17:53	06:39 20:02	05:20 21:08	04:23 22:07	04:22 22:18	05:15 21:29	06:21 20:09	07:25 18:45	07:34 16:25	08:38 15:34
5	08:59 15:45	08:13 16:49	07:03 17:55	06:37 20:04	05:18 21:10	04:22 22:08	04:24 22:18	05:17 21:26	06:23 20:06	07:27 18:42	07:37 16:23	08:40 15:33
6	08:58 15:46	08:10 16:52	07:00 17:57	06:34 20:06	05:16 21:12	04:21 22:10	04:25 22:17	05:19 21:24	06:25 20:04	07:29 18:39	07:39 16:20	08:42 15:32
7	08:58 15:48	08:08 16:54	06:57 17:59	06:31 20:08	05:13 21:15	04:20 22:11	04:26 22:16	05:21 21:22	06:27 20:01	07:31 18:37	07:41 16:18	08:43 15:32
8	08:57 15:49	08:06 16:56	06:55 18:02	06:28 20:10	05:11 21:17	04:19 22:12	04:27 22:15	05:23 21:19	06:30 19:58	07:34 18:34	07:44 16:16	08:45 15:31
9	08:56 15:51	08:04 16:59	06:52 18:04	06:25 20:13	05:09 21:19	04:18 22:13	04:28 22:14	05:26 21:17	06:32 19:55	07:36 18:31	07:46 16:14	08:46 15:31
10	08:55 15:53	08:01 17:01	06:49 18:06	06:23 20:15	05:06 21:21	04:18 22:14	04:30 22:13	05:28 21:15	06:34 19:52	07:38 18:28	07:48 16:12	08:48 15:30
11	08:54 15:55	07:59 17:04	06:46 18:09	06:20 20:17	05:04 21:23	04:17 22:15	04:31 22:12	05:30 21:12	06:36 19:50	07:40 18:26	07:51 16:10	08:49 15:30
12	08:53 15:57	07:57 17:06	06:44 18:11	06:17 20:19	05:02 21:25	04:17 22:16	04:33 22:10	05:32 21:10	06:38 19:47	07:42 18:23	07:53 16:08	08:50 15:29
13	08:52 15:58	07:54 17:08	06:41 18:13	06:14 20:22	05:00 21:27	04:16 22:17	04:34 22:09	05:34 21:07	06:40 19:44	07:44 18:20	07:55 16:05	08:51 15:29
14	08:51 16:00	07:52 17:11	06:38 18:15	06:12 20:24	04:58 21:29	04:16 22:18	04:36 22:08	05:36 21:05	06:42 19:41	07:47 18:18	07:57 16:04	08:53 15:29
15	08:50 16:02	07:49 17:13	06:35 18:17	06:09 20:26	04:56 21:32	04:15 22:19	04:37 22:06	05:38 21:02	06:44 19:38	07:49 18:15	08:00 16:02	08:54 15:29
16	08:48 16:04	07:47 17:15	06:32 18:20	06:06 20:28	04:54 21:34	04:15 22:19	04:39 22:05	05:41 21:00	06:46 19:35	07:51 18:12	08:02 16:00	08:55 15:29
17	08:47 16:06	07:44 17:18	06:30 18:22	06:04 20:30	04:52 21:36	04:15 22:20	04:40 22:03	05:43 20:57	06:49 19:33	07:53 18:10	08:04 15:58	08:56 15:29
18	08:46 16:08	07:42 17:20	06:27 18:24	06:01 20:33	04:50 21:38	04:15 22:20	04:42 22:02	05:45 20:55	06:51 19:30	07:56 18:07	08:06 15:56	08:56 15:29
19	08:44 16:10	07:39 17:22	06:24 18:26	05:58 20:35	04:48 21:40	04:15 22:21	04:44 22:00	05:47 20:52	06:53 19:27	07:58 18:04	08:09 15:54	08:57 15:29
20	08:43 16:13	07:37 17:25	06:21 18:29	05:56 20:37	04:46 21:42	04:15 22:21	04:46 21:59	05:49 20:50	06:55 19:24	08:00 18:02	08:11 15:53	08:58 15:29
21	08:41 16:15	07:34 17:27	06:18 18:31	05:53 20:39	04:44 21:44	04:15 22:21	04:47 21:57	05:51 20:47	06:57 19:21	08:02 17:59	08:13 15:51	08:59 15:30
22	08:40 16:17	07:32 17:29	06:16 18:33	05:50 20:41	04:42 21:45	04:15 22:22	04:49 21:55	05:53 20:44	06:59 19:19	08:05 17:57	08:15 15:49	08:59 15:30
23	08:38 16:19	07:29 17:32	06:13 18:35	05:48 20:44	04:40 21:47	04:15 22:22	04:51 21:53	05:56 20:42	07:01 19:16	08:07 17:54	08:17 15:48	09:00 15:31
24	08:36 16:21	07:27 17:34	06:10 18:37	05:45 20:46	04:39 21:49	04:15 22:22	04:53 21:52	05:58 20:39	07:03 19:13	08:09 17:51	08:19 15:46	09:00 15:31
25	08:34 16:24	07:24 17:36	06:07 18:40	05:43 20:48	04:37 21:51	04:16 22:22	04:55 21:50	06:00 20:36	07:06 19:10	07:11 16:49	08:21 15:45	09:00 15:32
26	08:33 16:26	07:21 17:39	06:04 18:42	05:40 20:50	04:35 21:53	04:16 22:22	04:57 21:48	06:02 20:34	07:08 19:07	07:14 16:46	08:23 15:43	09:01 15:33
27	08:31 16:28	07:19 17:41	06:02 18:44	05:38 20:53	04:34 21:55	04:17 22:22	04:59 21:46	06:04 20:31	07:10 19:05	07:16 16:44	08:25 15:42	09:01 15:34
28	08:29 16:30	07:16 17:43	05:59 18:46	05:35 20:55	04:32 21:56	04:17 22:21	05:01 21:44	06:06 20:28	07:12 19:02	07:18 16:41	08:27 15:41	09:01 15:34
29	08:27 16:33		05:56 19:48	05:32 20:57	04:31 21:58	04:18 22:21	05:03 21:42	06:08 20:26	07:14 18:59	07:21 16:39	08:29 15:39	09:01 15:35
30	08:25 16:35		05:53 19:51	05:30 20:59	04:29 22:00	04:19 22:21	05:05 21:40	06:10 20:23	07:16 18:56	07:23 16:37	08:31 15:38	09:01 15:37
31	08:23 16:37		05:50 19:53		04:28 22:01		05:07 21:38	06:13 20:20		07:25 16:34		09:01 15:38
Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Cimzes iela 14 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (514)
 Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:28 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
2	09:00 15:40	08:19 16:42	07:11 17:48	06:45 19:57	05:25 21:04	04:25 22:04	04:21 22:20	05:11 21:33	06:17 20:15	07:21 18:51	07:30 16:29	08:35 15:36
3	09:00 15:42	08:17 16:44	07:08 17:50	06:42 19:59	05:23 21:06	04:24 22:06	04:21 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:37 15:35
4	08:59 15:43	08:15 16:47	07:05 17:53	06:39 20:02	05:20 21:08	04:23 22:07	04:22 22:18	05:15 21:29	06:21 20:09	07:25 18:45	07:34 16:25	08:38 15:34
5	08:59 15:45	08:13 16:49	07:03 17:55	06:37 20:04	05:18 21:10	04:22 22:08	04:24 22:18	05:17 21:26	06:23 20:06	07:27 18:42	07:37 16:23	08:40 15:33
6	08:58 15:46	08:10 16:52	07:00 17:57	06:34 20:06	05:16 21:12	04:21 22:10	04:25 22:17	05:19 21:24	06:25 20:04	07:29 18:39	07:39 16:20	08:42 15:32
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9	08:56 15:51	08:04 16:59	06:52 18:04	06:25 20:13	05:09 21:19	04:18 22:13	04:28 22:14	05:26 21:17	06:32 19:55	07:36 18:31	07:46 16:14	08:46 15:31
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31	08:23 16:37		05:50 19:53		04:28 22:01		05:07 21:38	06:13 20:20		07:25 16:34		09:01 15:38
Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Cimzes iela 16 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (543)
Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:28 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
2	09:00 15:41	08:19 16:42	07:11 17:48	06:45 19:57	05:25 21:04	04:25 22:04	04:21 22:20	05:11 21:33	06:17 20:15	07:21 18:51	07:30 16:29	08:35 15:36
3	09:00 15:42	08:17 16:44	07:08 17:50	06:42 19:59	05:23 21:06	04:24 22:06	04:21 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:37 15:35
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5	08:59 15:45	08:13 16:49	07:03 17:55	06:37 20:04	05:18 21:10	04:22 22:08	04:24 22:18	05:17 21:26	06:23 20:06	07:27 18:42	07:37 16:23	08:40 15:33
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31	08:23 16:37		05:50 19:53		04:28 22:01		05:07 21:37	06:13 20:20		07:25 16:34		09:01 15:38
Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Cimzes iela 18 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (533)
 Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:28 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
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25	08:34 16:24	07:24 17:36	06:07 18:40	05:43 20:48	04:37 21:51	04:16 22:22	04:55 21:50	06:00 20:36	07:06 19:10	07:11 16:49	08:21 15:45	09:00 15:32
26	08:33 16:26	07:21 17:39	06:04 18:42	05:40 20:50	04:35 21:53	04:16 22:22	04:57 21:48	06:02 20:34	07:08 19:07	07:14 16:46	08:23 15:43	09:01 15:33
27	08:31 16:28	07:19 17:41	06:02 18:44	05:38 20:53	04:34 21:55	04:17 22:22	04:59 21:46	06:04 20:31	07:10 19:05	07:16 16:44	08:25 15:42	09:01 15:34
28	08:29 16:30	07:16 17:43	05:59 18:46	05:35 20:55	04:32 21:56	04:17 22:21	05:01 21:44	06:06 20:28	07:12 19:02	07:18 16:41	08:27 15:41	09:01 15:35
29	08:27 16:33		05:56 19:48	05:32 20:57	04:31 21:58	04:18 22:21	05:03 21:42	06:08 20:26	07:14 18:59	07:21 16:39	08:29 15:39	09:01 15:35
30	08:25 16:35		05:53 19:51	05:30 20:59	04:29 22:00	04:19 22:21	05:05 21:40	06:10 20:23	07:16 18:56	07:23 16:37	08:31 15:38	09:01 15:37
31	08:23 16:37		05:50 19:53		04:28 22:01		05:07 21:37	06:13 20:20		07:25 16:34		09:01 15:38
Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Cimzes iela 19 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (518)
 Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:28 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
2	09:00 15:40	08:19 16:42	07:11 17:48	06:45 19:57	05:25 21:04	04:25 22:04	04:21 22:20	05:11 21:33	06:17 20:15	07:21 18:51	07:30 16:29	08:35 15:36
3	09:00 15:42	08:17 16:44	07:08 17:50	06:42 19:59	05:23 21:06	04:24 22:06	04:21 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:37 15:35
4	08:59 15:43	08:15 16:47	07:05 17:53	06:39 20:02	05:20 21:08	04:23 22:07	04:22 22:18	05:15 21:29	06:21 20:09	07:25 18:45	07:34 16:25	08:38 15:34
5	08:59 15:45	08:13 16:49	07:03 17:55	06:37 20:04	05:18 21:10	04:22 22:08	04:24 22:18	05:17 21:26	06:23 20:06	07:27 18:42	07:37 16:23	08:40 15:33
6	08:58 15:46	08:10 16:52	07:00 17:57	06:34 20:06	05:16 21:12	04:21 22:10	04:25 22:17	05:19 21:24	06:25 20:04	07:29 18:39	07:39 16:20	08:42 15:32
7	08:58 15:48	08:08 16:54	06:57 17:59	06:31 20:08	05:13 21:15	04:20 22:11	04:26 22:16	05:21 21:22	06:27 20:01	07:31 18:37	07:41 16:18	08:43 15:32
8	08:57 15:49	08:06 16:56	06:55 18:02	06:28 20:10	05:11 21:17	04:19 22:12	04:27 22:15	05:23 21:19	06:30 19:58	07:34 18:34	07:44 16:16	08:45 15:31
9	08:56 15:51	08:04 16:59	06:52 18:04	06:25 20:13	05:09 21:19	04:18 22:13	04:28 22:14	05:26 21:17	06:32 19:55	07:36 18:31	07:46 16:14	08:46 15:31
10	08:55 15:53	08:01 17:01	06:49 18:06	06:23 20:15	05:06 21:21	04:18 22:14	04:30 22:13	05:28 21:15	06:34 19:52	07:38 18:28	07:48 16:12	08:48 15:30
11	08:54 15:55	07:59 17:04	06:46 18:08	06:20 20:17	05:04 21:23	04:17 22:15	04:31 22:12	05:30 21:12	06:36 19:50	07:40 18:26	07:51 16:10	08:49 15:30
12	08:53 15:57	07:57 17:06	06:44 18:11	06:17 20:19	05:02 21:25	04:17 22:16	04:33 22:10	05:32 21:10	06:38 19:47	07:42 18:23	07:53 16:08	08:50 15:29
13	08:52 15:58	07:54 17:08	06:41 18:13	06:14 20:22	05:00 21:27	04:16 22:17	04:34 22:09	05:34 21:07	06:40 19:44	07:44 18:20	07:55 16:05	08:51 15:29
14	08:51 16:00	07:52 17:11	06:38 18:15	06:12 20:24	04:58 21:29	04:16 22:18	04:36 22:08	05:36 21:05	06:42 19:41	07:47 18:18	07:57 16:04	08:53 15:29
15	08:50 16:02	07:49 17:13	06:35 18:17	06:09 20:26	04:56 21:32	04:15 22:19	04:37 22:06	05:38 21:02	06:44 19:38	07:49 18:15	08:00 16:02	08:54 15:29
16	08:48 16:04	07:47 17:15	06:32 18:20	06:06 20:28	04:54 21:34	04:15 22:19	04:39 22:05	05:41 21:00	06:46 19:35	07:51 18:12	08:02 16:00	08:55 15:29
17	08:47 16:06	07:44 17:18	06:30 18:22	06:04 20:30	04:51 21:36	04:15 22:20	04:40 22:03	05:43 20:57	06:49 19:33	07:53 18:10	08:04 15:58	08:56 15:29
18	08:46 16:08	07:42 17:20	06:27 18:24	06:01 20:33	04:50 21:38	04:15 22:20	04:42 22:02	05:45 20:55	06:51 19:30	07:56 18:07	08:06 15:56	08:56 15:29
19	08:44 16:10	07:39 17:22	06:24 18:26	05:58 20:35	04:48 21:40	04:15 22:21	04:44 22:00	05:47 20:52	06:53 19:27	07:58 18:04	08:09 15:54	08:57 15:29
20	08:43 16:13	07:37 17:25	06:21 18:29	05:56 20:37	04:46 21:42	04:15 22:21	04:46 21:59	05:49 20:50	06:55 19:24	08:00 18:02	08:11 15:53	08:58 15:29
21	08:41 16:15	07:34 17:27	06:18 18:31	05:53 20:39	04:44 21:44	04:15 22:21	04:47 21:57	05:51 20:47	06:57 19:21	08:02 17:59	08:13 15:51	08:59 15:30
22	08:40 16:17	07:32 17:29	06:16 18:33	05:50 20:41	04:42 21:45	04:15 22:22	04:49 21:55	05:53 20:44	06:59 19:19	08:05 17:57	08:15 15:49	08:59 15:30
23	08:38 16:19	07:29 17:32	06:13 18:35	05:48 20:44	04:40 21:47	04:15 22:22	04:51 21:53	05:56 20:42	07:01 19:16	08:07 17:54	08:17 15:48	09:00 15:31
24	08:36 16:21	07:27 17:34	06:10 18:37	05:45 20:46	04:39 21:49	04:15 22:22	04:53 21:52	05:58 20:39	07:03 19:13	08:09 17:51	08:19 15:46	09:00 15:31
25	08:34 16:24	07:24 17:36	06:07 18:40	05:43 20:48	04:37 21:51	04:16 22:22	04:55 21:50	06:00 20:36	07:06 19:10	07:11 16:49	08:21 15:45	09:00 15:32
26	08:33 16:26	07:21 17:39	06:04 18:42	05:40 20:50	04:35 21:53	04:16 22:22	04:57 21:48	06:02 20:34	07:08 19:07	07:14 16:46	08:23 15:43	09:01 15:33
27	08:31 16:28	07:19 17:41	06:02 18:44	05:38 20:53	04:34 21:55	04:17 22:22	04:59 21:46	06:04 20:31	07:10 19:05	07:16 16:44	08:25 15:42	09:01 15:34
28	08:29 16:30	07:16 17:43	05:59 18:46	05:35 20:55	04:32 21:56	04:17 22:21	05:01 21:44	06:06 20:28	07:12 19:02	07:18 16:41	08:27 15:41	09:01 15:34
29	08:27 16:33		05:56 19:48	05:32 20:57	04:31 21:58	04:18 22:21	05:03 21:42	06:08 20:26	07:14 18:59	07:21 16:39	08:29 15:39	09:01 15:35
30	08:25 16:35		05:53 19:51	05:30 20:59	04:29 22:00	04:19 22:21	05:05 21:40	06:10 20:23	07:16 18:56	07:23 16:37	08:31 15:38	09:01 15:37
31	08:23 16:37		05:50 19:53		04:28 22:01		05:07 21:37	06:13 20:20		07:25 16:34		09:01 15:38
Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Cimzes iela 1A - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (767)
 Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:28 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
2	09:00 15:40	08:19 16:42	07:11 17:48	06:45 19:57	05:25 21:04	04:25 22:04	04:20 22:20	05:11 21:33	06:17 20:15	07:21 18:51	07:30 16:29	08:35 15:36
3	09:00 15:42	08:17 16:44	07:08 17:50	06:42 19:59	05:23 21:06	04:24 22:06	04:21 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:37 15:35
4	08:59 15:43	08:15 16:47	07:05 17:53	06:39 20:02	05:20 21:08	04:23 22:07	04:22 22:18	05:15 21:29	06:21 20:09	07:25 18:45	07:35 16:25	08:38 15:34
5	08:59 15:45	08:13 16:49	07:03 17:55	06:37 20:04	05:18 21:10	04:22 22:09	04:24 22:18	05:17 21:26	06:23 20:06	07:27 18:42	07:37 16:23	08:40 15:33
6	08:58 15:46	08:10 16:52	07:00 17:57	06:34 20:06	05:15 21:12	04:21 22:10	04:25 22:17	05:19 21:24	06:25 20:04	07:29 18:39	07:39 16:20	08:42 15:32
7	08:58 15:48	08:08 16:54	06:57 17:59	06:31 20:08	05:13 21:15	04:20 22:11	04:26 22:16	05:21 21:22	06:27 20:01	07:31 18:37	07:41 16:18	08:43 15:32
8	08:57 15:49	08:06 16:56	06:55 18:02	06:28 20:10	05:11 21:17	04:19 22:12	04:27 22:15	05:23 21:20	06:30 19:58	07:34 18:34	07:44 16:16	08:45 15:31
9	08:56 15:51	08:04 16:59	06:52 18:04	06:25 20:13	05:09 21:19	04:18 22:13	04:28 22:14	05:26 21:17	06:32 19:55	07:36 18:31	07:46 16:14	08:46 15:31
10	08:55 15:53	08:01 17:01	06:49 18:06	06:23 20:15	05:06 21:21	04:18 22:14	04:30 22:13	05:28 21:15	06:34 19:52	07:38 18:28	07:48 16:12	08:48 15:30
11	08:54 15:55	07:59 17:04	06:46 18:09	06:20 20:17	05:04 21:23	04:17 22:15	04:31 22:12	05:30 21:12	06:36 19:50	07:40 18:26	07:51 16:10	08:49 15:30
12	08:53 15:57	07:57 17:06	06:44 18:11	06:17 20:19	05:02 21:25	04:17 22:16	04:33 22:10	05:32 21:10	06:38 19:47	07:42 18:23	07:53 16:07	08:50 15:29
13	08:52 15:58	07:54 17:08	06:41 18:13	06:14 20:22	05:00 21:27	04:16 22:17	04:34 22:09	05:34 21:07	06:40 19:44	07:45 18:20	07:55 16:05	08:51 15:29
14	08:51 16:00	07:52 17:11	06:38 18:15	06:12 20:24	04:58 21:29	04:16 22:18	04:36 22:08	05:36 21:05	06:42 19:41	07:47 18:18	07:57 16:04	08:53 15:29
15	08:50 16:02	07:49 17:13	06:35 18:17	06:09 20:26	04:56 21:32	04:15 22:19	04:37 22:06	05:38 21:02	06:44 19:38	07:49 18:15	08:00 16:02	08:54 15:29
16	08:48 16:04	07:47 17:15	06:32 18:20	06:06 20:28	04:54 21:34	04:15 22:19	04:39 22:05	05:41 21:00	06:46 19:35	07:51 18:12	08:02 16:00	08:55 15:29
17	08:47 16:06	07:44 17:18	06:30 18:22	06:04 20:30	04:51 21:36	04:15 22:20	04:40 22:03	05:43 20:57	06:49 19:33	07:53 18:10	08:04 15:58	08:56 15:29
18	08:46 16:08	07:42 17:20	06:27 18:24	06:01 20:33	04:50 21:38	04:15 22:20	04:42 22:02	05:45 20:55	06:51 19:30	07:56 18:07	08:06 15:56	08:56 15:29
19	08:44 16:10	07:39 17:22	06:24 18:26	05:58 20:35	04:48 21:40	04:15 22:21	04:44 22:00	05:47 20:52	06:53 19:27	07:58 18:04	08:09 15:54	08:57 15:29
20	08:43 16:13	07:37 17:25	06:21 18:29	05:56 20:37	04:46 21:42	04:15 22:21	04:46 21:59	05:49 20:50	06:55 19:24	08:00 18:02	08:11 15:53	08:58 15:29
21	08:41 16:15	07:34 17:27	06:18 18:31	05:53 20:39	04:44 21:44	04:15 22:22	04:47 21:57	05:51 20:47	06:57 19:21	08:02 17:59	08:13 15:51	08:59 15:30
22	08:40 16:17	07:32 17:29	06:16 18:33	05:50 20:41	04:42 21:45	04:15 22:22	04:49 21:55	05:53 20:44	06:59 19:19	08:05 17:57	08:15 15:49	08:59 15:30
23	08:38 16:19	07:29 17:32	06:13 18:35	05:48 20:44	04:40 21:47	04:15 22:22	04:51 21:53	05:56 20:42	07:01 19:16	08:07 17:54	08:17 15:48	09:00 15:31
24	08:36 16:21	07:27 17:34	06:10 18:37	05:45 20:46	04:39 21:49	04:15 22:22	04:53 21:52	05:58 20:39	07:03 19:13	08:09 17:51	08:19 15:46	09:00 15:31
25	08:34 16:24	07:24 17:36	06:07 18:40	05:43 20:48	04:37 21:51	04:16 22:22	04:55 21:50	06:00 20:36	07:06 19:10	07:11 16:49	08:21 15:45	09:00 15:32
26	08:33 16:26	07:21 17:39	06:04 18:42	05:40 20:50	04:35 21:53	04:16 22:22	04:57 21:48	06:02 20:34	07:08 19:07	07:14 16:46	08:23 15:43	09:01 15:33
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28	08:29 16:30	07:16 17:43	05:59 18:46	05:35 20:55	04:32 21:56	04:17 22:21	05:01 21:44	06:06 20:28	07:12 19:02	07:18 16:41	08:27 15:41	09:01 15:34
29	08:27 16:33		05:56 19:48	05:32 20:57	04:31 21:58	04:18 22:21	05:03 21:42	06:08 20:26	07:14 18:59	07:21 16:39	08:29 15:39	09:01 15:35
30	08:25 16:35		05:53 19:51	05:30 20:59	04:29 22:00	04:19 22:21	05:05 21:40	06:10 20:23	07:16 18:56	07:23 16:37	08:31 15:38	09:01 15:37
31	08:23 16:37		05:50 19:53		04:28 22:01		05:07 21:38	06:13 20:20		07:25 16:34		09:01 15:38
Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Cimzes iela 2 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (729)
 Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:28 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
2	09:00 15:40	08:19 16:42	07:11 17:48	06:45 19:57	05:25 21:04	04:25 22:04	04:20 22:20	05:11 21:33	06:17 20:15	07:21 18:51	07:30 16:29	08:35 15:36
3	09:00 15:42	08:17 16:44	07:08 17:50	06:42 19:59	05:23 21:06	04:24 22:06	04:21 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:37 15:35
4	08:59 15:43	08:15 16:47	07:05 17:53	06:39 20:02	05:20 21:08	04:23 22:07	04:22 22:18	05:15 21:29	06:21 20:09	07:25 18:45	07:35 16:25	08:38 15:34
5	08:59 15:45	08:13 16:49	07:03 17:55	06:37 20:04	05:18 21:10	04:22 22:09	04:24 22:18	05:17 21:26	06:23 20:06	07:27 18:42	07:37 16:23	08:40 15:33
6	08:58 15:46	08:10 16:52	07:00 17:57	06:34 20:06	05:16 21:12	04:21 22:10	04:25 22:17	05:19 21:24	06:25 20:04	07:29 18:39	07:39 16:20	08:42 15:32
7	08:58 15:48	08:08 16:54	06:57 17:59	06:31 20:08	05:13 21:15	04:20 22:11	04:26 22:16	05:21 21:22	06:27 20:01	07:31 18:37	07:41 16:18	08:43 15:32
8	08:57 15:49	08:06 16:56	06:55 18:02	06:28 20:10	05:11 21:17	04:19 22:12	04:27 22:15	05:23 21:20	06:30 19:58	07:34 18:34	07:44 16:16	08:45 15:31
9	08:56 15:51	08:04 16:59	06:52 18:04	06:25 20:13	05:09 21:19	04:18 22:13	04:28 22:14	05:26 21:17	06:32 19:55	07:36 18:31	07:46 16:14	08:46 15:31
10	08:55 15:53	08:01 17:01	06:49 18:06	06:23 20:15	05:06 21:21	04:18 22:14	04:30 22:13	05:28 21:15	06:34 19:52	07:38 18:28	07:48 16:12	08:48 15:30
11	08:54 15:55	07:59 17:04	06:46 18:09	06:20 20:17	05:04 21:23	04:17 22:15	04:31 22:12	05:30 21:12	06:36 19:50	07:40 18:26	07:51 16:10	08:49 15:30
12	08:53 15:57	07:57 17:06	06:44 18:11	06:17 20:19	05:02 21:25	04:17 22:16	04:33 22:10	05:32 21:10	06:38 19:47	07:42 18:23	07:53 16:08	08:50 15:29
13	08:52 15:58	07:54 17:08	06:41 18:13	06:15 20:22	05:00 21:27	04:16 22:17	04:34 22:09	05:34 21:07	06:40 19:44	07:45 18:20	07:55 16:05	08:51 15:29
14	08:51 16:00	07:52 17:11	06:38 18:15	06:12 20:24	04:58 21:29	04:16 22:18	04:36 22:08	05:36 21:05	06:42 19:41	07:47 18:18	07:57 16:04	08:53 15:29
15	08:50 16:02	07:49 17:13	06:35 18:17	06:09 20:26	04:56 21:32	04:15 22:19	04:37 22:06	05:38 21:02	06:44 19:38	07:49 18:15	08:00 16:02	08:54 15:29
16	08:48 16:04	07:47 17:15	06:32 18:20	06:06 20:28	04:54 21:34	04:15 22:19	04:39 22:05	05:41 21:00	06:46 19:35	07:51 18:12	08:02 16:00	08:55 15:29
17	08:47 16:06	07:45 17:18	06:30 18:22	06:04 20:30	04:51 21:36	04:15 22:20	04:40 22:03	05:43 20:57	06:49 19:33	07:53 18:10	08:04 15:58	08:56 15:29
18	08:46 16:08	07:42 17:20	06:27 18:24	06:01 20:33	04:50 21:38	04:15 22:20	04:42 22:02	05:45 20:55	06:51 19:30	07:56 18:07	08:06 15:56	08:56 15:29
19	08:44 16:10	07:39 17:22	06:24 18:26	05:58 20:35	04:48 21:40	04:15 22:21	04:44 22:00	05:47 20:52	06:53 19:27	07:58 18:04	08:09 15:54	08:57 15:29
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21	08:41 16:15	07:34 17:27	06:18 18:31	05:53 20:39	04:44 21:44	04:15 22:22	04:47 21:57	05:51 20:47	06:57 19:21	08:02 17:59	08:13 15:51	08:59 15:30
22	08:40 16:17	07:32 17:30	06:16 18:33	05:50 20:41	04:42 21:45	04:15 22:22	04:49 21:55	05:53 20:44	06:59 19:19	08:05 17:57	08:15 15:49	08:59 15:30
23	08:38 16:19	07:29 17:32	06:13 18:35	05:48 20:44	04:40 21:47	04:15 22:22	04:51 21:53	05:56 20:42	07:01 19:16	08:07 17:54	08:17 15:48	09:00 15:31
24	08:36 16:21	07:27 17:34	06:10 18:37	05:45 20:46	04:39 21:49	04:15 22:22	04:53 21:52	05:58 20:39	07:03 19:13	08:09 17:51	08:19 15:46	09:00 15:31
25	08:34 16:24	07:24 17:36	06:07 18:40	05:43 20:48	04:37 21:51	04:16 22:22	04:55 21:50	06:00 20:36	07:06 19:10	07:11 16:49	08:21 15:45	09:00 15:32
26	08:33 16:26	07:21 17:39	06:04 18:42	05:40 20:50	04:35 21:53	04:16 22:22	04:57 21:48	06:02 20:34	07:08 19:07	07:14 16:46	08:23 15:43	09:01 15:33
27	08:31 16:28	07:19 17:41	06:02 18:44	05:38 20:53	04:34 21:55	04:17 22:22	04:59 21:46	06:04 20:31	07:10 19:05	07:16 16:44	08:25 15:42	09:01 15:34
28	08:29 16:30	07:16 17:43	05:59 18:46	05:35 20:55	04:32 21:56	04:17 22:21	05:01 21:44	06:06 20:28	07:12 19:02	07:18 16:41	08:27 15:41	09:01 15:34
29	08:27 16:33		06:56 19:48	05:32 20:57	04:31 21:58	04:18 22:21	05:03 21:42	06:08 20:26	07:14 18:59	07:21 16:39	08:29 15:39	09:01 15:35
30	08:25 16:35		06:53 19:51	05:30 20:59	04:29 22:00	04:19 22:21	05:05 21:40	06:10 20:23	07:16 18:56	07:23 16:37	08:31 15:38	09:01 15:37
31	08:23 16:37		06:50 19:53		04:28 22:01		05:07 21:38	06:13 20:20		07:25 16:34		09:01 15:38
Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Cimzes iela 20 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (559)
 Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:28 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
2	09:00 15:41	08:19 16:42	07:11 17:48	06:45 19:57	05:25 21:04	04:25 22:04	04:21 22:20	05:11 21:33	06:17 20:15	07:21 18:51	07:30 16:29	08:35 15:36
3	09:00 15:42	08:17 16:44	07:08 17:50	06:42 19:59	05:23 21:06	04:24 22:06	04:21 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:37 15:35
4	08:59 15:43	08:15 16:47	07:05 17:53	06:39 20:02	05:20 21:08	04:23 22:07	04:22 22:18	05:15 21:29	06:21 20:09	07:25 18:45	07:34 16:25	08:38 15:34
5	08:59 15:45	08:13 16:49	07:03 17:55	06:37 20:04	05:18 21:10	04:22 22:08	04:24 22:18	05:17 21:26	06:23 20:06	07:27 18:42	07:37 16:23	08:40 15:33
6	08:58 15:46	08:10 16:52	07:00 17:57	06:34 20:06	05:16 21:12	04:21 22:10	04:25 22:17	05:19 21:24	06:25 20:04	07:29 18:39	07:39 16:20	08:42 15:32
7	08:58 15:48	08:08 16:54	06:57 17:59	06:31 20:08	05:13 21:15	04:20 22:11	04:26 22:16	05:21 21:22	06:27 20:01	07:31 18:37	07:41 16:18	08:43 15:32
8	08:57 15:49	08:06 16:56	06:55 18:02	06:28 20:10	05:11 21:17	04:19 22:12	04:27 22:15	05:23 21:19	06:30 19:58	07:34 18:34	07:44 16:16	08:45 15:31
9	08:56 15:51	08:04 16:59	06:52 18:04	06:25 20:13	05:09 21:19	04:18 22:13	04:28 22:14	05:26 21:17	06:32 19:55	07:36 18:31	07:46 16:14	08:46 15:31
10	08:55 15:53	08:01 17:01	06:49 18:06	06:23 20:15	05:06 21:21	04:18 22:14	04:30 22:13	05:28 21:15	06:34 19:52	07:38 18:28	07:48 16:12	08:48 15:30
11	08:54 15:55	07:59 17:04	06:46 18:09	06:20 20:17	05:04 21:23	04:17 22:15	04:31 22:12	05:30 21:12	06:36 19:50	07:40 18:26	07:51 16:10	08:49 15:30
12	08:53 15:57	07:57 17:06	06:44 18:11	06:17 20:19	05:02 21:25	04:17 22:16	04:33 22:10	05:32 21:10	06:38 19:47	07:42 18:23	07:53 16:08	08:50 15:29
13	08:52 15:58	07:54 17:08	06:41 18:13	06:14 20:22	05:00 21:27	04:16 22:17	04:34 22:09	05:34 21:07	06:40 19:44	07:44 18:20	07:55 16:05	08:51 15:29
14	08:51 16:00	07:52 17:11	06:38 18:15	06:12 20:24	04:58 21:29	04:16 22:18	04:36 22:08	05:36 21:05	06:42 19:41	07:47 18:18	07:57 16:04	08:53 15:29
15	08:50 16:02	07:49 17:13	06:35 18:17	06:09 20:26	04:56 21:32	04:15 22:19	04:37 22:06	05:38 21:02	06:44 19:38	07:49 18:15	08:00 16:02	08:54 15:29
16	08:48 16:04	07:47 17:15	06:32 18:20	06:06 20:28	04:54 21:34	04:15 22:19	04:39 22:05	05:41 21:00	06:46 19:35	07:51 18:12	08:02 16:00	08:55 15:29
17	08:47 16:06	07:44 17:18	06:30 18:22	06:04 20:30	04:52 21:36	04:15 22:20	04:40 22:03	05:43 20:57	06:49 19:33	07:53 18:10	08:04 15:58	08:56 15:29
18	08:46 16:08	07:42 17:20	06:27 18:24	06:01 20:33	04:50 21:38	04:15 22:20	04:42 22:02	05:45 20:55	06:51 19:30	07:56 18:07	08:06 15:56	08:56 15:29
19	08:44 16:10	07:39 17:22	06:24 18:26	05:58 20:35	04:48 21:40	04:15 22:21	04:44 22:00	05:47 20:52	06:53 19:27	07:58 18:04	08:09 15:54	08:57 15:29
20	08:43 16:13	07:37 17:25	06:21 18:29	05:56 20:37	04:46 21:42	04:15 22:21	04:46 21:59	05:49 20:50	06:55 19:24	08:00 18:02	08:11 15:53	08:58 15:29
21	08:41 16:15	07:34 17:27	06:18 18:31	05:53 20:39	04:44 21:44	04:15 22:21	04:47 21:57	05:51 20:47	06:57 19:21	08:02 17:59	08:13 15:51	08:59 15:30
22	08:40 16:17	07:32 17:29	06:16 18:33	05:50 20:41	04:42 21:45	04:15 22:22	04:49 21:55	05:53 20:44	06:59 19:19	08:05 17:57	08:15 15:49	08:59 15:30
23	08:38 16:19	07:29 17:32	06:13 18:35	05:48 20:44	04:40 21:47	04:15 22:22	04:51 21:53	05:56 20:42	07:01 19:16	08:07 17:54	08:17 15:48	09:00 15:31
24	08:36 16:21	07:27 17:34	06:10 18:37	05:45 20:46	04:39 21:49	04:15 22:22	04:53 21:52	05:58 20:39	07:03 19:13	08:09 17:51	08:19 15:46	09:00 15:31
25	08:34 16:24	07:24 17:36	06:07 18:40	05:43 20:48	04:37 21:51	04:16 22:22	04:55 21:50	06:00 20:36	07:06 19:10	07:11 16:49	08:21 15:45	09:00 15:32
26	08:33 16:26	07:21 17:39	06:04 18:42	05:40 20:50	04:35 21:53	04:16 22:22	04:57 21:48	06:02 20:34	07:08 19:07	07:14 16:46	08:23 15:43	09:01 15:33
27	08:31 16:28	07:19 17:41	06:02 18:44	05:38 20:53	04:34 21:55	04:17 22:22	04:59 21:46	06:04 20:31	07:10 19:05	07:16 16:44	08:25 15:42	09:01 15:34
28	08:29 16:30	07:16 17:43	05:59 18:46	05:35 20:55	04:32 21:56	04:17 22:21	05:01 21:44	06:06 20:28	07:12 19:02	07:18 16:41	08:27 15:41	09:01 15:35
29	08:27 16:33		05:56 19:48	05:32 20:57	04:31 21:58	04:18 22:21	05:03 21:42	06:08 20:26	07:14 18:59	07:21 16:39	08:29 15:39	09:01 15:35
30	08:25 16:35		05:53 19:51	05:30 20:59	04:29 22:00	04:19 22:21	05:05 21:40	06:10 20:23	07:16 18:56	07:23 16:37	08:31 15:38	09:01 15:37
31	08:23 16:37		05:50 19:53		04:28 22:01		05:07 21:37	06:13 20:20		07:25 16:34		09:01 15:38
Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Cimzes iela 21 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (517)
 Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01	08:21	07:13	06:48	05:28	04:27	04:20	05:09	06:15	07:18	07:28	08:33
	15:39	16:40	17:46	19:55	21:01	22:03	22:20	21:35	20:17	18:53	16:32	15:37
2	09:00	08:19	07:11	06:45	05:25	04:25	04:21	05:11	06:17	07:21	07:30	08:35
	15:40	16:42	17:48	19:57	21:04	22:04	22:20	21:33	20:15	18:51	16:29	15:36
3	09:00	08:17	07:08	06:42	05:23	04:24	04:21	05:13	06:19	07:23	07:32	08:37
	15:42	16:44	17:50	19:59	21:06	22:06	22:19	21:31	20:12	18:48	16:27	15:35
4	08:59	08:15	07:05	06:39	05:20	04:23	04:22	05:15	06:21	07:25	07:34	08:38
	15:43	16:47	17:53	20:02	21:08	22:07	22:18	21:29	20:09	18:45	16:25	15:34
5	08:59	08:13	07:03	06:37	05:18	04:22	04:24	05:17	06:23	07:27	07:37	08:40
	15:45	16:49	17:55	20:04	21:10	22:08	22:18	21:26	20:06	18:42	16:23	15:33
6	08:58	08:10	07:00	06:34	05:16	04:21	04:25	05:19	06:25	07:29	07:39	08:42
	15:46	16:52	17:57	20:06	21:12	22:10	22:17	21:24	20:04	18:39	16:20	15:32
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	15:48	16:54	17:59	20:08	21:15	22:11	22:16	21:22	20:01	18:37	16:18	15:32
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	15:51	16:59	18:04	20:13	21:19	22:13	22:14	21:17	19:55	18:31	16:14	15:31
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	15:53	17:01	18:06	20:15	21:21	22:14	22:13	21:15	19:52	18:28	16:12	15:30
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	15:55	17:04	18:08	20:17	21:23	22:15	22:12	21:12	19:50	18:26	16:10	15:30
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	15:57	17:06	18:11	20:19	21:25	22:16	22:10	21:10	19:47	18:23	16:08	15:29
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14	08:51	07:52	06:38	06:12	04:58	04:16	04:36	05:36	06:42	07:47	07:57	08:53
	16:00	17:11	18:15	20:24	21:29	22:18	22:08	21:05	19:41	18:18	16:04	15:29
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	16:02	17:13	18:17	20:26	21:32	22:19	22:06	21:02	19:38	18:15	16:02	15:29
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	16:04	17:15	18:20	20:28	21:34	22:19	22:05	21:00	19:35	18:12	16:00	15:29
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	16:06	17:18	18:22	20:30	21:36	22:20	22:03	20:57	19:33	18:10	15:58	15:29
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	16:08	17:20	18:24	20:33	21:38	22:20	22:02	20:55	19:30	18:07	15:56	15:29
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	16:10	17:22	18:26	20:35	21:40	22:21	22:00	20:52	19:27	18:04	15:54	15:29
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	16:13	17:25	18:29	20:37	21:42	22:21	21:59	20:50	19:24	18:02	15:53	15:29
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	16:15	17:27	18:31	20:39	21:44	22:21	21:57	20:47	19:21	17:59	15:51	15:30
22	08:40	07:32	06:16	05:50	04:42	04:15	04:49	05:53	06:59	08:05	08:15	08:59
	16:17	17:29	18:33	20:41	21:45	22:22	21:55	20:44	19:19	17:57	15:49	15:30
23	08:38	07:29	06:13	05:48	04:40	04:15	04:51	05:56	07:01	08:07	08:17	09:00
	16:19	17:32	18:35	20:44	21:47	22:22	21:53	20:42	19:16	17:54	15:48	15:31
24	08:36	07:27	06:10	05:45	04:39	04:15	04:53	05:58	07:03	08:09	08:19	09:00
	16:21	17:34	18:37	20:46	21:49	22:22	21:52	20:39	19:13	17:51	15:46	15:31
25	08:34	07:24	06:07	05:43	04:37	04:16	04:55	06:00	07:06	07:11	08:21	09:00
	16:24	17:36	18:40	20:48	21:51	22:22	21:50	20:36	19:10	16:49	15:45	15:32
26	08:33	07:21	06:04	05:40	04:35	04:16	04:57	06:02	07:08	07:14	08:23	09:01
	16:26	17:39	18:42	20:50	21:53	22:22	21:48	20:34	19:07	16:46	15:43	15:33
27	08:31	07:19	06:02	05:38	04:34	04:17	04:59	06:04	07:10	07:16	08:25	09:01
	16:28	17:41	18:44	20:53	21:55	22:22	21:46	20:31	19:05	16:44	15:42	15:34
28	08:29	07:16	05:59	05:35	04:32	04:17	05:01	06:06	07:12	07:18	08:27	09:01
	16:30	17:43	18:46	20:55	21:56	22:21	21:44	20:28	19:02	16:41	15:41	15:34
29	08:27		06:56	05:32	04:31	04:18	05:03	06:08	07:14	07:21	08:29	09:01
	16:33		19:48	20:57	21:58	22:21	21:42	20:26	18:59	16:39	15:39	15:35
30	08:25		06:53	05:30	04:29	04:19	05:05	06:10	07:16	07:23	08:31	09:01
	16:35		19:51	20:59	22:00	22:21	21:40	20:23	18:56	16:37	15:38	15:37
31	08:23		06:50		04:28		05:07	06:13		07:25		09:01
	16:37		19:53		22:01		21:37	20:20		16:34		15:38
Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Cimzes iela 21A - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (542)
Sunshine probability S (Average daily sunshine hours) []

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
0.80 1.82 4.75 6.09 9.67 10.05 8.16 7.72 5.94 2.93 0.63 0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:28 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
2	09:00 15:40	08:19 16:42	07:11 17:48	06:45 19:57	05:25 21:04	04:25 22:04	04:21 22:20	05:11 21:33	06:17 20:15	07:21 18:51	07:30 16:29	08:35 15:36
3	09:00 15:42	08:17 16:44	07:08 17:50	06:42 19:59	05:23 21:06	04:24 22:06	04:21 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:37 15:35
4	08:59 15:43	08:15 16:47	07:05 17:53	06:39 20:02	05:20 21:08	04:23 22:07	04:22 22:18	05:15 21:29	06:21 20:09	07:25 18:45	07:34 16:25	08:38 15:34
5	08:59 15:45	08:13 16:49	07:03 17:55	06:37 20:04	05:18 21:10	04:22 22:08	04:24 22:18	05:17 21:26	06:23 20:06	07:27 18:42	07:37 16:23	08:40 15:33
6	08:58 15:46	08:10 16:52	07:00 17:57	06:34 20:06	05:16 21:12	04:21 22:10	04:25 22:17	05:19 21:24	06:25 20:04	07:29 18:39	07:39 16:20	08:42 15:32
7	08:58 15:48	08:08 16:54	06:57 17:59	06:31 20:08	05:13 21:15	04:20 22:11	04:26 22:16	05:21 21:22	06:27 20:01	07:31 18:37	07:41 16:18	08:43 15:32
8	08:57 15:49	08:06 16:56	06:55 18:02	06:28 20:10	05:11 21:17	04:19 22:12	04:27 22:15	05:23 21:19	06:30 19:58	07:34 18:34	07:44 16:16	08:45 15:31
9	08:56 15:51	08:04 16:59	06:52 18:04	06:25 20:13	05:09 21:19	04:18 22:13	04:28 22:14	05:26 21:17	06:32 19:55	07:36 18:31	07:46 16:14	08:46 15:31
10	08:55 15:53	08:01 17:01	06:49 18:06	06:23 20:15	05:06 21:21	04:18 22:14	04:30 22:13	05:28 21:15	06:34 19:52	07:38 18:28	07:48 16:12	08:48 15:30
11	08:54 15:55	07:59 17:04	06:46 18:08	06:20 20:17	05:04 21:23	04:17 22:15	04:31 22:12	05:30 21:12	06:36 19:50	07:40 18:26	07:51 16:10	08:49 15:30
12	08:53 15:57	07:57 17:06	06:44 18:11	06:17 20:19	05:02 21:25	04:17 22:16	04:33 22:10	05:32 21:19	06:38 19:47	07:42 18:23	07:53 16:08	08:50 15:29
13	08:52 15:58	07:54 17:08	06:41 18:13	06:14 20:22	05:00 21:27	04:16 22:17	04:34 22:09	05:34 21:07	06:40 19:44	07:44 18:20	07:55 16:05	08:51 15:29
14	08:51 16:00	07:52 17:11	06:38 18:15	06:12 20:24	04:58 21:29	04:16 22:18	04:36 22:08	05:36 21:05	06:42 19:41	07:47 18:18	07:57 16:04	08:53 15:29
15	08:50 16:02	07:49 17:13	06:35 18:17	06:09 20:26	04:56 21:32	04:15 22:19	04:37 22:06	05:38 21:02	06:44 19:38	07:49 18:15	08:00 16:02	08:54 15:29
16	08:48 16:04	07:47 17:15	06:32 18:20	06:06 20:28	04:54 21:34	04:15 22:19	04:39 22:05	05:41 21:00	06:46 19:35	07:51 18:12	08:02 16:00	08:55 15:29
17	08:47 16:06	07:44 17:18	06:30 18:22	06:04 20:30	04:52 21:36	04:15 22:20	04:40 22:03	05:43 20:57	06:49 19:33	07:53 18:10	08:04 15:58	08:56 15:29
18	08:46 16:08	07:42 17:20	06:27 18:24	06:01 20:33	04:50 21:38	04:15 22:20	04:42 22:02	05:45 20:55	06:51 19:30	07:56 18:07	08:06 15:56	08:56 15:29
19	08:44 16:10	07:39 17:22	06:24 18:26	05:58 20:35	04:48 21:40	04:15 22:21	04:44 22:00	05:47 20:52	06:53 19:27	07:58 18:04	08:09 15:54	08:57 15:29
20	08:43 16:13	07:37 17:25	06:21 18:29	05:56 20:37	04:46 21:42	04:15 22:21	04:46 21:59	05:49 20:50	06:55 19:24	08:00 18:02	08:11 15:53	08:58 15:29
21	08:41 16:15	07:34 17:27	06:18 18:31	05:53 20:39	04:44 21:44	04:15 22:21	04:47 21:57	05:51 20:47	06:57 19:21	08:02 17:59	08:13 15:51	08:59 15:30
22	08:40 16:17	07:32 17:29	06:16 18:33	05:50 20:41	04:42 21:45	04:15 22:22	04:49 21:55	05:53 20:44	06:59 19:19	08:05 17:57	08:15 15:49	08:59 15:30
23	08:38 16:19	07:29 17:32	06:13 18:35	05:48 20:44	04:40 21:47	04:15 22:22	04:51 21:53	05:56 20:42	07:01 19:16	08:07 17:54	08:17 15:48	09:00 15:31
24	08:36 16:21	07:27 17:34	06:10 18:37	05:45 20:46	04:39 21:49	04:15 22:22	04:53 21:52	05:58 20:39	07:03 19:13	08:09 17:51	08:19 15:46	09:00 15:31
25	08:34 16:24	07:24 17:36	06:07 18:40	05:43 20:48	04:37 21:51	04:16 22:22	04:55 21:50	06:00 20:36	07:06 19:10	07:11 16:49	08:21 15:45	09:00 15:32
26	08:33 16:26	07:21 17:39	06:04 18:42	05:40 20:50	04:35 21:53	04:16 22:22	04:57 21:48	06:02 20:34	07:08 19:07	07:14 16:46	08:23 15:43	09:01 15:33
27	08:31 16:28	07:19 17:41	06:02 18:44	05:38 20:53	04:34 21:55	04:17 22:22	04:59 21:46	06:04 20:31	07:10 19:05	07:16 16:44	08:25 15:42	09:01 15:34
28	08:29 16:30	07:16 17:43	05:59 18:46	05:35 20:55	04:32 21:56	04:17 22:21	05:01 21:44	06:06 20:28	07:12 19:02	07:18 16:41	08:27 15:41	09:01 15:34
29	08:27 16:33		06:56 19:48	05:32 20:57	04:31 21:58	04:18 22:21	05:03 21:42	06:08 20:26	07:14 18:59	07:21 16:39	08:29 15:39	09:01 15:35
30	08:25 16:35		06:53 19:51	05:30 20:59	04:29 22:00	04:19 22:21	05:05 21:40	06:10 20:23	07:16 18:56	07:23 16:37	08:31 15:38	09:01 15:37
31	08:23 16:37		06:50 19:53		04:28 22:01		05:07 21:37	06:13 20:20		07:25 16:34		09:01 15:38
Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Last time (hh:mm) with flicker	(WTG causing flicker last time)
	Minutes with flicker		

Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Cimzes iela 22 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (592)
 Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01	08:21	07:13	06:48	05:28	04:27	04:20	05:09	06:15	07:18	07:28	08:33
	15:39	16:40	17:46	19:55	21:01	22:03	22:20	21:35	20:17	18:53	16:32	15:37
2	09:00	08:19	07:11	06:45	05:25	04:25	04:21	05:11	06:17	07:21	07:30	08:35
	15:41	16:42	17:48	19:57	21:04	22:04	22:20	21:33	20:15	18:51	16:29	15:36
3	09:00	08:17	07:08	06:42	05:23	04:24	04:21	05:13	06:19	07:23	07:32	08:37
	15:42	16:44	17:50	19:59	21:06	22:06	22:19	21:31	20:12	18:48	16:27	15:35
4	08:59	08:15	07:05	06:39	05:20	04:23	04:22	05:15	06:21	07:25	07:34	08:38
	15:43	16:47	17:53	20:02	21:08	22:07	22:18	21:29	20:09	18:45	16:25	15:34
5	08:59	08:13	07:03	06:37	05:18	04:22	04:24	05:17	06:23	07:27	07:37	08:40
	15:45	16:49	17:55	20:04	21:10	22:08	22:18	21:26	20:06	18:42	16:23	15:33
6	08:58	08:10	07:00	06:34	05:16	04:21	04:25	05:19	06:25	07:29	07:39	08:42
	15:46	16:52	17:57	20:06	21:12	22:10	22:17	21:24	20:04	18:39	16:20	15:32
7	08:58	08:08	06:57	06:31	05:13	04:20	04:26	05:21	06:27	07:31	07:41	08:43
	15:48	16:54	17:59	20:08	21:15	22:11	22:16	21:22	20:01	18:37	16:18	15:32
8	08:57	08:06	06:55	06:28	05:11	04:19	04:27	05:23	06:30	07:34	07:44	08:45
	15:49	16:56	18:02	20:10	21:17	22:12	22:15	21:19	19:58	18:34	16:16	15:31
9	08:56	08:04	06:52	06:25	05:09	04:18	04:28	05:26	06:32	07:36	07:46	08:46
	15:51	16:59	18:04	20:13	21:19	22:13	22:14	21:17	19:55	18:31	16:14	15:31
10	08:55	08:01	06:49	06:23	05:06	04:18	04:30	05:28	06:34	07:38	07:48	08:48
	15:53	17:01	18:06	20:15	21:21	22:14	22:13	21:15	19:52	18:28	16:12	15:30
11	08:54	07:59	06:46	06:20	05:04	04:17	04:31	05:30	06:36	07:40	07:51	08:49
	15:55	17:04	18:09	20:17	21:23	22:15	22:12	21:12	19:50	18:26	16:10	15:30
12	08:53	07:57	06:44	06:17	05:02	04:17	04:33	05:32	06:38	07:42	07:53	08:50
	15:57	17:06	18:11	20:19	21:25	22:16	22:10	21:10	19:47	18:23	16:08	15:29
13	08:52	07:54	06:41	06:14	05:00	04:16	04:34	05:34	06:40	07:44	07:55	08:51
	15:58	17:08	18:13	20:22	21:27	22:17	22:09	21:07	19:44	18:20	16:05	15:29
14	08:51	07:52	06:38	06:12	04:58	04:16	04:36	05:36	06:42	07:47	07:57	08:53
	16:00	17:11	18:15	20:24	21:29	22:18	22:08	21:05	19:41	18:18	16:04	15:29
15	08:50	07:49	06:35	06:09	04:56	04:15	04:37	05:38	06:44	07:49	08:00	08:54
	16:02	17:13	18:17	20:26	21:32	22:19	22:06	21:02	19:38	18:15	16:02	15:29
16	08:48	07:47	06:32	06:06	04:54	04:15	04:39	05:41	06:46	07:51	08:02	08:55
	16:04	17:15	18:20	20:28	21:34	22:19	22:05	21:00	19:35	18:12	16:00	15:29
17	08:47	07:44	06:30	06:04	04:52	04:15	04:40	05:43	06:49	07:53	08:04	08:56
	16:06	17:18	18:22	20:30	21:36	22:20	22:03	20:57	19:33	18:10	15:58	15:29
18	08:46	07:42	06:27	06:01	04:50	04:15	04:42	05:45	06:51	07:56	08:06	08:56
	16:08	17:20	18:24	20:33	21:38	22:20	22:02	20:55	19:30	18:07	15:56	15:29
19	08:44	07:39	06:24	05:58	04:48	04:15	04:44	05:47	06:53	07:58	08:09	08:57
	16:10	17:22	18:26	20:35	21:40	22:21	22:00	20:52	19:27	18:04	15:54	15:29
20	08:43	07:37	06:21	05:56	04:46	04:15	04:46	05:49	06:55	08:00	08:11	08:58
	16:13	17:25	18:29	20:37	21:42	22:21	21:59	20:50	19:24	18:02	15:53	15:29
21	08:41	07:34	06:18	05:53	04:44	04:15	04:47	05:51	06:57	08:02	08:13	08:59
	16:15	17:27	18:31	20:39	21:44	22:21	21:57	20:47	19:21	17:59	15:51	15:30
22	08:40	07:32	06:16	05:50	04:42	04:15	04:49	05:53	06:59	08:05	08:15	08:59
	16:17	17:30	18:33	20:41	21:45	22:22	21:55	20:44	19:19	17:57	15:49	15:30
23	08:38	07:29	06:13	05:48	04:40	04:15	04:51	05:56	07:01	08:07	08:17	09:00
	16:19	17:32	18:35	20:44	21:47	22:22	21:53	20:42	19:16	17:54	15:48	15:31
24	08:36	07:27	06:10	05:45	04:39	04:15	04:53	05:58	07:03	08:09	08:19	09:00
	16:21	17:34	18:37	20:46	21:49	22:22	21:52	20:39	19:13	17:51	15:46	15:31
25	08:34	07:24	06:07	05:43	04:37	04:16	04:55	06:00	07:06	07:11	08:21	09:00
	16:24	17:36	18:40	20:48	21:51	22:22	21:50	20:36	19:10	16:49	15:45	15:32
26	08:33	07:21	06:04	05:40	04:35	04:16	04:57	06:02	07:08	07:14	08:23	09:01
	16:26	17:39	18:42	20:50	21:53	22:22	21:48	20:34	19:07	16:46	15:43	15:33
27	08:31	07:19	06:02	05:38	04:34	04:17	04:59	06:04	07:10	07:16	08:25	09:01
	16:28	17:41	18:44	20:53	21:55	22:22	21:46	20:31	19:05	16:44	15:42	15:34
28	08:29	07:16	05:59	05:35	04:32	04:17	05:01	06:06	07:12	07:18	08:27	09:01
	16:30	17:43	18:46	20:55	21:56	22:21	21:44	20:28	19:02	16:41	15:41	15:35
29	08:27		06:56	05:32	04:31	04:18	05:03	06:08	07:14	07:21	08:29	09:01
	16:33		19:48	20:57	21:58	22:21	21:42	20:26	18:59	16:39	15:39	15:35
30	08:25		06:53	05:30	04:29	04:19	05:05	06:10	07:16	07:23	08:31	09:01
	16:35		19:51	20:59	22:00	22:21	21:40	20:23	18:56	16:37	15:38	15:37
31	08:23		06:50		04:28		05:07	06:13		07:25		09:01
	16:37		19:53		22:01		21:37	20:20		16:34		15:38
Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Cimzes iela 23 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (550)
Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:28 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
2	09:00 15:40	08:19 16:42	07:11 17:48	06:45 19:57	05:25 21:04	04:25 22:04	04:21 22:20	05:11 21:33	06:17 20:15	07:21 18:51	07:30 16:29	08:35 15:36
3	09:00 15:42	08:17 16:44	07:08 17:50	06:42 19:59	05:23 21:06	04:24 22:06	04:21 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:37 15:35
4	08:59 15:43	08:15 16:47	07:05 17:53	06:39 20:02	05:20 21:08	04:23 22:07	04:22 22:18	05:15 21:29	06:21 20:09	07:25 18:45	07:34 16:25	08:38 15:34
5	08:59 15:45	08:13 16:49	07:03 17:55	06:37 20:04	05:18 21:10	04:22 22:08	04:24 22:18	05:17 21:26	06:23 20:06	07:27 18:42	07:37 16:23	08:40 15:33
6	08:58 15:46	08:10 16:52	07:00 17:57	06:34 20:06	05:16 21:12	04:21 22:10	04:25 22:17	05:19 21:24	06:25 20:04	07:29 18:39	07:39 16:20	08:42 15:32
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9	08:56 15:51	08:04 16:59	06:52 18:04	06:25 20:13	05:09 21:19	04:18 22:13	04:28 22:14	05:26 21:17	06:32 19:55	07:36 18:31	07:46 16:14	08:46 15:31
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31	08:23 16:37		06:50 19:53		04:28 22:01		05:07 21:37	06:13 20:20		07:25 16:34		09:01 15:38
Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Cimzes iela 24 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (591)
 Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:28 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
2	09:00 15:41	08:19 16:42	07:11 17:48	06:45 19:57	05:25 21:04	04:25 22:04	04:21 22:20	05:11 21:33	06:17 20:15	07:21 18:51	07:30 16:29	08:35 15:36
3	09:00 15:42	08:17 16:44	07:08 17:50	06:42 19:59	05:23 21:06	04:24 22:06	04:21 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:37 15:35
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5	08:59 15:45	08:13 16:49	07:03 17:55	06:37 20:04	05:18 21:10	04:22 22:08	04:24 22:18	05:17 21:26	06:23 20:06	07:27 18:42	07:37 16:23	08:40 15:33
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19	08:44 16:10	07:39 17:22	06:24 18:26	05:58 20:35	04:48 21:40	04:15 22:21	04:44 22:00	05:47 20:52	06:53 19:27	07:58 18:04	08:09 15:54	08:57 15:29
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31	08:23 16:37		05:50 19:53		04:28 22:01		05:07 21:37	06:13 20:20		07:25 16:34		09:01 15:38
Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Cimzes iela 25 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (520)
 Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:28 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
2	09:00 15:41	08:19 16:42	07:11 17:48	06:45 19:57	05:25 21:04	04:25 22:04	04:21 22:20	05:11 21:33	06:17 20:15	07:21 18:51	07:30 16:29	08:35 15:36
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23	08:38 16:19	07:29 17:32	06:13 18:35	05:48 20:44	04:40 21:47	04:15 22:22	04:51 21:53	05:56 20:42	07:01 19:16	08:07 17:54	08:17 15:48	09:00 15:31
24	08:36 16:21	07:27 17:34	06:10 18:37	05:45 20:46	04:39 21:49	04:15 22:22	04:53 21:52	05:58 20:39	07:03 19:13	08:09 17:51	08:19 15:46	09:00 15:31
25	08:34 16:24	07:24 17:36	06:07 18:40	05:43 20:48	04:37 21:51	04:16 22:22	04:55 21:50	06:00 20:36	07:06 19:10	07:11 16:49	08:21 15:45	09:00 15:32
26	08:33 16:26	07:21 17:39	06:04 18:42	05:40 20:50	04:35 21:53	04:16 22:22	04:57 21:48	06:02 20:34	07:08 19:07	07:14 16:46	08:23 15:43	09:01 15:33
27	08:31 16:28	07:19 17:41	06:02 18:44	05:38 20:53	04:34 21:55	04:17 22:22	04:59 21:46	06:04 20:31	07:10 19:05	07:16 16:44	08:25 15:42	09:01 15:34
28	08:29 16:30	07:16 17:43	05:59 18:46	05:35 20:55	04:32 21:56	04:17 22:21	05:01 21:44	06:06 20:28	07:12 19:02	07:18 16:41	08:27 15:41	09:01 15:35
29	08:27 16:33		05:56 19:48	05:32 20:57	04:31 21:58	04:18 22:21	05:03 21:42	06:08 20:26	07:14 18:59	07:21 16:39	08:29 15:39	09:01 15:35
30	08:25 16:35		05:53 19:51	05:30 20:59	04:29 22:00	04:19 22:21	05:05 21:40	06:10 20:23	07:16 18:56	07:23 16:37	08:31 15:38	09:01 15:37
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Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
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Table layout: For each day in each month the following matrix apply

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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Cimzes iela 26 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (554)
 Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:28 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
2	09:00 15:41	08:19 16:42	07:11 17:48	06:45 19:57	05:25 21:04	04:25 22:04	04:21 22:20	05:11 21:33	06:17 20:15	07:21 18:51	07:30 16:29	08:35 15:36
3	09:00 15:42	08:17 16:44	07:08 17:50	06:42 19:59	05:23 21:06	04:24 22:06	04:21 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:37 15:35
4	08:59 15:43	08:15 16:47	07:05 17:53	06:39 20:02	05:20 21:08	04:23 22:07	04:22 22:18	05:15 21:29	06:21 20:09	07:25 18:45	07:34 16:25	08:38 15:34
5	08:59 15:45	08:13 16:49	07:03 17:55	06:37 20:04	05:18 21:10	04:22 22:08	04:24 22:18	05:17 21:26	06:23 20:06	07:27 18:42	07:37 16:23	08:40 15:33
6	08:58 15:46	08:10 16:52	07:00 17:57	06:34 20:06	05:16 21:12	04:21 22:10	04:25 22:17	05:19 21:24	06:25 20:04	07:29 18:39	07:39 16:20	08:42 15:32
7	08:58 15:48	08:08 16:54	06:57 17:59	06:31 20:08	05:13 21:15	04:20 22:11	04:26 22:16	05:21 21:22	06:27 20:01	07:31 18:37	07:41 16:18	08:43 15:32
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10	08:55 15:53	08:01 17:01	06:49 18:06	06:23 20:15	05:06 21:21	04:18 22:14	04:30 22:13	05:28 21:15	06:34 19:52	07:38 18:28	07:48 16:12	08:48 15:30
11	08:54 15:55	07:59 17:04	06:46 18:09	06:20 20:17	05:04 21:23	04:17 22:15	04:31 22:12	05:30 21:12	06:36 19:50	07:40 18:26	07:51 16:10	08:49 15:30
12	08:53 15:57	07:57 17:06	06:44 18:11	06:17 20:19	05:02 21:25	04:17 22:16	04:33 22:10	05:32 21:19	06:38 19:47	07:42 18:23	07:53 16:08	08:50 15:29
13	08:52 15:58	07:54 17:08	06:41 18:13	06:15 20:22	05:00 21:27	04:16 22:17	04:34 22:09	05:34 21:07	06:40 19:44	07:44 18:20	07:55 16:06	08:51 15:29
14	08:51 16:00	07:52 17:11	06:38 18:15	06:12 20:24	04:58 21:29	04:16 22:18	04:36 22:08	05:36 21:05	06:42 19:41	07:47 18:18	07:57 16:04	08:53 15:29
15	08:50 16:02	07:49 17:13	06:35 18:17	06:09 20:26	04:56 21:31	04:15 22:19	04:37 22:06	05:38 21:02	06:44 19:38	07:49 18:15	08:00 16:02	08:54 15:29
16	08:48 16:04	07:47 17:15	06:32 18:20	06:06 20:28	04:54 21:34	04:15 22:19	04:39 22:05	05:41 21:00	06:46 19:35	07:51 18:12	08:02 16:00	08:55 15:29
17	08:47 16:06	07:44 17:18	06:30 18:22	06:04 20:30	04:52 21:36	04:15 22:20	04:41 22:03	05:43 20:57	06:49 19:33	07:53 18:10	08:04 15:58	08:56 15:29
18	08:46 16:08	07:42 17:20	06:27 18:24	06:01 20:33	04:50 21:38	04:15 22:20	04:42 22:02	05:45 20:55	06:51 19:30	07:56 18:07	08:06 15:56	08:56 15:29
19	08:44 16:11	07:39 17:22	06:24 18:26	05:58 20:35	04:48 21:40	04:15 22:21	04:44 22:00	05:47 20:52	06:53 19:27	07:58 18:04	08:09 15:54	08:57 15:29
20	08:43 16:13	07:37 17:25	06:21 18:29	05:56 20:37	04:46 21:42	04:15 22:21	04:46 21:59	05:49 20:50	06:55 19:24	08:00 18:02	08:11 15:53	08:58 15:29
21	08:41 16:15	07:34 17:27	06:18 18:31	05:53 20:39	04:44 21:44	04:15 22:21	04:48 21:57	05:51 20:47	06:57 19:21	08:02 17:59	08:13 15:51	08:59 15:30
22	08:40 16:17	07:32 17:30	06:16 18:33	05:50 20:41	04:42 21:45	04:15 22:22	04:49 21:55	05:53 20:44	06:59 19:19	08:05 17:57	08:15 15:49	08:59 15:30
23	08:38 16:19	07:29 17:32	06:13 18:35	05:48 20:44	04:40 21:47	04:15 22:22	04:51 21:53	05:56 20:42	07:01 19:16	08:07 17:54	08:17 15:48	09:00 15:31
24	08:36 16:21	07:27 17:34	06:10 18:37	05:45 20:46	04:39 21:49	04:15 22:22	04:53 21:52	05:58 20:39	07:03 19:13	08:09 17:51	08:19 15:46	09:00 15:31
25	08:34 16:24	07:24 17:36	06:07 18:40	05:43 20:48	04:37 21:51	04:16 22:22	04:55 21:50	06:00 20:36	07:06 19:10	07:11 16:49	08:21 15:45	09:00 15:32
26	08:33 16:26	07:21 17:39	06:04 18:42	05:40 20:50	04:35 21:53	04:16 22:22	04:57 21:48	06:02 20:34	07:08 19:07	07:14 16:46	08:23 15:43	09:01 15:33
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28	08:29 16:30	07:16 17:43	05:59 18:46	05:35 20:55	04:32 21:56	04:17 22:21	05:01 21:44	06:06 20:28	07:12 19:02	07:18 16:41	08:27 15:41	09:01 15:35
29	08:27 16:33		05:56 19:48	05:32 20:57	04:31 21:58	04:18 22:21	05:03 21:42	06:08 20:26	07:14 18:59	07:21 16:39	08:29 15:39	09:01 15:36
30	08:25 16:35		05:53 19:51	05:30 20:59	04:29 22:00	04:19 22:21	05:05 21:40	06:10 20:23	07:16 18:56	07:23 16:37	08:31 15:38	09:01 15:37
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Total, worst case												
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Cimzes iela 27 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (558)
Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
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No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:28 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
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3	09:00 15:42	08:17 16:44	07:08 17:50	06:42 19:59	05:23 21:06	04:24 22:06	04:21 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:37 15:35
4	08:59 15:43	08:15 16:47	07:05 17:53	06:39 20:02	05:20 21:08	04:23 22:07	04:22 22:18	05:15 21:29	06:21 20:09	07:25 18:45	07:34 16:25	08:38 15:34
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7	08:58 15:48	08:08 16:54	06:57 17:59	06:31 20:08	05:13 21:15	04:20 22:11	04:26 22:16	05:21 21:22	06:27 20:01	07:31 18:37	07:41 16:18	08:43 15:32
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10	08:55 15:53	08:01 17:01	06:49 18:06	06:23 20:15	05:06 21:21	04:18 22:14	04:30 22:13	05:28 21:15	06:34 19:52	07:38 18:28	07:48 16:12	08:48 15:30
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19	08:44 16:10	07:39 17:22	06:24 18:26	05:58 20:35	04:48 21:40	04:15 22:21	04:44 22:00	05:47 20:52	06:53 19:27	07:58 18:04	08:09 15:54	08:57 15:29
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Cimzes iela 28 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (549)
 Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

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	January	February	March	April	May	June	July	August	September	October	November	December	
1	09:01	08:21	07:13	06:48	05:28	04:27	04:20	05:09	06:15	07:18	07:28	08:33	
	15:39	16:40	17:46	19:55	21:01	22:03	22:20	21:35	20:17	18:53	16:32	15:37	
2	09:00	08:19	07:11	06:45	05:25	04:25	04:21	05:11	06:17	07:21	07:30	08:35	
	15:41	16:42	17:48	19:57	21:04	22:04	22:20	21:33	20:15	18:51	16:29	15:36	
3	09:00	08:17	07:08	06:42	05:23	04:24	04:21	05:13	06:19	07:23	07:32	08:37	
	15:42	16:45	17:50	19:59	21:06	22:06	22:19	21:31	20:12	18:48	16:27	15:35	
4	08:59	08:15	07:05	06:39	05:20	04:23	04:22	05:15	06:21	07:25	07:34	08:38	
	15:43	16:47	17:53	20:02	21:08	22:07	22:18	21:29	20:09	18:45	16:25	15:34	
5	08:59	08:13	07:03	06:37	05:18	04:22	04:24	05:17	06:23	07:27	07:37	08:40	
	15:45	16:49	17:55	20:04	21:10	22:08	22:18	21:26	20:06	18:42	16:23	15:33	
6	08:58	08:10	07:00	06:34	05:16	04:21	04:25	05:19	06:25	07:29	07:39	08:42	
	15:46	16:52	17:57	20:06	21:12	22:10	22:17	21:24	20:04	18:39	16:20	15:32	
7	08:58	08:08	06:57	06:31	05:13	04:20	04:26	05:21	06:27	07:31	07:41	08:43	
	15:48	16:54	17:59	20:08	21:15	22:11	22:16	21:22	20:01	18:37	16:18	15:32	
8	08:57	08:06	06:55	06:28	05:11	04:19	04:27	05:24	06:30	07:34	07:44	08:45	
	15:49	16:56	18:02	20:10	21:17	22:12	22:15	21:19	19:58	18:34	16:16	15:31	
9	08:56	08:04	06:52	06:25	05:09	04:18	04:28	05:26	06:32	07:36	07:46	08:46	
	15:51	16:59	18:04	20:13	21:19	22:13	22:14	21:17	19:55	18:31	16:14	15:31	
10	08:55	08:01	06:49	06:23	05:06	04:18	04:30	05:28	06:34	07:38	07:48	08:48	
	15:53	17:01	18:06	20:15	21:21	22:14	22:13	21:15	19:52	18:28	16:12	15:30	
11	08:54	07:59	06:46	06:20	05:04	04:17	04:31	05:30	06:36	07:40	07:51	08:49	
	15:55	17:04	18:09	20:17	21:23	22:15	22:12	21:12	19:50	18:26	16:10	15:30	
12	08:53	07:57	06:44	06:17	05:02	04:17	04:33	05:32	06:38	07:42	07:53	08:50	
	15:57	17:06	18:11	20:19	21:25	22:16	22:10	21:10	19:47	18:23	16:08	15:29	
13	08:52	07:54	06:41	06:15	05:00	04:16	04:34	05:34	06:40	07:44	07:55	08:51	
	15:58	17:08	18:13	20:22	21:27	22:17	22:09	21:07	19:44	18:20	16:06	15:29	
14	08:51	07:52	06:38	06:12	04:58	04:16	04:36	05:36	06:42	07:47	07:57	08:53	
	16:00	17:11	18:15	20:24	21:29	22:18	22:08	21:05	19:41	18:18	16:04	15:29	
15	08:50	07:49	06:35	06:09	04:56	04:15	04:37	05:38	06:44	07:49	08:00	08:54	
	16:02	17:13	18:17	20:26	21:31	22:19	22:06	21:02	19:38	18:15	16:02	15:29	
16	08:48	07:47	06:32	06:06	04:54	04:15	04:39	05:41	06:46	07:51	08:02	08:55	
	16:04	17:15	18:20	20:28	21:34	22:19	22:05	21:00	19:35	18:12	16:00	15:29	
17	08:47	07:44	06:30	06:04	04:52	04:15	04:41	05:43	06:49	07:53	08:04	08:56	
	16:06	17:18	18:22	20:30	21:36	22:20	22:03	20:57	19:33	18:10	15:58	15:29	
18	08:46	07:42	06:27	06:01	04:50	04:15	04:42	05:45	06:51	07:56	08:06	08:56	
	16:08	17:20	18:24	20:33	21:38	22:20	22:02	20:55	19:30	18:07	15:56	15:29	
19	08:44	07:39	06:24	05:58	04:48	04:15	04:44	05:47	06:53	07:58	08:09	08:57	
	16:11	17:22	18:26	20:35	21:40	22:21	22:00	20:52	19:27	18:04	15:54	15:29	
20	08:43	07:37	06:21	05:56	04:46	04:15	04:46	05:49	06:55	08:00	08:11	08:58	13:57 (5)
	16:13	17:25	18:29	20:37	21:42	22:21	21:59	20:50	19:24	18:02	15:53	15:29	3 14:00 (5)
21	08:41	07:34	06:18	05:53	04:44	04:15	04:48	05:51	06:57	08:02	08:13	08:59	13:58 (5)
	16:15	17:27	18:31	20:39	21:44	22:21	21:57	20:47	19:21	17:59	15:51	15:30	3 14:01 (5)
22	08:40	07:32	06:16	05:50	04:42	04:15	04:49	05:53	06:59	08:05	08:15	08:59	13:58 (5)
	16:17	17:30	18:33	20:41	21:45	22:22	21:55	20:44	19:19	17:57	15:49	15:30	3 14:01 (5)
23	08:38	07:29	06:13	05:48	04:40	04:15	04:51	05:56	07:01	08:07	08:17	09:00	13:58 (5)
	16:19	17:32	18:35	20:44	21:47	22:22	21:53	20:42	19:16	17:54	15:48	15:31	3 14:01 (5)
24	08:36	07:27	06:10	05:45	04:39	04:15	04:53	05:58	07:03	08:09	08:19	09:00	14:00 (5)
	16:21	17:34	18:37	20:46	21:49	22:22	21:51	20:39	19:13	17:51	15:46	15:31	1 14:01 (5)
25	08:34	07:24	06:07	05:43	04:37	04:16	04:55	06:00	07:06	07:11	08:21	09:00	
	16:24	17:36	18:40	20:48	21:51	22:22	21:50	20:36	19:10	16:49	15:45	15:32	
26	08:33	07:21	06:04	05:40	04:35	04:16	04:57	06:02	07:08	07:14	08:23	09:01	
	16:26	17:39	18:42	20:50	21:53	22:22	21:48	20:34	19:07	16:46	15:43	15:33	
27	08:31	07:19	06:02	05:38	04:34	04:17	04:59	06:04	07:10	07:16	08:25	09:01	
	16:28	17:41	18:44	20:53	21:55	22:22	21:46	20:31	19:05	16:44	15:42	15:34	
28	08:29	07:16	05:59	05:35	04:32	04:17	05:01	06:06	07:12	07:18	08:27	09:01	
	16:30	17:43	18:46	20:55	21:56	22:21	21:44	20:28	19:02	16:41	15:41	15:35	
29	08:27		06:56	05:33	04:31	04:18	05:03	06:08	07:14	07:21	08:29	09:01	
	16:33		19:48	20:57	21:58	22:21	21:42	20:26	18:59	16:39	15:39	15:36	
30	08:25		06:53	05:30	04:29	04:19	05:05	06:10	07:16	07:23	08:31	09:01	
	16:35		19:51	20:59	22:00	22:21	21:40	20:23	18:56	16:37	15:38	15:37	
31	08:23		06:50		04:28		05:07	06:13		07:25		09:01	
	16:37		19:53		22:01		21:37	20:20		16:34		15:38	
Potential sun hours	227	262	365	429	515	539	539	475	386	321	241	207	
Total, worst case													13
Sun reduction													0.06
Oper. time red.													1.00
Wind dir. red.													1.00
Total reduction													0.06
Total, real													1

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Cimzes iela 29 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (553)
 Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01	08:21	07:13	06:48	05:28	04:27	04:20	05:09	06:15	07:18	07:28	08:33
	15:39	16:40	17:46	19:55	21:01	22:03	22:20	21:35	20:17	18:53	16:32	15:37
2	09:00	08:19	07:11	06:45	05:25	04:25	04:21	05:11	06:17	07:21	07:30	08:35
	15:41	16:42	17:48	19:57	21:04	22:04	22:20	21:33	20:15	18:51	16:29	15:36
3	09:00	08:17	07:08	06:42	05:23	04:24	04:21	05:13	06:19	07:23	07:32	08:37
	15:42	16:44	17:50	19:59	21:06	22:06	22:19	21:31	20:12	18:48	16:27	15:35
4	08:59	08:15	07:05	06:39	05:20	04:23	04:22	05:15	06:21	07:25	07:34	08:38
	15:43	16:47	17:53	20:02	21:08	22:07	22:18	21:29	20:09	18:45	16:25	15:34
5	08:59	08:13	07:03	06:37	05:18	04:22	04:24	05:17	06:23	07:27	07:37	08:40
	15:45	16:49	17:55	20:04	21:10	22:08	22:18	21:26	20:06	18:42	16:23	15:33
6	08:58	08:10	07:00	06:34	05:16	04:21	04:25	05:19	06:25	07:29	07:39	08:42
	15:46	16:52	17:57	20:06	21:12	22:10	22:17	21:24	20:04	18:39	16:20	15:32
7	08:58	08:08	06:57	06:31	05:13	04:20	04:26	05:21	06:27	07:31	07:41	08:43
	15:48	16:54	17:59	20:08	21:15	22:11	22:16	21:22	20:01	18:37	16:18	15:32
8	08:57	08:06	06:55	06:28	05:11	04:19	04:27	05:23	06:30	07:34	07:44	08:45
	15:49	16:56	18:02	20:10	21:17	22:12	22:15	21:19	19:58	18:34	16:16	15:31
9	08:56	08:04	06:52	06:25	05:09	04:18	04:28	05:26	06:32	07:36	07:46	08:46
	15:51	16:59	18:04	20:13	21:19	22:13	22:14	21:17	19:55	18:31	16:14	15:31
10	08:55	08:01	06:49	06:23	05:06	04:18	04:30	05:28	06:34	07:38	07:48	08:48
	15:53	17:01	18:06	20:15	21:21	22:14	22:13	21:15	19:52	18:28	16:12	15:30
11	08:54	07:59	06:46	06:20	05:04	04:17	04:31	05:30	06:36	07:40	07:51	08:49
	15:55	17:04	18:09	20:17	21:23	22:15	22:12	21:12	19:50	18:26	16:10	15:30
12	08:53	07:57	06:44	06:17	05:02	04:17	04:33	05:32	06:38	07:42	07:53	08:50
	15:57	17:06	18:11	20:19	21:25	22:16	22:10	21:10	19:47	18:23	16:08	15:29
13	08:52	07:54	06:41	06:14	05:00	04:16	04:34	05:34	06:40	07:44	07:55	08:51
	15:58	17:08	18:13	20:22	21:27	22:17	22:09	21:07	19:44	18:20	16:05	15:29
14	08:51	07:52	06:38	06:12	04:58	04:16	04:36	05:36	06:42	07:47	07:57	08:53
	16:00	17:11	18:15	20:24	21:29	22:18	22:08	21:05	19:41	18:18	16:04	15:29
15	08:50	07:49	06:35	06:09	04:56	04:15	04:37	05:38	06:44	07:49	08:00	08:54
	16:02	17:13	18:17	20:26	21:31	22:19	22:06	21:02	19:38	18:15	16:02	15:29
16	08:48	07:47	06:32	06:06	04:54	04:15	04:39	05:41	06:46	07:51	08:02	08:55
	16:04	17:15	18:20	20:28	21:34	22:19	22:05	21:00	19:35	18:12	16:00	15:29
17	08:47	07:44	06:30	06:04	04:52	04:15	04:40	05:43	06:49	07:53	08:04	08:56
	16:06	17:18	18:22	20:30	21:36	22:20	22:03	20:57	19:33	18:10	15:58	15:29
18	08:46	07:42	06:27	06:01	04:50	04:15	04:42	05:45	06:51	07:56	08:06	08:56
	16:08	17:20	18:24	20:33	21:38	22:20	22:02	20:55	19:30	18:07	15:56	15:29
19	08:44	07:39	06:24	05:58	04:48	04:15	04:44	05:47	06:53	07:58	08:09	08:57
	16:10	17:22	18:26	20:35	21:40	22:21	22:00	20:52	19:27	18:04	15:54	15:29
20	08:43	07:37	06:21	05:56	04:46	04:15	04:46	05:49	06:55	08:00	08:11	08:58
	16:13	17:25	18:29	20:37	21:42	22:21	21:59	20:50	19:24	18:02	15:53	15:29
21	08:41	07:34	06:18	05:53	04:44	04:15	04:47	05:51	06:57	08:02	08:13	08:59
	16:15	17:27	18:31	20:39	21:44	22:21	21:57	20:47	19:21	17:59	15:51	15:30
22	08:40	07:32	06:16	05:50	04:42	04:15	04:49	05:53	06:59	08:05	08:15	08:59
	16:17	17:29	18:33	20:41	21:45	22:22	21:55	20:44	19:19	17:57	15:49	15:30
23	08:38	07:29	06:13	05:48	04:40	04:15	04:51	05:56	07:01	08:07	08:17	09:00
	16:19	17:32	18:35	20:44	21:47	22:22	21:53	20:42	19:16	17:54	15:48	15:31
24	08:36	07:27	06:10	05:45	04:39	04:15	04:53	05:58	07:03	08:09	08:19	09:00
	16:21	17:34	18:37	20:46	21:49	22:22	21:51	20:39	19:13	17:51	15:46	15:31
25	08:34	07:24	06:07	05:43	04:37	04:16	04:55	06:00	07:06	07:11	08:21	09:00
	16:24	17:36	18:40	20:48	21:51	22:22	21:50	20:36	19:10	16:49	15:45	15:32
26	08:33	07:21	06:04	05:40	04:35	04:16	04:57	06:02	07:08	07:14	08:23	09:01
	16:26	17:39	18:42	20:50	21:53	22:22	21:48	20:34	19:07	16:46	15:43	15:33
27	08:31	07:19	06:02	05:38	04:34	04:17	04:59	06:04	07:10	07:16	08:25	09:01
	16:28	17:41	18:44	20:53	21:55	22:22	21:46	20:31	19:05	16:44	15:42	15:34
28	08:29	07:16	05:59	05:35	04:32	04:17	05:01	06:06	07:12	07:18	08:27	09:01
	16:30	17:43	18:46	20:55	21:56	22:21	21:44	20:28	19:02	16:41	15:41	15:35
29	08:27		06:56	05:32	04:31	04:18	05:03	06:08	07:14	07:21	08:29	09:01
	16:33		19:48	20:57	21:58	22:21	21:42	20:26	18:59	16:39	15:39	15:35
30	08:25		06:53	05:30	04:29	04:19	05:05	06:10	07:16	07:23	08:31	09:01
	16:35		19:51	20:59	22:00	22:21	21:40	20:23	18:56	16:37	15:38	15:37
31	08:23		06:50		04:28		05:07	06:13		07:25		09:01
	16:37		19:53		22:01		21:37	20:20		16:34		15:38
Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Cimzes iela 3 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (714)
 Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:28 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
2	09:00 15:40	08:19 16:42	07:11 17:48	06:45 19:57	05:25 21:04	04:25 22:04	04:20 22:20	05:11 21:33	06:17 20:15	07:21 18:51	07:30 16:29	08:35 15:36
3	09:00 15:42	08:17 16:44	07:08 17:50	06:42 19:59	05:23 21:06	04:24 22:06	04:21 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:37 15:35
4	08:59 15:43	08:15 16:47	07:05 17:53	06:39 20:02	05:20 21:08	04:23 22:07	04:22 22:18	05:15 21:29	06:21 20:09	07:25 18:45	07:34 16:25	08:38 15:34
5	08:59 15:45	08:13 16:49	07:03 17:55	06:37 20:04	05:18 21:10	04:22 22:09	04:24 22:18	05:17 21:26	06:23 20:06	07:27 18:42	07:37 16:23	08:40 15:33
6	08:58 15:46	08:10 16:52	07:00 17:57	06:34 20:06	05:16 21:12	04:21 22:10	04:25 22:17	05:19 21:24	06:25 20:04	07:29 18:39	07:39 16:20	08:42 15:32
7	08:58 15:48	08:08 16:54	06:57 17:59	06:31 20:08	05:13 21:15	04:20 22:11	04:26 22:16	05:21 21:22	06:27 20:01	07:31 18:37	07:41 16:18	08:43 15:32
8	08:57 15:49	08:06 16:56	06:55 18:02	06:28 20:10	05:11 21:17	04:19 22:12	04:27 22:15	05:23 21:19	06:30 19:58	07:34 18:34	07:44 16:16	08:45 15:31
9	08:56 15:51	08:04 16:59	06:52 18:04	06:25 20:13	05:09 21:19	04:18 22:13	04:28 22:14	05:26 21:17	06:32 19:55	07:36 18:31	07:46 16:14	08:46 15:31
10	08:55 15:53	08:01 17:01	06:49 18:06	06:23 20:15	05:06 21:21	04:18 22:14	04:30 22:13	05:28 21:15	06:34 19:52	07:38 18:28	07:48 16:12	08:48 15:30
11	08:54 15:55	07:59 17:04	06:46 18:09	06:20 20:17	05:04 21:23	04:17 22:15	04:31 22:12	05:30 21:12	06:36 19:50	07:40 18:26	07:51 16:10	08:49 15:30
12	08:53 15:57	07:57 17:06	06:44 18:11	06:17 20:19	05:02 21:25	04:17 22:16	04:33 22:10	05:32 21:10	06:38 19:47	07:42 18:23	07:53 16:07	08:50 15:29
13	08:52 15:58	07:54 17:08	06:41 18:13	06:14 20:22	05:00 21:27	04:16 22:17	04:34 22:09	05:34 21:07	06:40 19:44	07:45 18:20	07:55 16:05	08:51 15:29
14	08:51 16:00	07:52 17:11	06:38 18:15	06:12 20:24	04:58 21:29	04:16 22:18	04:36 22:08	05:36 21:05	06:42 19:41	07:47 18:18	07:57 16:04	08:53 15:29
15	08:50 16:02	07:49 17:13	06:35 18:17	06:09 20:26	04:56 21:32	04:15 22:19	04:37 22:06	05:38 21:02	06:44 19:38	07:49 18:15	08:00 16:02	08:54 15:29
16	08:48 16:04	07:47 17:15	06:32 18:20	06:06 20:28	04:54 21:34	04:15 22:19	04:39 22:05	05:41 21:00	06:46 19:35	07:51 18:12	08:02 16:00	08:55 15:29
17	08:47 16:06	07:44 17:18	06:30 18:22	06:04 20:30	04:51 21:36	04:15 22:20	04:40 22:03	05:43 20:57	06:49 19:33	07:53 18:10	08:04 15:58	08:56 15:29
18	08:46 16:08	07:42 17:20	06:27 18:24	06:01 20:33	04:50 21:38	04:15 22:20	04:42 22:02	05:45 20:55	06:51 19:30	07:56 18:07	08:06 15:56	08:56 15:29
19	08:44 16:10	07:39 17:22	06:24 18:26	05:58 20:35	04:48 21:40	04:15 22:21	04:44 22:00	05:47 20:52	06:53 19:27	07:58 18:04	08:09 15:54	08:57 15:29
20	08:43 16:13	07:37 17:25	06:21 18:29	05:56 20:37	04:46 21:42	04:15 22:21	04:46 21:59	05:49 20:50	06:55 19:24	08:00 18:02	08:11 15:53	08:58 15:29
21	08:41 16:15	07:34 17:27	06:18 18:31	05:53 20:39	04:44 21:44	04:15 22:22	04:47 21:57	05:51 20:47	06:57 19:21	08:02 17:59	08:13 15:51	08:59 15:30
22	08:40 16:17	07:32 17:29	06:16 18:33	05:50 20:41	04:42 21:45	04:15 22:22	04:49 21:55	05:53 20:44	06:59 19:19	08:05 17:57	08:15 15:49	08:59 15:30
23	08:38 16:19	07:29 17:32	06:13 18:35	05:48 20:44	04:40 21:47	04:15 22:22	04:51 21:53	05:56 20:42	07:01 19:16	08:07 17:54	08:17 15:48	09:00 15:31
24	08:36 16:21	07:27 17:34	06:10 18:37	05:45 20:46	04:39 21:49	04:15 22:22	04:53 21:52	05:58 20:39	07:03 19:13	08:09 17:51	08:19 15:46	09:00 15:31
25	08:34 16:24	07:24 17:36	06:07 18:40	05:43 20:48	04:37 21:51	04:16 22:22	04:55 21:50	06:00 20:36	07:06 19:10	07:11 16:49	08:21 15:45	09:00 15:32
26	08:33 16:26	07:21 17:39	06:04 18:42	05:40 20:50	04:35 21:53	04:16 22:22	04:57 21:48	06:02 20:34	07:08 19:07	07:14 16:46	08:23 15:43	09:01 15:33
27	08:31 16:28	07:19 17:41	06:02 18:44	05:38 20:53	04:34 21:55	04:17 22:22	04:59 21:46	06:04 20:31	07:10 19:05	07:16 16:44	08:25 15:42	09:01 15:34
28	08:29 16:30	07:16 17:43	05:59 18:46	05:35 20:55	04:32 21:56	04:17 22:21	05:01 21:44	06:06 20:28	07:12 19:02	07:18 16:41	08:27 15:41	09:01 15:34
29	08:27 16:33		06:56 19:48	05:32 20:57	04:31 21:58	04:18 22:21	05:03 21:42	06:08 20:26	07:14 18:59	07:21 16:39	08:29 15:39	09:01 15:35
30	08:25 16:35		06:53 19:51	05:30 20:59	04:29 22:00	04:19 22:21	05:05 21:40	06:10 20:23	07:16 18:56	07:23 16:37	08:31 15:38	09:01 15:37
31	08:23 16:37		06:50 19:53		04:28 22:01		05:07 21:38	06:13 20:20		07:25 16:34		09:01 15:38
Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Cimzes iela 30 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (572)
 Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:28 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
2	09:00 15:41	08:19 16:42	07:11 17:48	06:45 19:57	05:25 21:04	04:25 22:04	04:21 22:20	05:11 21:33	06:17 20:15	07:21 18:51	07:30 16:29	08:35 15:36
3	09:00 15:42	08:17 16:45	07:08 17:50	06:42 19:59	05:23 21:06	04:24 22:06	04:21 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:37 15:35
4	08:59 15:43	08:15 16:47	07:05 17:53	06:39 20:02	05:20 21:08	04:23 22:07	04:22 22:18	05:15 21:29	06:21 20:09	07:25 18:45	07:34 16:25	08:38 15:34
5	08:59 15:45	08:13 16:49	07:03 17:55	06:37 20:04	05:18 21:10	04:22 22:08	04:24 22:18	05:17 21:26	06:23 20:06	07:27 18:42	07:37 16:23	08:40 15:33
6	08:58 15:46	08:10 16:52	07:00 17:57	06:34 20:06	05:16 21:12	04:21 22:10	04:25 22:17	05:19 21:24	06:25 20:04	07:29 18:39	07:39 16:20	08:42 15:32
7	08:58 15:48	08:08 16:54	06:57 17:59	06:31 20:08	05:13 21:15	04:20 22:11	04:26 22:16	05:21 21:22	06:27 20:01	07:31 18:37	07:41 16:18	08:43 15:32
8	08:57 15:49	08:06 16:56	06:55 18:02	06:28 20:10	05:11 21:17	04:19 22:12	04:27 22:15	05:24 21:19	06:30 19:58	07:34 18:34	07:44 16:16	08:45 15:31
9	08:56 15:51	08:04 16:59	06:52 18:04	06:25 20:13	05:09 21:19	04:18 22:13	04:28 22:14	05:26 21:17	06:32 19:55	07:36 18:31	07:46 16:14	08:46 15:31
10	08:55 15:53	08:01 17:01	06:49 18:06	06:23 20:15	05:06 21:21	04:18 22:14	04:30 22:13	05:28 21:15	06:34 19:52	07:38 18:28	07:48 16:12	08:48 15:30
11	08:54 15:55	07:59 17:04	06:46 18:09	06:20 20:17	05:04 21:23	04:17 22:15	04:31 22:12	05:30 21:12	06:36 19:50	07:40 18:26	07:51 16:10	08:49 15:30
12	08:53 15:57	07:57 17:06	06:44 18:11	06:17 20:19	05:02 21:25	04:17 22:16	04:33 22:10	05:32 21:19	06:38 19:47	07:42 18:23	07:53 16:08	08:50 15:29
13	08:52 15:58	07:54 17:08	06:41 18:13	06:15 20:22	05:00 21:27	04:16 22:17	04:34 22:09	05:34 21:07	06:40 19:44	07:44 18:20	07:55 16:06	08:51 15:29
14	08:51 16:00	07:52 17:11	06:38 18:15	06:12 20:24	04:58 21:29	04:16 22:18	04:36 22:08	05:36 21:05	06:42 19:41	07:47 18:18	07:57 16:04	08:53 15:29
15	08:50 16:02	07:49 17:13	06:35 18:17	06:09 20:26	04:56 21:32	04:15 22:19	04:37 22:06	05:38 21:02	06:44 19:38	07:49 18:15	08:00 16:02	08:54 15:29
16	08:48 16:04	07:47 17:15	06:32 18:20	06:06 20:28	04:54 21:34	04:15 22:19	04:39 22:05	05:41 21:00	06:46 19:35	07:51 18:12	08:02 16:00	08:55 15:29
17	08:47 16:06	07:44 17:18	06:30 18:22	06:04 20:30	04:52 21:36	04:15 22:20	04:41 22:03	05:43 20:57	06:49 19:33	07:53 18:10	08:04 15:58	08:56 15:29
18	08:46 16:08	07:42 17:20	06:27 18:24	06:01 20:33	04:50 21:38	04:15 22:20	04:42 22:02	05:45 20:55	06:51 19:30	07:56 18:07	08:06 15:56	08:56 15:29
19	08:44 16:11	07:39 17:22	06:24 18:26	05:58 20:35	04:48 21:40	04:15 22:21	04:44 22:00	05:47 20:52	06:53 19:27	07:58 18:04	08:09 15:54	08:57 15:29
20	08:43 16:13	07:37 17:25	06:21 18:29	05:56 20:37	04:46 21:42	04:15 22:21	04:46 21:59	05:49 20:50	06:55 19:24	08:00 18:02	08:11 15:53	08:58 15:29
21	08:41 16:15	07:34 17:27	06:18 18:31	05:53 20:39	04:44 21:44	04:15 22:21	04:48 21:57	05:51 20:47	06:57 19:21	08:02 17:59	08:13 15:51	08:59 15:30
22	08:40 16:17	07:32 17:30	06:16 18:33	05:50 20:41	04:42 21:45	04:15 22:22	04:49 21:55	05:53 20:44	06:59 19:19	08:05 17:57	08:15 15:49	08:59 15:30
23	08:38 16:19	07:29 17:32	06:13 18:35	05:48 20:44	04:40 21:47	04:15 22:22	04:51 21:53	05:56 20:42	07:01 19:16	08:07 17:54	08:17 15:48	09:00 15:31
24	08:36 16:21	07:27 17:34	06:10 18:37	05:45 20:46	04:39 21:49	04:15 22:22	04:53 21:52	05:58 20:39	07:03 19:13	08:09 17:51	08:19 15:46	09:00 15:31
25	08:34 16:24	07:24 17:37	06:07 18:40	05:43 20:48	04:37 21:51	04:16 22:22	04:55 21:50	06:00 20:36	07:06 19:10	07:11 16:49	08:21 15:45	09:00 15:32
26	08:33 16:26	07:21 17:39	06:04 18:42	05:40 20:50	04:35 21:53	04:16 22:22	04:57 21:48	06:02 20:34	07:08 19:07	07:14 16:46	08:23 15:43	09:01 15:33
27	08:31 16:28	07:19 17:41	06:02 18:44	05:38 20:53	04:34 21:55	04:17 22:22	04:59 21:46	06:04 20:31	07:10 19:05	07:16 16:44	08:25 15:42	09:01 15:34
28	08:29 16:30	07:16 17:43	05:59 18:46	05:35 20:55	04:32 21:56	04:17 22:21	05:01 21:44	06:06 20:28	07:12 19:02	07:18 16:42	08:27 15:41	09:01 15:35
29	08:27 16:33		06:56 19:48	05:33 20:57	04:31 21:58	04:18 22:21	05:03 21:42	06:08 20:26	07:14 18:59	07:21 16:39	08:29 15:39	09:01 15:36
30	08:25 16:35		06:53 19:51	05:30 20:59	04:29 22:00	04:19 22:21	05:05 21:40	06:10 20:23	07:16 18:56	07:23 16:37	08:31 15:38	09:01 15:37
31	08:23 16:37		06:50 19:53		04:28 22:01		05:07 21:37	06:13 20:20		07:25 16:34		09:01 15:38
Potential sun hours	227	262	365	429	515	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Cimzes iela 5 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (728)
 Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:28 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
2	09:00 15:40	08:19 16:42	07:11 17:48	06:45 19:57	05:25 21:04	04:25 22:04	04:20 22:20	05:11 21:33	06:17 20:15	07:21 18:51	07:30 16:29	08:35 15:36
3	09:00 15:42	08:17 16:44	07:08 17:50	06:42 19:59	05:23 21:06	04:24 22:06	04:21 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:37 15:35
4	08:59 15:43	08:15 16:47	07:05 17:53	06:39 20:02	05:20 21:08	04:23 22:07	04:22 22:18	05:15 21:29	06:21 20:09	07:25 18:45	07:34 16:25	08:38 15:34
5	08:59 15:45	08:13 16:49	07:03 17:55	06:37 20:04	05:18 21:10	04:22 22:09	04:24 22:18	05:17 21:26	06:23 20:06	07:27 18:42	07:37 16:23	08:40 15:33
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7	08:58 15:48	08:08 16:54	06:57 17:59	06:31 20:08	05:13 21:15	04:20 22:11	04:26 22:16	05:21 21:22	06:27 20:01	07:31 18:37	07:41 16:18	08:43 15:32
8	08:57 15:49	08:06 16:56	06:55 18:02	06:28 20:10	05:11 21:17	04:19 22:12	04:27 22:15	05:23 21:19	06:30 19:58	07:34 18:34	07:44 16:16	08:45 15:31
9	08:56 15:51	08:04 16:59	06:52 18:04	06:25 20:13	05:09 21:19	04:18 22:13	04:28 22:14	05:26 21:17	06:32 19:55	07:36 18:31	07:46 16:14	08:46 15:31
10	08:55 15:53	08:01 17:01	06:49 18:06	06:23 20:15	05:06 21:21	04:18 22:14	04:30 22:13	05:28 21:15	06:34 19:52	07:38 18:28	07:48 16:12	08:48 15:30
11	08:54 15:55	07:59 17:04	06:46 18:09	06:20 20:17	05:04 21:23	04:17 22:15	04:31 22:12	05:30 21:12	06:36 19:50	07:40 18:26	07:51 16:10	08:49 15:30
12	08:53 15:57	07:57 17:06	06:44 18:11	06:17 20:19	05:02 21:25	04:17 22:16	04:33 22:10	05:32 21:19	06:38 19:47	07:42 18:23	07:53 16:07	08:50 15:29
13	08:52 15:58	07:54 17:08	06:41 18:13	06:14 20:22	05:00 21:27	04:16 22:17	04:34 22:09	05:34 21:07	06:40 19:44	07:45 18:20	07:55 16:05	08:51 15:29
14	08:51 16:00	07:52 17:11	06:38 18:15	06:12 20:24	04:58 21:29	04:16 22:18	04:36 22:08	05:36 21:05	06:42 19:41	07:47 18:18	07:57 16:04	08:53 15:29
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19	08:44 16:10	07:39 17:22	06:24 18:26	05:58 20:35	04:48 21:40	04:15 22:21	04:44 22:00	05:47 20:52	06:53 19:27	07:58 18:04	08:09 15:54	08:57 15:29
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22	08:40 16:17	07:32 17:29	06:16 18:33	05:50 20:41	04:42 21:45	04:15 22:22	04:49 21:55	05:53 20:44	06:59 19:19	08:05 17:57	08:15 15:49	08:59 15:30
23	08:38 16:19	07:29 17:32	06:13 18:35	05:48 20:44	04:40 21:47	04:15 22:22	04:51 21:53	05:56 20:42	07:01 19:16	08:07 17:54	08:17 15:48	09:00 15:31
24	08:36 16:21	07:27 17:34	06:10 18:37	05:45 20:46	04:39 21:49	04:15 22:22	04:53 21:52	05:58 20:39	07:03 19:13	08:09 17:51	08:19 15:46	09:00 15:31
25	08:34 16:24	07:24 17:36	06:07 18:40	05:43 20:48	04:37 21:51	04:16 22:22	04:55 21:50	06:00 20:36	07:06 19:10	07:11 16:49	08:21 15:45	09:00 15:32
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Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Cimzes iela 7 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (718)
 Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:28 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
2	09:00 15:40	08:19 16:42	07:11 17:48	06:45 19:57	05:25 21:04	04:25 22:04	04:20 22:20	05:11 21:33	06:17 20:15	07:21 18:51	07:30 16:29	08:35 15:36
3	09:00 15:42	08:17 16:44	07:08 17:50	06:42 19:59	05:23 21:06	04:24 22:06	04:21 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:37 15:35
4	08:59 15:43	08:15 16:47	07:05 17:53	06:39 20:02	05:20 21:08	04:23 22:07	04:22 22:18	05:15 21:29	06:21 20:09	07:25 18:45	07:34 16:25	08:38 15:34
5	08:59 15:45	08:13 16:49	07:03 17:55	06:37 20:04	05:18 21:10	04:22 22:09	04:24 22:18	05:17 21:26	06:23 20:06	07:27 18:42	07:37 16:23	08:40 15:33
6	08:58 15:46	08:10 16:52	07:00 17:57	06:34 20:06	05:16 21:12	04:21 22:10	04:25 22:17	05:19 21:24	06:25 20:04	07:29 18:39	07:39 16:20	08:42 15:32
7	08:58 15:48	08:08 16:54	06:57 17:59	06:31 20:08	05:13 21:15	04:20 22:11	04:26 22:16	05:21 21:22	06:27 20:01	07:31 18:37	07:41 16:18	08:43 15:32
8	08:57 15:49	08:06 16:56	06:55 18:02	06:28 20:10	05:11 21:17	04:19 22:12	04:27 22:15	05:23 21:19	06:30 19:58	07:34 18:34	07:44 16:16	08:45 15:31
9	08:56 15:51	08:04 16:59	06:52 18:04	06:25 20:13	05:09 21:19	04:18 22:13	04:28 22:14	05:26 21:17	06:32 19:55	07:36 18:31	07:46 16:14	08:46 15:31
10	08:55 15:53	08:01 17:01	06:49 18:06	06:23 20:15	05:06 21:21	04:18 22:14	04:30 22:13	05:28 21:15	06:34 19:52	07:38 18:28	07:48 16:12	08:48 15:30
11	08:54 15:55	07:59 17:04	06:46 18:09	06:20 20:17	05:04 21:23	04:17 22:15	04:31 22:12	05:30 21:12	06:36 19:50	07:40 18:26	07:51 16:10	08:49 15:30
12	08:53 15:57	07:57 17:06	06:44 18:11	06:17 20:19	05:02 21:25	04:17 22:16	04:33 22:10	05:32 21:10	06:38 19:47	07:42 18:23	07:53 16:07	08:50 15:29
13	08:52 15:58	07:54 17:08	06:41 18:13	06:14 20:22	05:00 21:27	04:16 22:17	04:34 22:09	05:34 21:07	06:40 19:44	07:45 18:20	07:55 16:05	08:51 15:29
14	08:51 16:00	07:52 17:11	06:38 18:15	06:12 20:24	04:58 21:29	04:16 22:18	04:36 22:08	05:36 21:05	06:42 19:41	07:47 18:18	07:57 16:04	08:53 15:29
15	08:50 16:02	07:49 17:13	06:35 18:17	06:09 20:26	04:56 21:32	04:15 22:19	04:37 22:06	05:38 21:02	06:44 19:38	07:49 18:15	08:00 16:02	08:54 15:29
16	08:48 16:04	07:47 17:15	06:32 18:20	06:06 20:28	04:54 21:34	04:15 22:19	04:39 22:05	05:41 21:00	06:46 19:35	07:51 18:12	08:02 16:00	08:55 15:29
17	08:47 16:06	07:44 17:18	06:30 18:22	06:04 20:30	04:51 21:36	04:15 22:20	04:40 22:03	05:43 20:57	06:49 19:33	07:53 18:10	08:04 15:58	08:56 15:29
18	08:46 16:08	07:42 17:20	06:27 18:24	06:01 20:33	04:50 21:38	04:15 22:20	04:42 22:02	05:45 20:55	06:51 19:30	07:56 18:07	08:06 15:56	08:56 15:29
19	08:44 16:10	07:39 17:22	06:24 18:26	05:58 20:35	04:48 21:40	04:15 22:21	04:44 22:00	05:47 20:52	06:53 19:27	07:58 18:04	08:09 15:54	08:57 15:29
20	08:43 16:13	07:37 17:25	06:21 18:29	05:56 20:37	04:46 21:42	04:15 22:21	04:46 21:59	05:49 20:50	06:55 19:24	08:00 18:02	08:11 15:53	08:58 15:29
21	08:41 16:15	07:34 17:27	06:18 18:31	05:53 20:39	04:44 21:44	04:15 22:22	04:47 21:57	05:51 20:47	06:57 19:21	08:02 17:59	08:13 15:51	08:59 15:30
22	08:40 16:17	07:32 17:29	06:16 18:33	05:50 20:41	04:42 21:45	04:15 22:22	04:49 21:55	05:53 20:44	06:59 19:19	08:05 17:57	08:15 15:49	08:59 15:30
23	08:38 16:19	07:29 17:32	06:13 18:35	05:48 20:44	04:40 21:47	04:15 22:22	04:51 21:53	05:56 20:42	07:01 19:16	08:07 17:54	08:17 15:48	09:00 15:31
24	08:36 16:21	07:27 17:34	06:10 18:37	05:45 20:46	04:39 21:49	04:15 22:22	04:53 21:52	05:58 20:39	07:03 19:13	08:09 17:51	08:19 15:46	09:00 15:31
25	08:34 16:24	07:24 17:36	06:07 18:40	05:43 20:48	04:37 21:51	04:16 22:22	04:55 21:50	06:00 20:36	07:06 19:10	07:11 16:49	08:21 15:45	09:00 15:32
26	08:33 16:26	07:21 17:39	06:04 18:42	05:40 20:50	04:35 21:53	04:16 22:22	04:57 21:48	06:02 20:34	07:08 19:07	07:14 16:46	08:23 15:43	09:01 15:33
27	08:31 16:28	07:19 17:41	06:02 18:44	05:38 20:53	04:34 21:55	04:17 22:22	04:59 21:46	06:04 20:31	07:10 19:05	07:16 16:44	08:25 15:42	09:01 15:34
28	08:29 16:30	07:16 17:43	05:59 18:46	05:35 20:55	04:32 21:56	04:17 22:21	05:01 21:44	06:06 20:28	07:12 19:02	07:18 16:41	08:27 15:41	09:01 15:34
29	08:27 16:33		05:56 19:48	05:32 20:57	04:31 21:58	04:18 22:21	05:03 21:42	06:08 20:26	07:14 18:59	07:21 16:39	08:29 15:39	09:01 15:35
30	08:25 16:35		05:53 19:51	05:30 20:59	04:29 22:00	04:19 22:21	05:05 21:40	06:10 20:23	07:16 18:56	07:23 16:37	08:31 15:38	09:01 15:37
31	08:23 16:37		05:50 19:53		04:28 22:01		05:07 21:38	06:13 20:20		07:25 16:34		09:01 15:38
Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Cimzes iela 7a - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (736)
Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01	08:21	07:13	06:48	05:28	04:27	04:20	05:09	06:15	07:18	07:28	08:33
	15:39	16:40	17:46	19:55	21:01	22:03	22:20	21:35	20:17	18:53	16:32	15:37
2	09:00	08:19	07:11	06:45	05:25	04:25	04:20	05:11	06:17	07:21	07:30	08:35
	15:40	16:42	17:48	19:57	21:04	22:04	22:20	21:33	20:15	18:51	16:29	15:36
3	09:00	08:17	07:08	06:42	05:23	04:24	04:21	05:13	06:19	07:23	07:32	08:37
	15:42	16:44	17:50	19:59	21:06	22:06	22:19	21:31	20:12	18:48	16:27	15:35
4	08:59	08:15	07:05	06:39	05:20	04:23	04:22	05:15	06:21	07:25	07:34	08:38
	15:43	16:47	17:53	20:02	21:08	22:07	22:18	21:29	20:09	18:45	16:25	15:34
5	08:59	08:13	07:03	06:37	05:18	04:22	04:24	05:17	06:23	07:27	07:37	08:40
	15:45	16:49	17:55	20:04	21:10	22:09	22:18	21:26	20:06	18:42	16:23	15:33
6	08:58	08:10	07:00	06:34	05:16	04:21	04:25	05:19	06:25	07:29	07:39	08:42
	15:46	16:52	17:57	20:06	21:12	22:10	22:17	21:24	20:04	18:39	16:20	15:32
7	08:58	08:08	06:57	06:31	05:13	04:20	04:26	05:21	06:27	07:31	07:41	08:43
	15:48	16:54	17:59	20:08	21:15	22:11	22:16	21:22	20:01	18:37	16:18	15:32
8	08:57	08:06	06:55	06:28	05:11	04:19	04:27	05:23	06:30	07:34	07:44	08:45
	15:49	16:56	18:02	20:10	21:17	22:12	22:15	21:19	19:58	18:34	16:16	15:31
9	08:56	08:04	06:52	06:25	05:09	04:18	04:28	05:26	06:32	07:36	07:46	08:46
	15:51	16:59	18:04	20:13	21:19	22:13	22:14	21:17	19:55	18:31	16:14	15:31
10	08:55	08:01	06:49	06:23	05:06	04:18	04:30	05:28	06:34	07:38	07:48	08:48
	15:53	17:01	18:06	20:15	21:21	22:14	22:13	21:15	19:52	18:28	16:12	15:30
11	08:54	07:59	06:46	06:20	05:04	04:17	04:31	05:30	06:36	07:40	07:51	08:49
	15:55	17:04	18:09	20:17	21:23	22:15	22:12	21:12	19:50	18:26	16:10	15:30
12	08:53	07:57	06:44	06:17	05:02	04:17	04:33	05:32	06:38	07:42	07:53	08:50
	15:57	17:06	18:11	20:19	21:25	22:16	22:10	21:10	19:47	18:23	16:07	15:29
13	08:52	07:54	06:41	06:14	05:00	04:16	04:34	05:34	06:40	07:45	07:55	08:51
	15:58	17:08	18:13	20:22	21:27	22:17	22:09	21:07	19:44	18:20	16:05	15:29
14	08:51	07:52	06:38	06:12	04:58	04:16	04:36	05:36	06:42	07:47	07:57	08:53
	16:00	17:11	18:15	20:24	21:29	22:18	22:08	21:05	19:41	18:18	16:04	15:29
15	08:50	07:49	06:35	06:09	04:56	04:15	04:37	05:38	06:44	07:49	08:00	08:54
	16:02	17:13	18:17	20:26	21:32	22:19	22:06	21:02	19:38	18:15	16:02	15:29
16	08:48	07:47	06:32	06:06	04:54	04:15	04:39	05:41	06:46	07:51	08:02	08:55
	16:04	17:15	18:20	20:28	21:34	22:19	22:05	21:00	19:35	18:12	16:00	15:29
17	08:47	07:44	06:30	06:04	04:51	04:15	04:40	05:43	06:49	07:53	08:04	08:56
	16:06	17:18	18:22	20:30	21:36	22:20	22:03	20:57	19:33	18:10	15:58	15:29
18	08:46	07:42	06:27	06:01	04:50	04:15	04:42	05:45	06:51	07:56	08:06	08:56
	16:08	17:20	18:24	20:33	21:38	22:20	22:02	20:55	19:30	18:07	15:56	15:29
19	08:44	07:39	06:24	05:58	04:48	04:15	04:44	05:47	06:53	07:58	08:09	08:57
	16:10	17:22	18:26	20:35	21:40	22:21	22:00	20:52	19:27	18:04	15:54	15:29
20	08:43	07:37	06:21	05:56	04:46	04:15	04:46	05:49	06:55	08:00	08:11	08:58
	16:13	17:25	18:29	20:37	21:42	22:21	21:59	20:50	19:24	18:02	15:53	15:29
21	08:41	07:34	06:18	05:53	04:44	04:15	04:47	05:51	06:57	08:02	08:13	08:59
	16:15	17:27	18:31	20:39	21:44	22:22	21:57	20:47	19:21	17:59	15:51	15:30
22	08:40	07:32	06:16	05:50	04:42	04:15	04:49	05:53	06:59	08:05	08:15	08:59
	16:17	17:29	18:33	20:41	21:45	22:22	21:55	20:44	19:19	17:57	15:49	15:30
23	08:38	07:29	06:13	05:48	04:40	04:15	04:51	05:56	07:01	08:07	08:17	09:00
	16:19	17:32	18:35	20:44	21:47	22:22	21:53	20:42	19:16	17:54	15:48	15:31
24	08:36	07:27	06:10	05:45	04:39	04:15	04:53	05:58	07:03	08:09	08:19	09:00
	16:21	17:34	18:37	20:46	21:49	22:22	21:52	20:39	19:13	17:51	15:46	15:31
25	08:34	07:24	06:07	05:43	04:37	04:16	04:55	06:00	07:06	07:11	08:21	09:00
	16:24	17:36	18:40	20:48	21:51	22:22	21:50	20:36	19:10	16:49	15:45	15:32
26	08:33	07:21	06:04	05:40	04:35	04:16	04:57	06:02	07:08	07:14	08:23	09:01
	16:26	17:39	18:42	20:50	21:53	22:22	21:48	20:34	19:07	16:46	15:43	15:33
27	08:31	07:19	06:02	05:38	04:34	04:17	04:59	06:04	07:10	07:16	08:25	09:01
	16:28	17:41	18:44	20:53	21:55	22:22	21:46	20:31	19:05	16:44	15:42	15:34
28	08:29	07:16	05:59	05:35	04:32	04:17	05:01	06:06	07:12	07:18	08:27	09:01
	16:30	17:43	18:46	20:55	21:56	22:21	21:44	20:28	19:02	16:41	15:41	15:34
29	08:27		06:56	05:32	04:31	04:18	05:03	06:08	07:14	07:21	08:29	09:01
	16:33		19:48	20:57	21:58	22:21	21:42	20:26	18:59	16:39	15:39	15:35
30	08:25		06:53	05:30	04:29	04:19	05:05	06:10	07:16	07:23	08:31	09:01
	16:35		19:51	20:59	22:00	22:21	21:40	20:23	18:56	16:37	15:38	15:37
31	08:23		06:50		04:28		05:07	06:13		07:25		09:01
	16:37		19:53		22:01		21:38	20:20		16:34		15:38
Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Cimzes iela 9 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (762)
 Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:28 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
2	09:00 15:40	08:19 16:42	07:11 17:48	06:45 19:57	05:25 21:04	04:25 22:04	04:20 22:20	05:11 21:33	06:17 20:15	07:21 18:51	07:30 16:29	08:35 15:36
3	09:00 15:42	08:17 16:44	07:08 17:50	06:42 19:59	05:23 21:06	04:24 22:06	04:21 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:37 15:35
4	08:59 15:43	08:15 16:47	07:05 17:53	06:39 20:02	05:20 21:08	04:23 22:07	04:22 22:18	05:15 21:29	06:21 20:09	07:25 18:45	07:34 16:25	08:38 15:34
5	08:59 15:45	08:13 16:49	07:03 17:55	06:37 20:04	05:18 21:10	04:22 22:09	04:24 22:18	05:17 21:26	06:23 20:06	07:27 18:42	07:37 16:23	08:40 15:33
6	08:58 15:46	08:10 16:52	07:00 17:57	06:34 20:06	05:16 21:12	04:21 22:10	04:25 22:17	05:19 21:24	06:25 20:04	07:29 18:39	07:39 16:20	08:42 15:32
7	08:58 15:48	08:08 16:54	06:57 17:59	06:31 20:08	05:13 21:15	04:20 22:11	04:26 22:16	05:21 21:22	06:27 20:01	07:31 18:37	07:41 16:18	08:43 15:32
8	08:57 15:49	08:06 16:56	06:55 18:02	06:28 20:10	05:11 21:17	04:19 22:12	04:27 22:15	05:23 21:19	06:30 19:58	07:34 18:34	07:44 16:16	08:45 15:31
9	08:56 15:51	08:04 16:59	06:52 18:04	06:25 20:13	05:09 21:19	04:18 22:13	04:28 22:14	05:26 21:17	06:32 19:55	07:36 18:31	07:46 16:14	08:46 15:31
10	08:55 15:53	08:01 17:01	06:49 18:06	06:23 20:15	05:06 21:21	04:18 22:14	04:30 22:13	05:28 21:15	06:34 19:52	07:38 18:28	07:48 16:12	08:48 15:30
11	08:54 15:55	07:59 17:04	06:46 18:09	06:20 20:17	05:04 21:23	04:17 22:15	04:31 22:12	05:30 21:12	06:36 19:50	07:40 18:26	07:51 16:10	08:49 15:30
12	08:53 15:57	07:57 17:06	06:44 18:11	06:17 20:19	05:02 21:25	04:17 22:16	04:33 22:10	05:32 21:19	06:38 19:47	07:42 18:23	07:53 16:07	08:50 15:29
13	08:52 15:58	07:54 17:08	06:41 18:13	06:14 20:22	05:00 21:27	04:16 22:17	04:34 22:09	05:34 21:07	06:40 19:44	07:45 18:20	07:55 16:05	08:51 15:29
14	08:51 16:00	07:52 17:11	06:38 18:15	06:12 20:24	04:58 21:29	04:16 22:18	04:36 22:08	05:36 21:05	06:42 19:41	07:47 18:18	07:57 16:04	08:53 15:29
15	08:50 16:02	07:49 17:13	06:35 18:17	06:09 20:26	04:56 21:32	04:15 22:19	04:37 22:06	05:38 21:02	06:44 19:38	07:49 18:15	08:00 16:02	08:54 15:29
16	08:48 16:04	07:47 17:15	06:32 18:20	06:06 20:28	04:54 21:34	04:15 22:19	04:39 22:05	05:41 21:00	06:46 19:35	07:51 18:12	08:02 16:00	08:55 15:29
17	08:47 16:06	07:44 17:18	06:30 18:22	06:04 20:30	04:51 21:36	04:15 22:20	04:40 22:03	05:43 20:57	06:49 19:33	07:53 18:10	08:04 15:58	08:56 15:29
18	08:46 16:08	07:42 17:20	06:27 18:24	06:01 20:33	04:50 21:38	04:15 22:20	04:42 22:02	05:45 20:55	06:51 19:30	07:56 18:07	08:06 15:56	08:56 15:29
19	08:44 16:10	07:39 17:22	06:24 18:26	05:58 20:35	04:48 21:40	04:15 22:21	04:44 22:00	05:47 20:52	06:53 19:27	07:58 18:04	08:09 15:54	08:57 15:29
20	08:43 16:13	07:37 17:25	06:21 18:29	05:56 20:37	04:46 21:42	04:15 22:21	04:46 21:59	05:49 20:50	06:55 19:24	08:00 18:02	08:11 15:53	08:58 15:29
21	08:41 16:15	07:34 17:27	06:18 18:31	05:53 20:39	04:44 21:44	04:15 22:22	04:47 21:57	05:51 20:47	06:57 19:21	08:02 17:59	08:13 15:51	08:59 15:30
22	08:40 16:17	07:32 17:29	06:16 18:33	05:50 20:41	04:42 21:45	04:15 22:22	04:49 21:55	05:53 20:44	06:59 19:19	08:05 17:57	08:15 15:49	08:59 15:30
23	08:38 16:19	07:29 17:32	06:13 18:35	05:48 20:44	04:40 21:47	04:15 22:22	04:51 21:53	05:56 20:42	07:01 19:16	08:07 17:54	08:17 15:48	09:00 15:31
24	08:36 16:21	07:27 17:34	06:10 18:37	05:45 20:46	04:39 21:49	04:15 22:22	04:53 21:52	05:58 20:39	07:03 19:13	08:09 17:51	08:19 15:46	09:00 15:31
25	08:34 16:24	07:24 17:36	06:07 18:40	05:43 20:48	04:37 21:51	04:16 22:22	04:55 21:50	06:00 20:36	07:06 19:10	07:11 16:49	08:21 15:45	09:00 15:32
26	08:33 16:26	07:21 17:39	06:04 18:42	05:40 20:50	04:35 21:53	04:16 22:22	04:57 21:48	06:02 20:34	07:08 19:07	07:14 16:46	08:23 15:43	09:01 15:33
27	08:31 16:28	07:19 17:41	06:02 18:44	05:38 20:53	04:34 21:55	04:17 22:22	04:59 21:46	06:04 20:31	07:10 19:05	07:16 16:44	08:25 15:42	09:01 15:34
28	08:29 16:30	07:16 17:43	05:59 18:46	05:35 20:55	04:32 21:56	04:17 22:21	05:01 21:44	06:06 20:28	07:12 19:02	07:18 16:41	08:27 15:41	09:01 15:34
29	08:27 16:33		05:56 19:48	05:32 20:57	04:31 21:58	04:18 22:21	05:03 21:42	06:08 20:26	07:14 18:59	07:21 16:39	08:29 15:39	09:01 15:35
30	08:25 16:35		05:53 19:51	05:30 20:59	04:29 22:00	04:19 22:21	05:05 21:40	06:10 20:23	07:16 18:56	07:23 16:37	08:31 15:38	09:01 15:37
31	08:23 16:37		05:50 19:53		04:28 22:01		05:07 21:38	06:13 20:20		07:25 16:34		09:01 15:38
Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Dravas - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (449)
Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January			February			March			April	May	June
1	09:00		14:10 (4)	08:21		15:50 (2)	07:13		06:48	05:27	04:27	
	15:39	24	14:34 (4)	16:40	13	16:03 (2)	17:46		19:55	21:01	22:02	
2	09:00		14:10 (4)	08:19		15:49 (2)	07:11		06:45	05:25	04:25	
	15:41	23	14:33 (4)	16:42	17	16:06 (2)	17:48		19:57	21:03	22:04	
3	09:00		14:12 (4)	08:17		15:49 (2)	07:08		06:42	05:23	04:24	
	15:42	22	14:34 (4)	16:44	20	16:09 (2)	17:50		19:59	21:06	22:05	
4	08:59		14:12 (4)	08:15		15:48 (2)	07:05		06:39	05:20	04:23	
	15:43	23	14:35 (4)	16:47	23	16:11 (2)	17:53		20:01	21:08	22:07	
5	08:59		14:13 (4)	08:12		15:48 (2)	07:03		06:36	05:18	04:22	
	15:45	22	14:35 (4)	16:49	26	16:14 (2)	17:55		20:04	21:10	22:08	
6	08:58		14:13 (4)	08:10		15:47 (2)	07:00		06:34	05:15	04:21	
	15:46	22	14:35 (4)	16:52	27	16:14 (2)	17:57		20:06	21:12	22:10	
7	08:57		14:14 (4)	08:08		15:47 (2)	06:57		06:31	05:13	04:20	
	15:48	21	14:35 (4)	16:54	27	16:14 (2)	17:59		20:08	21:14	22:11	
8	08:57		14:15 (4)	08:06		15:46 (2)	06:54		06:28	05:11	04:19	
	15:49	20	14:35 (4)	16:56	28	16:14 (2)	18:02		20:10	21:16	22:12	
9	08:56		14:16 (4)	08:03		15:47 (2)	06:52		06:25	05:09	04:18	
	15:51	20	14:36 (4)	16:59	28	16:15 (2)	18:04		20:13	21:19	22:13	
10	08:55		14:17 (4)	08:01		15:46 (2)	06:49		06:23	05:06	04:18	
	15:53	19	14:36 (4)	17:01	29	16:15 (2)	18:06		20:15	21:21	22:14	
11	08:54		14:17 (4)	07:59		15:47 (2)	06:46		06:20	05:04	04:17	
	15:55	18	14:35 (4)	17:03	31	16:30 (3)	18:08		20:17	21:23	22:15	
12	08:53		14:18 (4)	07:56		15:47 (2)	06:43		06:17	05:02	04:17	
	15:57	17	14:35 (4)	17:06	33	16:32 (3)	18:11	2	17:42 (1)	20:19	21:25	
13	08:52		14:19 (4)	07:54		15:48 (2)	06:41		17:38 (1)	06:14	05:00	
	15:58	15	14:34 (4)	17:08	36	16:35 (3)	18:13	6	17:44 (1)	20:21	21:27	
14	08:51		14:21 (4)	07:52		15:48 (2)	06:38		17:37 (1)	06:12	05:02	
	16:00	13	14:34 (4)	17:11	38	16:38 (3)	18:15	9	17:46 (1)	20:24	21:29	
15	08:49		14:22 (4)	07:49		15:48 (2)	06:35		17:37 (1)	06:09	05:00	
	16:02	13	15:20 (14)	17:13	39	16:40 (3)	18:17	11	17:48 (1)	20:26	21:31	
16	08:48		14:25 (4)	07:47		15:50 (2)	06:32		17:36 (1)	06:06	05:04	
	16:04	10	15:23 (14)	17:15	39	16:43 (3)	18:20	14	17:50 (1)	20:28	21:33	
17	08:47		15:18 (14)	07:44		15:51 (2)	06:29		17:37 (1)	06:04	05:01	
	16:06	7	15:25 (14)	17:18	36	16:43 (3)	18:22	16	17:53 (1)	20:30	21:35	
18	08:45		15:18 (14)	07:42		15:54 (2)	06:27		17:37 (1)	06:01	05:00	
	16:08	9	15:27 (14)	17:20	31	16:43 (3)	18:24	16	17:53 (1)	20:32	21:37	
19	08:44		15:19 (14)	07:39		15:56 (2)	06:24		17:38 (1)	05:58	05:00	
	16:10	11	15:30 (14)	17:22	24	16:42 (3)	18:26	13	17:51 (1)	20:35	21:39	
20	08:42		15:19 (14)	07:37		16:29 (3)	06:21		17:39 (1)	05:56	05:00	
	16:13	13	15:32 (14)	17:25	11	16:40 (3)	18:28	10	17:49 (1)	20:37	21:41	
21	08:41		15:19 (14)	07:34		16:33 (3)	06:18		05:53	04:44	04:15	
	16:15	16	15:35 (14)	17:27	3	16:36 (3)	18:31		20:39	21:43	22:21	
22	08:39		15:20 (14)	07:32		06:16			05:50	04:42	04:15	
	16:17	17	15:37 (14)	17:29		18:33			20:41	21:45	22:21	
23	08:38		15:20 (14)	07:29		06:13			05:48	04:40	04:15	
	16:19	18	15:38 (14)	17:32		18:35			20:43	21:47	22:22	
24	08:36		15:21 (14)	07:26		06:10			05:45	04:39	04:15	
	16:21	17	15:38 (14)	17:34		18:37			20:46	21:49	22:22	
25	08:34		15:21 (14)	07:24		06:07			05:43	04:37	04:16	
	16:24	17	15:38 (14)	17:36		18:39			20:48	21:51	22:22	
26	08:32		15:22 (14)	07:21		06:04			05:40	04:35	04:16	
	16:26	16	15:38 (14)	17:39		18:42			20:50	21:53	22:21	
27	08:31		15:23 (14)	07:19		06:02			05:37	04:34	04:17	
	16:28	14	15:37 (14)	17:41		18:44			20:52	21:54	22:21	
28	08:29		15:24 (14)	07:16		05:59			05:35	04:32	04:17	
	16:30	12	15:36 (14)	17:43		18:46			20:55	21:56	22:21	
29	08:27		15:27 (14)			06:56			05:32	04:31	04:18	
	16:33	7	15:34 (14)			19:48			20:57	21:58	22:21	
30	08:25		15:54 (2)			06:53			05:30	04:29	04:19	
	16:35	4	15:58 (2)			19:50			20:59	21:59	22:20	
31	08:23		15:52 (2)			06:50				04:28		
	16:37	9	16:01 (2)			19:53				22:01		
Potential sun hours	227			262		365			429	515	539	
Total, worst case	489			559		97						
Sun reduction	0.11			0.19		0.40						
Oper. time red.	1.00			1.00		1.00						
Wind dir. red.	1.00			1.00		1.00						
Total reduction	0.11			0.19		0.40						
Total, real	53			109		39						

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Dravas - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (449)
Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) []

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
0.80 1.82 4.75 6.09 9.67 10.05 8.16 7.72 5.94 2.93 0.63 0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	July	August	September	October	November	December	
1	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	18:18 (1) 18:22 (1)	07:27 15:16 (2)	08:33 13:59 (4)
2	04:21 22:19	05:11 21:33	06:17 20:14	07:20 18:50	16:32 16:29	28 29	15:44 (2) 15:16 (2) 15:36 14:18 (4)
3	04:21 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	28	15:16 (2) 15:44 (2) 15:35 14:19 (4)
4	04:22 22:18	05:15 21:29	06:21 20:09	07:25 18:45	07:34 16:25	28	15:16 (2) 15:44 (2) 15:34 14:19 (4)
5	04:24 22:17	05:17 21:26	06:23 20:06	07:27 18:42	07:37 16:23	27	15:16 (2) 15:43 (2) 15:33 14:20 (4)
6	04:25 22:16	05:19 21:24	06:25 20:03	07:29 18:39	07:39 16:20	26	15:17 (2) 15:43 (2) 15:32 14:21 (4)
7	04:26 22:16	05:21 21:22	06:27 20:01	07:31 18:37	07:41 16:18	24	15:18 (2) 15:42 (2) 15:32 14:22 (4)
8	04:27 22:15	05:23 21:19	06:29 19:58	07:33 18:34	07:44 16:16	20	15:19 (2) 15:39 (2) 15:31 14:23 (4)
9	04:28 22:14	05:26 21:17	06:32 19:55	07:36 18:31	07:46 16:14	17	15:20 (2) 15:37 (2) 15:31 14:23 (4)
10	04:30 22:13	05:28 21:14	06:34 19:52	07:38 18:28	07:48 16:12	13	15:21 (2) 15:34 (2) 15:30 14:24 (4)
11	04:31 22:11	05:30 21:12	06:36 19:49	07:40 18:26	07:50 16:10	9	15:23 (2) 15:32 (2) 15:30 14:24 (4)
12	04:33 22:10	05:32 21:10	06:38 19:47	07:42 18:23	07:53 16:07	4	15:26 (2) 15:30 (2) 15:29 14:25 (4)
13	04:34 22:09	05:34 21:07	06:40 19:44	07:44 18:20	07:55 16:05	8	14:58 (14) 15:06 (14) 15:29 14:25 (4)
14	04:36 22:08	05:36 21:05	06:42 19:41	07:47 18:18	07:57 16:03	12	14:57 (14) 15:09 (14) 15:29 14:25 (4)
15	04:37 22:06	05:38 21:02	06:44 19:38	07:49 18:15	07:59 16:02	13	14:56 (14) 15:09 (14) 15:29 14:25 (4)
16	04:39 22:05	05:40 21:00	06:46 19:35	07:51 18:12	08:02 16:00	16	14:55 (14) 15:11 (14) 15:29 14:26 (4)
17	04:40 22:03	05:43 20:57	06:48 19:33	07:53 18:10	08:04 15:58	17	14:54 (14) 15:11 (14) 15:29 14:26 (4)
18	04:42 22:02	05:45 20:55	06:51 19:30	07:55 18:07	08:06 15:56	17	14:55 (14) 15:12 (14) 15:29 14:27 (4)
19	04:44 22:00	05:47 20:52	06:53 19:27	07:58 18:04	08:08 15:54	18	14:54 (14) 15:12 (14) 15:29 14:28 (4)
20	04:46 21:58	05:49 20:49	06:55 19:24	08:00 18:02	08:10 15:52	17	14:55 (14) 15:12 (14) 15:29 14:28 (4)
21	04:47 21:57	05:51 20:47	06:57 19:21	08:02 17:59	17:02 (3) 17:08 (3)	16	14:54 (14) 15:10 (14) 15:30 14:28 (4)
22	04:49 21:55	05:53 20:44	06:59 19:18	08:04 17:57	16:59 (3) 17:10 (3)	15	14:55 (14) 15:09 (14) 15:30 14:29 (4)
23	04:51 21:53	05:55 20:41	07:01 19:16	18:25 (1) 18:33 (1)	16:25 (2) 17:12 (3)	14 11	14:55 (14) 15:06 (14) 15:31 14:29 (4)
24	04:53 21:51	05:58 20:39	07:03 19:13	18:22 (1) 18:34 (1)	08:09 17:13 (3)	15 9	14:56 (14) 15:05 (14) 15:31 14:30 (4)
25	04:55 21:49	06:00 20:36	07:05 19:10	18:20 (1) 18:35 (1)	07:11 16:49	38	14:56 (14) 15:03 (14) 15:32 14:31 (4)
26	04:57 21:47	06:02 20:33	07:08 19:07	18:19 (1) 18:36 (1)	07:14 16:46	40	14:04 (4) 15:01 (14) 15:33 14:31 (4)
27	04:59 21:46	06:04 20:31	07:10 19:04	18:18 (1) 18:33 (1)	07:16 16:44	38	14:01 (4) 14:59 (14) 15:34 14:32 (4)
28	05:01 21:44	06:06 20:28	07:12 19:02	18:18 (1) 18:30 (1)	07:18 16:41	37	15:17 (2) 16:06 (3) 15:41 14:32 (4)
29	05:03 21:41	06:08 20:25	07:14 18:59	18:17 (1) 18:27 (1)	07:20 16:39	35	15:17 (2) 16:04 (3) 15:39 14:32 (4)
30	05:05 21:39	06:10 20:23	07:16 18:56	18:18 (1) 18:25 (1)	07:23 16:37	33	15:16 (2) 16:01 (3) 15:38 14:33 (4)
31	05:07 21:37	06:13 20:20		07:25 16:34	15:16 (2) 15:59 (3)	16	09:01 14:16 (4) 15:37 14:33 (4)
Potential sun hours	538	474	386	321	241		207
Total, worst case			96	333	494		705
Sun reduction			0.46	0.28	0.08		0.06
Oper. time red.			1.00	1.00	1.00		1.00
Wind dir. red.			1.00	1.00	1.00		1.00
Total reduction			0.46	0.28	0.08		0.06
Total, real			44	94	39		43

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Last time (hh:mm) with flicker	(WTG causing flicker last time)
	Minutes with flicker		

Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Dzelzelš 162. km - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (781)
Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March		April		May		June	
1	09:00	08:21	07:14		06:48	07:52 (7)	05:28	05:59 (9)	04:27	05:08 (5)
	15:40	16:40	17:46		19:55	44 08:36 (7)	21:01	21 06:20 (9)	22:03	53 06:16 (6)
2	09:00	08:19	07:11		06:45	07:52 (7)	05:25	05:59 (9)	04:26	05:09 (5)
	15:41	16:42	17:48		19:57	44 08:36 (7)	21:04	21 06:20 (9)	22:04	52 06:16 (6)
3	09:00	08:17	07:08		06:42	07:51 (7)	05:23	05:58 (9)	04:25	05:10 (5)
	15:42	16:45	17:51		20:00	44 08:35 (7)	21:06	21 06:19 (9)	22:06	51 06:17 (6)
4	08:59	08:15	07:06		06:40	07:52 (7)	05:21	05:59 (9)	04:24	05:10 (5)
	15:44	16:47	17:53		20:02	43 08:35 (7)	21:08	20 06:19 (9)	22:07	51 06:17 (6)
5	08:59	08:13	07:03		06:37	07:52 (7)	05:18	05:56 (6)	04:22	05:10 (5)
	15:45	16:50	17:55		20:04	42 08:34 (7)	21:10	22 06:18 (9)	22:08	50 06:16 (6)
6	08:58	08:10	07:00		06:34	07:02 (8)	05:16	05:53 (6)	04:21	05:10 (5)
	15:47	16:52	17:57		20:06	47 08:33 (7)	21:12	25 06:18 (9)	22:10	49 06:16 (6)
7	08:57	08:08	06:57		06:31	06:58 (8)	05:14	05:51 (6)	04:21	05:10 (5)
	15:48	16:54	18:00		20:08	52 08:31 (7)	21:15	26 06:17 (9)	22:11	47 06:15 (6)
8	08:57	08:06	06:55		06:28	06:56 (8)	05:11	05:50 (6)	04:20	05:11 (5)
	15:50	16:57	18:02		20:11	56 08:31 (7)	21:17	26 06:16 (9)	22:12	47 06:16 (6)
9	08:56	08:04	06:52		06:26	06:54 (8)	05:09	05:48 (6)	04:19	05:11 (5)
	15:52	16:59	18:04		20:13	55 08:29 (7)	21:19	27 06:15 (9)	22:13	46 06:15 (6)
10	08:55	08:01	06:49		06:23	06:52 (8)	05:07	05:46 (6)	04:18	05:12 (5)
	15:53	17:01	18:06		20:15	56 08:27 (7)	21:21	27 06:13 (6)	22:14	45 06:16 (6)
11	08:54	07:59	06:46		06:20	06:52 (8)	05:04	05:47 (6)	04:18	05:11 (5)
	15:55	17:04	18:09		20:17	54 08:26 (7)	21:23	28 06:15 (6)	22:15	45 06:15 (6)
12	08:53	07:57	06:44		06:17	06:51 (8)	05:02	05:46 (6)	04:17	05:12 (5)
	15:57	17:06	18:11		20:19	51 08:23 (7)	21:25	30 06:16 (6)	22:16	43 06:15 (6)
13	08:52	07:54	06:41		06:15	06:50 (8)	05:00	05:45 (6)	04:16	05:13 (5)
	15:59	17:09	18:13		20:22	48 08:20 (7)	21:27	31 06:16 (6)	22:17	42 06:15 (6)
14	08:51	07:52	06:38		06:12	06:50 (8)	04:58	05:45 (6)	04:16	05:12 (5)
	16:01	17:11	18:15		20:24	42 08:18 (7)	21:29	32 06:17 (6)	22:18	43 06:15 (6)
15	08:50	07:49	06:35		06:09	06:49 (8)	04:56	05:44 (6)	04:16	05:13 (5)
	16:03	17:13	18:18		20:26	31 08:11 (7)	21:31	33 06:17 (6)	22:19	41 06:15 (6)
16	08:48	07:47	06:33		06:07	06:48 (8)	04:54	05:43 (6)	04:15	05:13 (5)
	16:05	17:16	18:20		20:28	27 07:15 (8)	21:34	34 06:17 (6)	22:19	41 06:15 (6)
17	08:47	07:45	06:30		06:04	06:49 (8)	04:52	05:43 (6)	04:15	05:14 (5)
	16:07	17:18	18:22		20:30	26 07:15 (8)	21:36	34 06:17 (6)	22:20	40 06:15 (6)
18	08:46	07:42	06:27	07:13 (7)	06:01	06:49 (8)	04:50	05:44 (6)	04:15	05:14 (5)
	16:09	17:20	18:24	12 07:25 (7)	20:33	25 07:14 (8)	21:38	34 06:18 (6)	22:20	40 06:15 (6)
19	08:44	07:40	06:24	07:08 (7)	05:59	06:50 (8)	04:48	05:21 (5)	04:15	05:14 (5)
	16:11	17:23	18:27	20 07:28 (7)	20:35	24 07:14 (8)	21:40	38 06:18 (6)	22:21	39 06:15 (6)
20	08:43	07:37	06:21	07:05 (7)	05:56	06:50 (8)	04:46	05:19 (5)	04:15	05:14 (5)
	16:13	17:25	18:29	25 07:30 (7)	20:37	22 07:12 (8)	21:42	40 06:17 (6)	22:21	39 06:15 (6)
21	08:41	07:34	06:19	06:45 (10)	05:53	06:51 (8)	04:44	05:18 (5)	04:15	05:14 (5)
	16:15	17:27	18:31	33 07:33 (7)	20:39	20 07:11 (8)	21:43	44 06:18 (6)	22:21	39 06:15 (6)
22	08:40	07:32	06:16	06:42 (10)	05:51	06:52 (8)	04:42	05:16 (5)	04:15	05:14 (5)
	16:17	17:30	18:33	40 07:34 (7)	20:42	17 07:09 (8)	21:45	46 06:18 (6)	22:22	39 06:15 (6)
23	08:38	07:29	06:13	06:39 (10)	05:48	06:54 (8)	04:41	05:15 (5)	04:16	05:15 (5)
	16:20	17:32	18:35	47 07:35 (7)	20:44	13 07:07 (8)	21:47	48 06:18 (6)	22:22	39 06:16 (6)
24	08:36	07:27	06:10	06:36 (10)	05:46	06:56 (8)	04:39	05:13 (5)	04:16	05:15 (5)
	16:22	17:34	18:38	51 07:35 (7)	20:46	8 07:04 (8)	21:49	51 06:18 (6)	22:22	39 06:16 (6)
25	08:34	07:24	06:07	06:33 (10)	05:43	06:11 (9)	04:37	05:12 (5)	04:16	05:15 (5)
	16:24	17:37	18:40	57 07:36 (7)	20:48	5 06:16 (9)	21:51	52 06:18 (6)	22:22	40 06:16 (6)
26	08:33	07:22	06:05	06:32 (10)	05:40	06:08 (9)	04:36	05:11 (5)	04:17	05:16 (5)
	16:26	17:39	18:42	59 07:37 (7)	20:50	9 06:17 (9)	21:53	53 06:18 (6)	22:22	40 06:17 (6)
27	08:31	07:19	06:02	06:32 (10)	05:38	06:06 (9)	04:34	05:09 (5)	04:17	05:15 (5)
	16:29	17:41	18:44	59 07:37 (7)	20:53	12 06:18 (9)	21:54	54 06:17 (6)	22:21	42 06:17 (6)
28	08:29	07:16	05:59	06:32 (10)	05:35	06:04 (9)	04:33	05:09 (5)	04:18	05:16 (5)
	16:31	17:44	18:46	59 07:37 (7)	20:55	15 06:19 (9)	21:56	55 06:18 (6)	22:21	41 06:18 (6)
29	08:27		06:56	07:33 (10)	05:33	06:01 (9)	04:31	05:09 (5)	04:19	05:16 (5)
	16:33		19:49	58 08:37 (7)	20:57	18 06:19 (9)	21:58	55 06:18 (6)	22:21	43 06:19 (6)
30	08:25		06:53	07:34 (10)	05:30	05:59 (9)	04:30	05:09 (5)	04:19	05:15 (5)
	16:35		19:51	55 08:36 (7)	20:59	20 06:19 (9)	22:00	54 06:18 (6)	22:21	44 06:18 (6)
31	08:23		06:51	07:37 (10)			04:28	05:08 (5)		
	16:38		19:53	49 08:37 (7)			22:01	55 06:17 (6)		
Potential sun hours	227	262	365		429		515		539	
Total, worst case			624		970		1137		1310	
Sun reduction			0.40		0.43		0.58		0.56	
Oper. time red.			1.00		1.00		1.00		1.00	
Wind dir. red.			1.00		1.00		1.00		1.00	
Total reduction			0.40		0.43		0.58		0.56	
Total, real			251		413		661		733	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Dzelzelš 162. km - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (781)
 Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

		July		August		September		October	November	December		
1	04:20		05:16 (5)	05:09		05:56 (6)	06:15	06:51 (8)	07:19	07:28	08:33	
	22:20	44	06:19 (6)	21:35	30	06:26 (6)	20:17	54	08:25 (7)	18:54	16:32	15:37
2	04:21		05:16 (5)	05:11		05:57 (6)	06:17		06:51 (8)	07:21	07:30	08:35
	22:20	46	06:20 (6)	21:33	28	06:25 (6)	20:15	56	08:26 (7)	18:51	16:30	15:36
3	04:22		05:16 (5)	05:13		05:57 (6)	06:19		06:52 (8)	07:23	07:32	08:37
	22:19	46	06:20 (6)	21:31	26	06:23 (6)	20:12	55	08:27 (7)	18:48	16:27	15:35
4	04:23		05:16 (5)	05:15		05:58 (6)	06:21		06:53 (8)	07:25	07:35	08:38
	22:18	47	06:21 (6)	21:29	27	06:25 (9)	20:09	56	08:28 (7)	18:45	16:25	15:34
5	04:24		05:16 (5)	05:18		05:59 (6)	06:23		06:55 (8)	07:27	07:37	08:40
	22:17	49	06:22 (6)	21:26	27	06:26 (9)	20:06	52	08:28 (7)	18:42	16:23	15:34
6	04:25		05:16 (5)	05:20		06:01 (6)	06:26		06:58 (8)	07:29	07:39	08:42
	22:17	49	06:22 (6)	21:24	26	06:27 (9)	20:04	47	08:29 (7)	18:40	16:21	15:33
7	04:26		05:16 (5)	05:22		06:03 (6)	06:28		07:47 (7)	07:31	07:41	08:43
	22:16	50	06:23 (6)	21:22	24	06:27 (9)	20:01	42	08:29 (7)	18:37	16:18	15:32
8	04:28		05:16 (5)	05:24		06:07 (6)	06:30		07:46 (7)	07:34	07:44	08:45
	22:15	50	06:23 (6)	21:19	21	06:28 (9)	19:58	43	08:29 (7)	18:34	16:16	15:31
9	04:29		05:16 (5)	05:26		06:08 (9)	06:32		07:46 (7)	07:36	07:46	08:46
	22:14	51	06:23 (6)	21:17	20	06:28 (9)	19:55	43	08:29 (7)	18:31	16:14	15:31
10	04:30		05:16 (5)	05:28		06:07 (9)	06:34		07:45 (7)	07:38	07:48	08:47
	22:13	52	06:24 (6)	21:15	21	06:28 (9)	19:52	44	08:29 (7)	18:29	16:12	15:30
11	04:32		05:17 (5)	05:30		06:07 (9)	06:36		07:44 (7)	07:40	07:51	08:49
	22:12	53	06:25 (6)	21:12	21	06:28 (9)	19:50	45	08:29 (7)	18:26	16:10	15:30
12	04:33		05:17 (5)	05:32		06:07 (9)	06:38		07:29 (10)	07:42	07:53	08:50
	22:10	53	06:25 (6)	21:10	21	06:28 (9)	19:47	47	08:28 (7)	18:23	16:08	15:30
13	04:35		05:17 (5)	05:34		06:08 (9)	06:40		07:25 (10)	07:45	07:55	08:51
	22:09	54	06:25 (6)	21:07	20	06:28 (9)	19:44	55	08:28 (7)	18:21	16:06	15:29
14	04:36		05:18 (5)	05:37		06:10 (9)	06:42		07:23 (10)	07:47	07:57	08:52
	22:08	54	06:26 (6)	21:05	17	06:27 (9)	19:41	58	08:27 (7)	18:18	16:04	15:29
15	04:38		05:17 (5)	05:39		06:12 (9)	06:45		07:22 (10)	07:49	08:00	08:54
	22:06	55	06:26 (6)	21:02	15	06:27 (9)	19:38	59	08:26 (7)	18:15	16:02	15:29
16	04:39		05:18 (5)	05:41		06:14 (9)	06:47		07:21 (10)	07:51	08:02	08:55
	22:05	55	06:27 (6)	21:00	12	06:26 (9)	19:36	60	08:26 (7)	18:13	16:00	15:29
17	04:41		05:19 (5)	05:43		06:16 (9)	06:49		07:20 (10)	07:53	08:04	08:55
	22:03	54	06:27 (6)	20:57	8	06:24 (9)	19:33	59	08:25 (7)	18:10	15:58	15:29
18	04:43		05:21 (5)	05:45		06:18 (9)	06:51		07:20 (10)	07:56	08:06	08:56
	22:02	52	06:28 (6)	20:55	4	06:22 (9)	19:30	56	08:23 (7)	18:07	15:56	15:29
19	04:44		05:22 (5)	05:47		07:02 (8)	06:53		07:23 (10)	07:58	08:09	08:57
	22:00	51	06:27 (6)	20:52	9	07:11 (8)	19:27	53	08:23 (7)	18:05	15:55	15:29
20	04:46		05:24 (5)	05:49		06:59 (8)	06:55		07:25 (10)	08:00	08:11	08:58
	21:59	50	06:28 (6)	20:50	14	07:13 (8)	19:24	48	08:22 (7)	18:02	15:53	15:30
21	04:48		05:25 (5)	05:52		06:57 (8)	06:57		07:27 (10)	08:02	08:13	08:59
	21:57	48	06:28 (6)	20:47	18	07:15 (8)	19:22	41	08:20 (7)	17:59	15:51	15:30
22	04:50		05:27 (5)	05:54		06:55 (8)	06:59		07:29 (10)	08:05	08:15	08:59
	21:55	45	06:28 (6)	20:44	21	07:16 (8)	19:19	35	08:18 (7)	17:57	15:50	15:31
23	04:52		05:29 (5)	05:56		06:54 (8)	07:01		07:49 (7)	08:07	08:17	09:00
	21:53	42	06:28 (6)	20:42	23	07:17 (8)	19:16	27	08:16 (7)	17:54	15:48	15:31
24	04:53		05:30 (5)	05:58		06:53 (8)	07:04		07:51 (7)	08:09	08:19	09:00
	21:51	40	06:28 (6)	20:39	24	07:17 (8)	19:13	22	08:13 (7)	17:52	15:46	15:32
25	04:55		05:32 (5)	06:00		06:52 (8)	07:06		07:54 (7)	07:12	08:21	09:00
	21:50	37	06:28 (6)	20:36	26	07:18 (8)	19:10	15	08:09 (7)	16:49	15:45	15:32
26	04:57		05:34 (6)	06:02		06:52 (8)	07:08			07:14	08:23	09:01
	21:48	34	06:28 (6)	20:34	26	07:18 (8)	19:07			16:47	15:44	15:33
27	04:59		05:34 (6)	06:04		06:51 (8)	07:10			07:16	08:25	09:01
	21:46	34	06:28 (6)	20:31	27	07:18 (8)	19:05			16:44	15:42	15:34
28	05:01		05:34 (6)	06:06		06:51 (8)	07:12			07:18	08:27	09:01
	21:44	33	06:27 (6)	20:28	33	08:14 (7)	19:02			16:42	15:41	15:35
29	05:03		05:34 (6)	06:09		06:50 (8)	07:14			07:21	08:29	09:01
	21:42	33	06:27 (6)	20:26	44	08:19 (7)	18:59			16:39	15:40	15:36
30	05:05		05:35 (6)	06:11		06:50 (8)	07:16			07:23	08:31	09:01
	21:40	32	06:27 (6)	20:23	49	08:21 (7)	18:56			16:37	15:39	15:37
31	05:07		05:36 (6)	06:13		06:50 (8)				07:25		09:01
	21:37	30	06:26 (6)	20:20	52	08:23 (7)				16:34		15:38
Potential sun hours	538			474			386		321		241	207
Total, worst case		1423			734			1172				
Sun reduction		0.47			0.50			0.46				
Oper. time red.		1.00			1.00			1.00				
Wind dir. red.		1.00			1.00			1.00				
Total reduction		0.47			0.50			0.46				
Total, real		669			370			542				

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa
Assumptions for shadow calculations

Shadow receptor: Dzeni - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (589)
Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January		February		March		April		May	June
1	09:00	14:50 (12)	08:21	15:52 (14)	07:13	16:33 (2)	06:48	05:27	04:27	
	15:39	3	14:53 (12)	16:40	11	16:03 (14)	17:46	25	17:03 (3)	19:55
2	09:00	14:50 (12)	08:19	15:53 (14)	07:11	16:34 (2)	06:45	05:25	04:25	
	15:41	4	14:54 (12)	16:42	13	16:06 (14)	17:48	16	16:50 (2)	19:57
3	09:00	14:51 (12)	08:17	15:54 (14)	07:08	16:36 (2)	06:42	05:23	04:24	
	15:42	5	14:56 (12)	16:44	15	16:09 (14)	17:50	11	16:47 (2)	19:59
4	08:59	14:51 (12)	08:15	15:53 (14)	07:05		06:39	05:20	04:23	
	15:43	7	14:58 (12)	16:47	18	16:11 (14)	17:53	20:01	21:08	22:07
5	08:59	14:51 (12)	08:12	15:54 (14)	07:03		06:36	05:18	04:22	
	15:45	8	14:59 (4)	16:49	17	16:11 (14)	17:55	20:04	21:10	22:08
6	08:58	14:51 (12)	08:10	15:55 (14)	07:00		06:34	05:15	04:21	
	15:46	10	15:01 (4)	16:52	14	16:09 (14)	17:57	20:06	21:12	22:09
7	08:57	14:52 (12)	08:08	15:56 (14)	06:57		06:31	05:13	04:20	
	15:48	11	15:03 (4)	16:54	13	16:09 (14)	17:59	20:08	21:14	22:11
8	08:57	14:52 (12)	08:06	15:57 (14)	06:54		06:28	05:11	04:19	
	15:49	13	15:05 (4)	16:56	10	16:07 (14)	18:02	20:10	21:16	22:12
9	08:56	14:53 (12)	08:03	16:02 (14)	06:52		06:25	05:09	04:18	
	15:51	14	15:07 (4)	16:59	1	16:03 (14)	18:04	20:12	21:19	22:13
10	08:55	14:53 (12)	08:01	16:03 (14)	06:49		06:23	05:06	04:18	
	15:53	16	15:09 (4)	17:01			18:06	20:15	21:21	22:14
11	08:54	14:53 (12)	07:59	16:04 (14)	06:46		06:20	05:04	04:17	
	15:55	18	15:11 (4)	17:03			20:17	21:23	22:15	
12	08:53	14:54 (12)	07:56	16:05 (14)	06:43		06:17	05:02	04:17	
	15:57	19	15:13 (4)	17:06			20:19	21:25	22:16	
13	08:52	14:54 (12)	07:54	16:06 (14)	06:41		06:14	05:00	04:16	
	15:58	21	15:15 (4)	17:08			20:21	21:27	22:17	
14	08:51	14:55 (12)	07:52	16:07 (14)	06:38		06:12	04:58	04:16	
	16:00	23	15:18 (4)	17:11			20:24	21:29	22:18	
15	08:49	14:56 (12)	07:49	16:08 (14)	06:35		06:09	04:56	04:15	
	16:02	24	15:20 (4)	17:13	2	16:40 (2)	18:17	20:26	21:31	22:18
16	08:48	14:57 (12)	07:47	16:09 (14)	06:32		06:06	04:53	04:15	
	16:04	24	15:21 (4)	17:15	7	16:43 (2)	18:20	20:28	21:33	22:19
17	08:47	14:58 (4)	07:44	16:10 (14)	06:29		06:04	04:51	04:15	
	16:06	23	15:21 (4)	17:18	11	16:45 (2)	18:22	20:30	21:35	22:20
18	08:45	14:58 (4)	07:42	16:11 (14)	06:27		06:01	04:50	04:15	
	16:08	23	15:21 (4)	17:20	15	16:47 (2)	18:24	20:32	21:37	22:20
19	08:44	14:58 (4)	07:39	16:12 (14)	06:24		17:56 (1)	05:58	04:48	04:15
	16:10	23	15:21 (4)	17:22	19	16:51 (2)	18:26	1	17:57 (1)	20:35
20	08:42	14:59 (4)	07:37	16:13 (14)	06:21		17:55 (1)	05:56	04:46	04:15
	16:13	23	15:22 (4)	17:25	22	16:53 (2)	18:28	4	17:59 (1)	20:37
21	08:41	14:59 (4)	07:34	16:14 (14)	06:18		17:54 (1)	05:53	04:44	04:15
	16:15	24	15:23 (4)	17:27	25	16:55 (3)	18:31	7	18:01 (1)	20:39
22	08:39	15:00 (4)	07:32	16:15 (14)	06:16		17:54 (1)	05:50	04:42	04:15
	16:17	23	15:23 (4)	17:29	28	16:58 (3)	18:33	9	18:03 (1)	20:41
23	08:38	15:01 (4)	07:29	16:16 (14)	06:13		17:54 (1)	05:48	04:40	04:15
	16:19	22	15:23 (4)	17:32	31	17:01 (3)	18:35	12	18:06 (1)	20:43
24	08:36	15:01 (4)	07:26	16:17 (14)	06:10		17:54 (1)	05:45	04:39	04:15
	16:21	21	15:22 (4)	17:34	34	17:03 (3)	18:37	14	18:08 (1)	20:46
25	08:34	15:02 (4)	07:24	16:18 (14)	06:07		17:55 (1)	05:43	04:37	04:16
	16:24	20	15:22 (4)	17:36	36	17:06 (3)	18:39	12	18:07 (1)	20:48
26	08:32	15:03 (4)	07:21	16:19 (14)	06:04		17:56 (1)	05:40	04:35	04:16
	16:26	19	15:22 (4)	17:39	38	17:08 (3)	18:42	9	18:05 (1)	20:50
27	08:31	15:04 (4)	07:19	16:20 (14)	06:02			05:37	04:34	04:17
	16:28	16	15:20 (4)	17:41	37	17:07 (3)	18:44		20:52	21:54
28	08:29	15:05 (4)	07:16	16:21 (14)	05:59			05:35	04:32	04:17
	16:30	14	15:19 (4)	17:43	34	17:05 (3)	18:46		20:55	21:56
29	08:27	15:07 (4)						05:32	04:31	04:18
	16:33	13	15:55 (14)					20:57	21:58	22:21
30	08:25	15:11 (4)						05:30	04:29	04:19
	16:35	9	15:58 (14)					20:59	21:59	22:20
31	08:23	15:53 (14)							04:28	
	16:37	8	16:01 (14)						22:01	
Potential sun hours	227		262		365		429	515	539	
Total, worst case	501		451		120					
Sun reduction	0.11		0.19		0.40					
Oper. time red.	1.00		1.00		1.00					
Wind dir. red.	1.00		1.00		1.00					
Total reduction	0.11		0.19		0.40					
Total, real	55		88		48					

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Dzeni - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (589)
Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	July	August	September	October	November	December
1	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:27 16:32	08:33 15:37 18
2	04:21 22:19	05:11 21:33	06:17 20:14	07:20 18:50	07:30 16:29 4	08:35 15:30 (14) 15:36 17
3	04:21 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27 10	08:36 15:27 (14) 15:35 14
4	04:22 22:18	05:15 21:28	06:21 20:09	07:25 18:45	07:34 16:25 13	08:38 15:26 (14) 15:34 13
5	04:24 22:17	05:17 21:26	06:23 20:06	07:27 18:42	07:37 16:23 15	08:40 15:24 (14) 15:33 11
6	04:25 22:16	05:19 21:24	06:25 20:03	07:29 18:39	07:39 16:20 16	08:41 15:24 (14) 15:32 10
7	04:26 22:16	05:21 21:22	06:27 20:01	07:31 18:37	07:41 16:18 17	08:43 15:24 (14) 15:32 9
8	04:27 22:15	05:23 21:19	06:29 19:58	07:33 18:34	07:43 16:16 16	08:44 15:23 (14) 15:31 7
9	04:28 22:14	05:26 21:17	06:32 19:55	07:36 18:31	07:46 16:14 13	08:46 15:24 (14) 15:31 5
10	04:30 22:12	05:28 21:14	06:34 19:52	07:38 18:28 7	07:48 17:13 (2) 16:12 11	08:47 15:23 (14) 15:30 4
11	04:31 22:11	05:30 21:12	06:36 19:49	07:40 18:26 13	07:50 17:09 (2) 16:10 8	08:49 15:24 (14) 15:30 3
12	04:33 22:10	05:32 21:10	06:38 19:47	07:42 18:23 18	07:53 17:06 (2) 16:07 9	08:50 14:42 (4) 15:29 2
13	04:34 22:09	05:34 21:07	06:40 19:44	07:44 18:20 30	07:55 17:05 (2) 16:05 13	08:51 14:39 (4) 15:27 (14) 15:29 1
14	04:36 22:07	05:36 21:05	06:42 19:41	07:47 18:18 35	07:57 17:03 (2) 16:03 14	08:52 14:38 (4) 15:29 1
15	04:37 22:06	05:38 21:02	06:44 19:38	07:49 18:15 37	07:59 17:02 (2) 16:02 17	08:53 14:36 (4) 15:29 17
16	04:39 22:05	05:40 21:00	06:46 19:35	07:51 18:12 37	08:02 17:02 (2) 16:00 19	08:54 14:36 (4) 15:29 19
17	04:40 22:03	05:43 20:57	06:48 19:33 7	07:53 18:46 (1) 18:10 35	08:04 17:01 (2) 15:58 20	08:55 14:35 (4) 15:29 20
18	04:42 22:02	05:45 20:54	06:51 19:30 11	07:55 18:43 (1) 18:07 33	08:06 17:01 (2) 15:56 21	08:56 14:35 (4) 15:29 21
19	04:44 22:00	05:47 20:52	06:53 19:27 14	07:58 18:41 (1) 18:04 30	08:08 17:01 (2) 15:54 23	08:57 14:34 (4) 15:29 23
20	04:46 21:58	05:49 20:49	06:55 19:24 13	08:00 18:40 (1) 18:02 27	08:10 17:01 (2) 15:52 23	08:58 14:35 (4) 15:29 23
21	04:47 21:57	05:51 20:47	06:57 19:21 11	08:02 18:39 (1) 17:59 25	08:13 17:01 (2) 15:51 23	08:58 14:35 (4) 15:30 23
22	04:49 21:55	05:53 20:44	06:59 19:18 8	08:04 18:40 (1) 17:56 21	08:15 17:01 (2) 15:49 24	08:59 14:35 (4) 15:30 24
23	04:51 21:53	05:55 20:41	07:01 19:16 5	08:07 18:40 (1) 17:54 17	08:17 17:03 (2) 15:48 23	08:59 14:35 (4) 15:31 23
24	04:53 21:51	05:58 20:39	07:03 19:13 2	08:09 18:40 (1) 17:51 14	08:19 17:03 (2) 15:46 23	09:00 14:35 (4) 15:31 23
25	04:55 21:49	06:00 20:36	07:05 19:10	07:11 16:49 10	08:21 16:05 (2) 15:45 23	09:00 14:36 (4) 15:32 23
26	04:57 21:47	06:02 20:33	07:08 19:07	07:14 16:46 6	08:23 16:06 (2) 15:43 23	09:00 14:36 (4) 15:33 23
27	04:59 21:45	06:04 20:31	07:10 19:04	07:16 16:44	08:25 15:42 24	09:01 14:35 (12) 15:34 24
28	05:01 21:43	06:06 20:28	07:12 19:02	07:18 16:41	08:27 15:41 22	09:01 14:36 (12) 15:35 22
29	05:03 21:41	06:08 20:25	07:14 18:59	07:20 16:39	08:29 15:39 21	09:01 14:35 (12) 15:35 21
30	05:05 21:39	06:10 20:23	07:16 18:56	07:23 16:37	08:31 15:38 20	09:01 14:35 (12) 15:37 1
31	05:07 21:37	06:13 20:20		07:25 16:34		09:00 14:50 (12) 15:38 1
Potential sun hours	538	474	386	321	241	207
Total, worst case			71	395	508	117
Sun reduction			0.46	0.28	0.08	0.06
Oper. time red.			1.00	1.00	1.00	1.00
Wind dir. red.			1.00	1.00	1.00	1.00
Total reduction			0.46	0.28	0.08	0.06
Total, real			33	112	40	7

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Darza iela 1 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (519)
Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:28 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
2	09:00 15:41	08:19 16:42	07:11 17:48	06:45 19:57	05:25 21:04	04:25 22:04	04:21 22:20	05:11 21:33	06:17 20:15	07:21 18:51	07:30 16:29	08:35 15:36
3	09:00 15:42	08:17 16:44	07:08 17:50	06:42 19:59	05:23 21:06	04:24 22:06	04:21 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:37 15:35
4	08:59 15:43	08:15 16:47	07:05 17:53	06:39 20:02	05:20 21:08	04:23 22:07	04:22 22:18	05:15 21:29	06:21 20:09	07:25 18:45	07:34 16:25	08:38 15:34
5	08:59 15:45	08:13 16:49	07:03 17:55	06:37 20:04	05:18 21:10	04:22 22:08	04:24 22:18	05:17 21:26	06:23 20:06	07:27 18:42	07:37 16:23	08:40 15:33
6	08:58 15:46	08:10 16:52	07:00 17:57	06:34 20:06	05:16 21:12	04:21 22:10	04:25 22:17	05:19 21:24	06:25 20:04	07:29 18:39	07:39 16:20	08:42 15:32
7	08:58 15:48	08:08 16:54	06:57 17:59	06:31 20:08	05:13 21:15	04:20 22:11	04:26 22:16	05:21 21:22	06:27 20:01	07:31 18:37	07:41 16:18	08:43 15:32
8	08:57 15:49	08:06 16:56	06:55 18:02	06:28 20:10	05:11 21:17	04:19 22:12	04:27 22:15	05:23 21:19	06:30 19:58	07:34 18:34	07:44 16:16	08:45 15:31
9	08:56 15:51	08:04 16:59	06:52 18:04	06:25 20:13	05:09 21:19	04:18 22:13	04:28 22:14	05:26 21:17	06:32 19:55	07:36 18:31	07:46 16:14	08:46 15:31
10	08:55 15:53	08:01 17:01	06:49 18:06	06:23 20:15	05:06 21:21	04:18 22:14	04:30 22:13	05:28 21:15	06:34 19:52	07:38 18:28	07:48 16:12	08:48 15:30
11	08:54 15:55	07:59 17:04	06:46 18:09	06:20 20:17	05:04 21:23	04:17 22:15	04:31 22:12	05:30 21:12	06:36 19:50	07:40 18:26	07:51 16:10	08:49 15:30
12	08:53 15:57	07:57 17:06	06:44 18:11	06:17 20:19	05:02 21:25	04:17 22:16	04:33 22:10	05:32 21:10	06:38 19:47	07:42 18:23	07:53 16:08	08:50 15:29
13	08:52 15:58	07:54 17:08	06:41 18:13	06:15 20:22	05:00 21:27	04:16 22:17	04:34 22:09	05:34 21:07	06:40 19:44	07:44 18:20	07:55 16:05	08:51 15:29
14	08:51 16:00	07:52 17:11	06:38 18:15	06:12 20:24	04:58 21:29	04:16 22:18	04:36 22:08	05:36 21:05	06:42 19:41	07:47 18:18	07:57 16:04	08:53 15:29
15	08:50 16:02	07:49 17:13	06:35 18:17	06:09 20:26	04:56 21:32	04:15 22:19	04:37 22:06	05:38 21:02	06:44 19:38	07:49 18:15	08:00 16:02	08:54 15:29
16	08:48 16:04	07:47 17:15	06:32 18:20	06:06 20:28	04:54 21:34	04:15 22:19	04:39 22:05	05:41 21:00	06:46 19:35	07:51 18:12	08:02 16:00	08:55 15:29
17	08:47 16:06	07:44 17:18	06:30 18:22	06:04 20:30	04:52 21:36	04:15 22:20	04:40 22:03	05:43 20:57	06:49 19:33	07:53 18:10	08:04 15:58	08:56 15:29
18	08:46 16:08	07:42 17:20	06:27 18:24	06:01 20:33	04:50 21:38	04:15 22:20	04:42 22:02	05:45 20:55	06:51 19:30	07:56 18:07	08:06 15:56	08:56 15:29
19	08:44 16:10	07:39 17:22	06:24 18:26	05:58 20:35	04:48 21:40	04:15 22:21	04:44 22:00	05:47 20:52	06:53 19:27	07:58 18:04	08:09 15:54	08:57 15:29
20	08:43 16:13	07:37 17:25	06:21 18:29	05:56 20:37	04:46 21:42	04:15 22:21	04:46 21:59	05:49 20:50	06:55 19:24	08:00 18:02	08:11 15:53	08:58 15:29
21	08:41 16:15	07:34 17:27	06:18 18:31	05:53 20:39	04:44 21:44	04:15 22:21	04:47 21:57	05:51 20:47	06:57 19:21	08:02 17:59	08:13 15:51	08:59 15:30
22	08:40 16:17	07:32 17:30	06:16 18:33	05:50 20:41	04:42 21:45	04:15 22:22	04:49 21:55	05:53 20:44	06:59 19:19	08:05 17:57	08:15 15:49	08:59 15:30
23	08:38 16:19	07:29 17:32	06:13 18:35	05:48 20:44	04:40 21:47	04:15 22:22	04:51 21:53	05:56 20:42	07:01 19:16	08:07 17:54	08:17 15:48	09:00 15:31
24	08:36 16:21	07:27 17:34	06:10 18:37	05:45 20:46	04:39 21:49	04:15 22:22	04:53 21:52	05:58 20:39	07:03 19:13	08:09 17:51	08:19 15:46	09:00 15:31
25	08:34 16:24	07:24 17:36	06:07 18:40	05:43 20:48	04:37 21:51	04:16 22:22	04:55 21:50	06:00 20:36	07:06 19:10	07:11 16:49	08:21 15:45	09:00 15:32
26	08:33 16:26	07:21 17:39	06:04 18:42	05:40 20:50	04:35 21:53	04:16 22:22	04:57 21:48	06:02 20:34	07:08 19:07	07:14 16:46	08:23 15:43	09:01 15:33
27	08:31 16:28	07:19 17:41	06:02 18:44	05:38 20:53	04:34 21:55	04:17 22:22	04:59 21:46	06:04 20:31	07:10 19:05	07:16 16:44	08:25 15:42	09:01 15:34
28	08:29 16:30	07:16 17:43	05:59 18:46	05:35 20:55	04:32 21:56	04:17 22:21	05:01 21:44	06:06 20:28	07:12 19:02	07:18 16:41	08:27 15:41	09:01 15:35
29	08:27 16:33		05:56 19:48	05:32 20:57	04:31 21:58	04:18 22:21	05:03 21:42	06:08 20:26	07:14 18:59	07:21 16:39	08:29 15:39	09:01 15:35
30	08:25 16:35		06:53 19:51	05:30 20:59	04:29 22:00	04:19 22:21	05:05 21:40	06:10 20:23	07:16 18:56	07:23 16:37	08:31 15:38	09:01 15:37
31	08:23 16:37		06:50 19:53		04:28 22:01		05:07 21:38	06:13 20:20		07:25 16:34		09:01 15:38
Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Darza iela 10 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (545)
 Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:28 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
2	09:00 15:41	08:19 16:42	07:11 17:48	06:45 19:57	05:25 21:04	04:25 22:04	04:21 22:20	05:11 21:33	06:17 20:15	07:21 18:51	07:30 16:29	08:35 15:36
3	09:00 15:42	08:17 16:45	07:08 17:50	06:42 19:59	05:23 21:06	04:24 22:06	04:21 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:37 15:35
4	08:59 15:43	08:15 16:47	07:05 17:53	06:39 20:02	05:20 21:08	04:23 22:07	04:22 22:18	05:15 21:29	06:21 20:09	07:25 18:45	07:34 16:25	08:38 15:34
5	08:59 15:45	08:13 16:49	07:03 17:55	06:37 20:04	05:18 21:10	04:22 22:08	04:24 22:18	05:17 21:26	06:23 20:06	07:27 18:42	07:37 16:23	08:40 15:33
6	08:58 15:46	08:10 16:52	07:00 17:57	06:34 20:06	05:16 21:12	04:21 22:10	04:25 22:17	05:19 21:24	06:25 20:04	07:29 18:39	07:39 16:20	08:42 15:32
7	08:58 15:48	08:08 16:54	06:57 17:59	06:31 20:08	05:13 21:15	04:20 22:11	04:26 22:16	05:21 21:22	06:27 20:01	07:31 18:37	07:41 16:18	08:43 15:32
8	08:57 15:49	08:06 16:56	06:55 18:02	06:28 20:10	05:11 21:17	04:19 22:12	04:27 22:15	05:24 21:19	06:30 19:58	07:34 18:34	07:44 16:16	08:45 15:31
9	08:56 15:51	08:04 16:59	06:52 18:04	06:25 20:13	05:09 21:19	04:18 22:13	04:28 22:14	05:26 21:17	06:32 19:55	07:36 18:31	07:46 16:14	08:46 15:31
10	08:55 15:53	08:01 17:01	06:49 18:06	06:23 20:15	05:06 21:21	04:18 22:14	04:30 22:13	05:28 21:15	06:34 19:52	07:38 18:28	07:48 16:12	08:48 15:30
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31	08:23 16:37		06:50 19:53		04:28 22:01		05:07 21:38	06:13 20:20		07:25 16:34		09:01 15:38
Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Darza iela 11 (94010030201001) - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (536)

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:28 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
2	09:00 15:41	08:19 16:42	07:11 17:48	06:45 19:57	05:25 21:04	04:25 22:04	04:21 22:20	05:11 21:33	06:17 20:15	07:21 18:51	07:30 16:29	08:35 15:36
3	09:00 15:42	08:17 16:45	07:08 17:50	06:42 19:59	05:23 21:06	04:24 22:06	04:21 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:37 15:35
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5	08:59 15:45	08:13 16:49	07:03 17:55	06:37 20:04	05:18 21:10	04:22 22:08	04:24 22:18	05:17 21:26	06:23 20:06	07:27 18:42	07:37 16:23	08:40 15:33
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31	08:23 16:37		05:50 19:53		04:28 22:01		05:07 21:37	06:13 20:20		07:25 16:34		09:01 15:38
Potential sun hours	227	262	365	429	515	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Darza iela 11 (94010030201005) - Shadow Receptor: 1.0 x 1.0 Azimuth: 3.1° Slope: 90.0° (571)

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:28 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
2	09:00 15:41	08:19 16:42	07:11 17:48	06:45 19:57	05:25 21:04	04:25 22:04	04:21 22:20	05:11 21:33	06:17 20:15	07:21 18:51	07:30 16:29	08:35 15:36
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26	08:33 16:26	07:21 17:39	06:04 18:42	05:40 20:50	04:35 21:53	04:16 22:22	04:57 21:48	06:02 20:34	07:08 19:07	07:14 16:46	08:23 15:43	09:01 15:33
27	08:31 16:28	07:19 17:41	06:02 18:44	05:38 20:53	04:34 21:55	04:17 22:22	04:59 21:46	06:04 20:31	07:10 19:05	07:16 16:44	08:25 15:42	09:01 15:34
28	08:29 16:30	07:16 17:43	05:59 18:46	05:35 20:55	04:32 21:56	04:17 22:21	05:01 21:44	06:06 20:28	07:12 19:02	07:18 16:42	08:27 15:41	09:01 15:35
29	08:27 16:33		05:56 19:48	05:33 20:57	04:31 21:58	04:18 22:21	05:03 21:42	06:08 20:26	07:14 18:59	07:21 16:39	08:29 15:39	09:01 15:36
30	08:25 16:35		05:53 19:51	05:30 20:59	04:29 22:00	04:19 22:21	05:05 21:40	06:10 20:23	07:16 18:56	07:23 16:37	08:31 15:38	09:01 15:37
31	08:23 16:37		05:50 19:53		04:28 22:01		05:07 21:37	06:13 20:20		07:25 16:34		09:01 15:38
Potential sun hours	227	262	365	429	515	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Darza iela 12 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (547)
 Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01	08:21	07:13	06:48	05:28	04:27	04:20	05:09	06:15	07:18	07:28	08:33
	15:39	16:40	17:46	19:55	21:01	22:03	22:20	21:35	20:17	18:53	16:32	15:37
2	09:00	08:19	07:11	06:45	05:25	04:25	04:21	05:11	06:17	07:21	07:30	08:35
	15:41	16:42	17:48	19:57	21:04	22:04	22:20	21:33	20:15	18:51	16:29	15:36
3	09:00	08:17	07:08	06:42	05:23	04:24	04:21	05:13	06:19	07:23	07:32	08:37
	15:42	16:45	17:50	19:59	21:06	22:06	22:19	21:31	20:12	18:48	16:27	15:35
4	08:59	08:15	07:05	06:39	05:20	04:23	04:22	05:15	06:21	07:25	07:34	08:38
	15:43	16:47	17:53	20:02	21:08	22:07	22:18	21:29	20:09	18:45	16:25	15:34
5	08:59	08:13	07:03	06:37	05:18	04:22	04:24	05:17	06:23	07:27	07:37	08:40
	15:45	16:49	17:55	20:04	21:10	22:08	22:18	21:26	20:06	18:42	16:23	15:33
6	08:58	08:10	07:00	06:34	05:16	04:21	04:25	05:19	06:25	07:29	07:39	08:42
	15:46	16:52	17:57	20:06	21:12	22:10	22:17	21:24	20:04	18:39	16:20	15:32
7	08:58	08:08	06:57	06:31	05:13	04:20	04:26	05:21	06:27	07:31	07:41	08:43
	15:48	16:54	17:59	20:08	21:15	22:11	22:16	21:22	20:01	18:37	16:18	15:32
8	08:57	08:06	06:55	06:28	05:11	04:19	04:27	05:24	06:30	07:34	07:44	08:45
	15:49	16:56	18:02	20:10	21:17	22:12	22:15	21:19	19:58	18:34	16:16	15:31
9	08:56	08:04	06:52	06:25	05:09	04:18	04:28	05:26	06:32	07:36	07:46	08:46
	15:51	16:59	18:04	20:13	21:19	22:13	22:14	21:17	19:55	18:31	16:14	15:31
10	08:55	08:01	06:49	06:23	05:06	04:18	04:30	05:28	06:34	07:38	07:48	08:48
	15:53	17:01	18:06	20:15	21:21	22:14	22:13	21:15	19:52	18:28	16:12	15:30
11	08:54	07:59	06:46	06:20	05:04	04:17	04:31	05:30	06:36	07:40	07:51	08:49
	15:55	17:04	18:09	20:17	21:23	22:15	22:12	21:12	19:50	18:26	16:10	15:30
12	08:53	07:57	06:44	06:17	05:02	04:17	04:33	05:32	06:38	07:42	07:53	08:50
	15:57	17:06	18:11	20:19	21:25	22:16	22:10	21:10	19:47	18:23	16:08	15:29
13	08:52	07:54	06:41	06:15	05:00	04:16	04:34	05:34	06:40	07:45	07:55	08:51
	15:58	17:08	18:13	20:22	21:27	22:17	22:09	21:07	19:44	18:20	16:06	15:29
14	08:51	07:52	06:38	06:12	04:58	04:16	04:36	05:36	06:42	07:47	07:57	08:53
	16:00	17:11	18:15	20:24	21:29	22:18	22:08	21:05	19:41	18:18	16:04	15:29
15	08:50	07:49	06:35	06:09	04:56	04:15	04:37	05:38	06:44	07:49	08:00	08:54
	16:02	17:13	18:17	20:26	21:32	22:19	22:06	21:02	19:38	18:15	16:02	15:29
16	08:48	07:47	06:32	06:06	04:54	04:15	04:39	05:41	06:46	07:51	08:02	08:55
	16:04	17:15	18:20	20:28	21:34	22:19	22:05	21:00	19:35	18:12	16:00	15:29
17	08:47	07:44	06:30	06:04	04:52	04:15	04:41	05:43	06:49	07:53	08:04	08:56
	16:06	17:18	18:22	20:30	21:36	22:20	22:03	20:57	19:33	18:10	15:58	15:29
18	08:46	07:42	06:27	06:01	04:50	04:15	04:42	05:45	06:51	07:56	08:06	08:56
	16:08	17:20	18:24	20:33	21:38	22:20	22:02	20:55	19:30	18:07	15:56	15:29
19	08:44	07:39	06:24	05:58	04:48	04:15	04:44	05:47	06:53	07:58	08:09	08:57
	16:11	17:22	18:26	20:35	21:40	22:21	22:00	20:52	19:27	18:04	15:54	15:29
20	08:43	07:37	06:21	05:56	04:46	04:15	04:46	05:49	06:55	08:00	08:11	08:58
	16:13	17:25	18:29	20:37	21:42	22:21	21:59	20:50	19:24	18:02	15:53	15:29
21	08:41	07:34	06:18	05:53	04:44	04:15	04:48	05:51	06:57	08:02	08:13	08:59
	16:15	17:27	18:31	20:39	21:44	22:21	21:57	20:47	19:21	17:59	15:51	15:30
22	08:40	07:32	06:16	05:50	04:42	04:15	04:49	05:53	06:59	08:05	08:15	08:59
	16:17	17:30	18:33	20:41	21:45	22:22	21:55	20:44	19:19	17:57	15:49	15:30
23	08:38	07:29	06:13	05:48	04:40	04:15	04:51	05:56	07:01	08:07	08:17	09:00
	16:19	17:32	18:35	20:44	21:47	22:22	21:53	20:42	19:16	17:54	15:48	15:31
24	08:36	07:27	06:10	05:45	04:39	04:15	04:53	05:58	07:03	08:09	08:19	09:00
	16:21	17:34	18:37	20:46	21:49	22:22	21:52	20:39	19:13	17:51	15:46	15:31
25	08:34	07:24	06:07	05:43	04:37	04:16	04:55	06:00	07:06	07:11	08:21	09:00
	16:24	17:37	18:40	20:48	21:51	22:22	21:50	20:36	19:10	16:49	15:45	15:32
26	08:33	07:21	06:04	05:40	04:35	04:16	04:57	06:02	07:08	07:14	08:23	09:01
	16:26	17:39	18:42	20:50	21:53	22:22	21:48	20:34	19:07	16:46	15:43	15:33
27	08:31	07:19	06:02	05:38	04:34	04:17	04:59	06:04	07:10	07:16	08:25	09:01
	16:28	17:41	18:44	20:53	21:55	22:22	21:46	20:31	19:05	16:44	15:42	15:34
28	08:29	07:16	05:59	05:35	04:32	04:17	05:01	06:06	07:12	07:18	08:27	09:01
	16:30	17:43	18:46	20:55	21:56	22:21	21:44	20:28	19:02	16:42	15:41	15:35
29	08:27		06:56	05:33	04:31	04:18	05:03	06:08	07:14	07:21	08:29	09:01
	16:33		19:48	20:57	21:58	22:21	21:42	20:26	18:59	16:39	15:39	15:36
30	08:25		06:53	05:30	04:29	04:19	05:05	06:10	07:16	07:23	08:31	09:01
	16:35		19:51	20:59	22:00	22:21	21:40	20:23	18:56	16:37	15:38	15:37
31	08:23		06:50		04:28		05:07	06:13		07:25		09:01
	16:37		19:53		22:01		21:38	20:20		16:34		15:38
Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Darza iela 13 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (516)
Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:28 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
2	09:00 15:41	08:19 16:42	07:11 17:48	06:45 19:57	05:25 21:04	04:25 22:04	04:21 22:20	05:11 21:33	06:17 20:15	07:21 18:51	07:30 16:29	08:35 15:36
3	09:00 15:42	08:17 16:45	07:08 17:50	06:42 19:59	05:23 21:06	04:24 22:06	04:21 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:37 15:35
4	08:59 15:43	08:15 16:47	07:05 17:53	06:39 20:02	05:20 21:08	04:23 22:07	04:22 22:18	05:15 21:29	06:21 20:09	07:25 18:45	07:34 16:25	08:38 15:34
5	08:59 15:45	08:13 16:49	07:03 17:55	06:37 20:04	05:18 21:10	04:22 22:08	04:24 22:18	05:17 21:26	06:23 20:06	07:27 18:42	07:37 16:23	08:40 15:33
6	08:58 15:46	08:10 16:52	07:00 17:57	06:34 20:06	05:16 21:12	04:21 22:10	04:25 22:17	05:19 21:24	06:25 20:04	07:29 18:39	07:39 16:20	08:42 15:32
7	08:58 15:48	08:08 16:54	06:57 17:59	06:31 20:08	05:13 21:15	04:20 22:11	04:26 22:16	05:21 21:22	06:27 20:01	07:31 18:37	07:41 16:18	08:43 15:32
8	08:57 15:49	08:06 16:56	06:55 18:02	06:28 20:10	05:11 21:17	04:19 22:12	04:27 22:15	05:24 21:19	06:30 19:58	07:34 18:34	07:44 16:16	08:45 15:31
9	08:56 15:51	08:04 16:59	06:52 18:04	06:25 20:13	05:09 21:19	04:18 22:13	04:28 22:14	05:26 21:17	06:32 19:55	07:36 18:31	07:46 16:14	08:46 15:31
10	08:55 15:53	08:01 17:01	06:49 18:06	06:23 20:15	05:06 21:21	04:18 22:14	04:30 22:13	05:28 21:15	06:34 19:52	07:38 18:28	07:48 16:12	08:48 15:30
11	08:54 15:55	07:59 17:04	06:46 18:09	06:20 20:17	05:04 21:23	04:17 22:15	04:31 22:12	05:30 21:12	06:36 19:50	07:40 18:26	07:51 16:10	08:49 15:30
12	08:53 15:57	07:57 17:06	06:44 18:11	06:17 20:19	05:02 21:25	04:17 22:16	04:33 22:10	05:32 21:19	06:38 19:47	07:42 18:23	07:53 16:08	08:50 15:29
13	08:52 15:58	07:54 17:08	06:41 18:13	06:15 20:22	05:00 21:27	04:16 22:17	04:34 22:09	05:34 21:07	06:40 19:44	07:45 18:20	07:55 16:06	08:51 15:29
14	08:51 16:00	07:52 17:11	06:38 18:15	06:12 20:24	04:58 21:29	04:16 22:18	04:36 22:08	05:36 21:05	06:42 19:41	07:47 18:18	07:57 16:04	08:53 15:29
15	08:50 16:02	07:49 17:13	06:35 18:17	06:09 20:26	04:56 21:32	04:15 22:19	04:37 22:06	05:38 21:02	06:44 19:38	07:49 18:15	08:00 16:02	08:54 15:29
16	08:48 16:04	07:47 17:15	06:32 18:20	06:06 20:28	04:54 21:34	04:15 22:19	04:39 22:05	05:41 21:00	06:46 19:35	07:51 18:12	08:02 16:00	08:55 15:29
17	08:47 16:06	07:44 17:18	06:30 18:22	06:04 20:30	04:52 21:36	04:15 22:20	04:41 22:03	05:43 20:57	06:49 19:33	07:53 18:10	08:04 15:58	08:56 15:29
18	08:46 16:08	07:42 17:20	06:27 18:24	06:01 20:33	04:50 21:38	04:15 22:20	04:42 22:02	05:45 20:55	06:51 19:30	07:56 18:07	08:06 15:56	08:56 15:29
19	08:44 16:11	07:39 17:22	06:24 18:26	05:58 20:35	04:48 21:40	04:15 22:21	04:44 22:00	05:47 20:52	06:53 19:27	07:58 18:04	08:09 15:54	08:57 15:29
20	08:43 16:13	07:37 17:25	06:21 18:29	05:56 20:37	04:46 21:42	04:15 22:21	04:46 21:59	05:49 20:50	06:55 19:24	08:00 18:02	08:11 15:53	08:58 15:29
21	08:41 16:15	07:34 17:27	06:18 18:31	05:53 20:39	04:44 21:44	04:15 22:21	04:48 21:57	05:51 20:47	06:57 19:21	08:02 17:59	08:13 15:51	08:59 15:30
22	08:40 16:17	07:32 17:30	06:16 18:33	05:50 20:41	04:42 21:45	04:15 22:22	04:49 21:55	05:53 20:44	06:59 19:19	08:05 17:57	08:15 15:49	08:59 15:30
23	08:38 16:19	07:29 17:32	06:13 18:35	05:48 20:44	04:40 21:47	04:15 22:22	04:51 21:53	05:56 20:42	07:01 19:16	08:07 17:54	08:17 15:48	09:00 15:31
24	08:36 16:21	07:27 17:34	06:10 18:37	05:45 20:46	04:39 21:49	04:15 22:22	04:53 21:52	05:58 20:39	07:03 19:13	08:09 17:51	08:19 15:46	09:00 15:31
25	08:34 16:24	07:24 17:37	06:07 18:40	05:43 20:48	04:37 21:51	04:16 22:22	04:55 21:50	06:00 20:36	07:06 19:10	07:11 16:49	08:21 15:45	09:00 15:32
26	08:33 16:26	07:21 17:39	06:04 18:42	05:40 20:50	04:35 21:53	04:16 22:22	04:57 21:48	06:02 20:34	07:08 19:07	07:14 16:46	08:23 15:43	09:01 15:33
27	08:31 16:28	07:19 17:41	06:02 18:44	05:38 20:53	04:34 21:55	04:17 22:22	04:59 21:46	06:04 20:31	07:10 19:05	07:16 16:44	08:25 15:42	09:01 15:34
28	08:29 16:30	07:16 17:43	05:59 18:46	05:35 20:55	04:32 21:56	04:17 22:21	05:01 21:44	06:06 20:28	07:12 19:02	07:18 16:42	08:27 15:41	09:01 15:35
29	08:27 16:33		05:56 19:48	05:33 20:57	04:31 21:58	04:18 22:21	05:03 21:42	06:08 20:26	07:14 18:59	07:21 16:39	08:29 15:39	09:01 15:36
30	08:25 16:35		05:53 19:51	05:30 20:59	04:29 22:00	04:19 22:21	05:05 21:40	06:10 20:23	07:16 18:56	07:23 16:37	08:31 15:38	09:01 15:37
31	08:23 16:37		05:50 19:53		04:28 22:01		05:07 21:37	06:13 20:20		07:25 16:34		09:01 15:38
Potential sun hours	227	262	365	429	515	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Darza iela 14 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (566)
Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:28 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
2	09:00 15:41	08:19 16:42	07:11 17:48	06:45 19:57	05:25 21:04	04:25 22:04	04:21 22:20	05:11 21:33	06:17 20:15	07:21 18:51	07:30 16:29	08:35 15:36
3	09:00 15:42	08:17 16:45	07:08 17:50	06:42 19:59	05:23 21:06	04:24 22:06	04:21 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:37 15:35
4	08:59 15:43	08:15 16:47	07:05 17:53	06:39 20:02	05:20 21:08	04:23 22:07	04:22 22:18	05:15 21:29	06:21 20:09	07:25 18:45	07:34 16:25	08:38 15:34
5	08:59 15:45	08:13 16:49	07:03 17:55	06:37 20:04	05:18 21:10	04:22 22:08	04:24 22:18	05:17 21:26	06:23 20:06	07:27 18:42	07:37 16:23	08:40 15:33
6	08:58 15:46	08:10 16:52	07:00 17:57	06:34 20:06	05:16 21:12	04:21 22:10	04:25 22:17	05:19 21:24	06:25 20:04	07:29 18:39	07:39 16:20	08:42 15:32
7	08:58 15:48	08:08 16:54	06:57 17:59	06:31 20:08	05:13 21:15	04:20 22:11	04:26 22:16	05:21 21:22	06:27 20:01	07:31 18:37	07:41 16:18	08:43 15:32
8	08:57 15:49	08:06 16:56	06:55 18:02	06:28 20:10	05:11 21:17	04:19 22:12	04:27 22:15	05:24 21:19	06:30 19:58	07:34 18:34	07:44 16:16	08:45 15:31
9	08:56 15:51	08:04 16:59	06:52 18:04	06:25 20:13	05:09 21:19	04:18 22:13	04:28 22:14	05:26 21:17	06:32 19:55	07:36 18:31	07:46 16:14	08:46 15:31
10	08:55 15:53	08:01 17:01	06:49 18:06	06:23 20:15	05:06 21:21	04:18 22:14	04:30 22:13	05:28 21:15	06:34 19:52	07:38 18:28	07:48 16:12	08:48 15:30
11	08:54 15:55	07:59 17:04	06:46 18:09	06:20 20:17	05:04 21:23	04:17 22:15	04:31 22:12	05:30 21:12	06:36 19:50	07:40 18:26	07:51 16:10	08:49 15:30
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31	08:23 16:37		05:50 19:53		04:28 22:01		05:07 21:38	06:13 20:20		07:25 16:34		09:01 15:38
Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Darza iela 15 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (525)
 Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:28 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
2	09:00 15:41	08:19 16:42	07:11 17:48	06:45 19:57	05:25 21:04	04:25 22:04	04:21 22:20	05:11 21:33	06:17 20:15	07:21 18:51	07:30 16:29	08:35 15:36
3	09:00 15:42	08:17 16:45	07:08 17:50	06:42 19:59	05:23 21:06	04:24 22:06	04:21 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:37 15:35
4	08:59 15:43	08:15 16:47	07:05 17:53	06:39 20:02	05:20 21:08	04:23 22:07	04:22 22:18	05:15 21:29	06:21 20:09	07:25 18:45	07:34 16:25	08:38 15:34
5	08:59 15:45	08:13 16:49	07:03 17:55	06:37 20:04	05:18 21:10	04:22 22:08	04:24 22:18	05:17 21:26	06:23 20:06	07:27 18:42	07:37 16:23	08:40 15:33
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19	08:44 16:11	07:39 17:22	06:24 18:26	05:58 20:35	04:48 21:40	04:15 22:21	04:44 22:00	05:47 20:52	06:53 19:27	07:58 18:04	08:09 15:54	08:57 15:29
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31	08:23 16:37		05:50 19:53		04:28 22:01		05:07 21:37	06:13 20:20		07:25 16:34		09:01 15:38
Potential sun hours	227	262	365	429	515	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Darza iela 16 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (515)
Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:28 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
2	09:00 15:41	08:19 16:42	07:11 17:48	06:45 19:57	05:25 21:04	04:25 22:04	04:21 22:20	05:11 21:33	06:17 20:15	07:21 18:51	07:30 16:29	08:35 15:36
3	09:00 15:42	08:17 16:45	07:08 17:50	06:42 19:59	05:23 21:06	04:24 22:06	04:21 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:37 15:35
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25	08:34 16:24	07:24 17:37	06:07 18:40	05:43 20:48	04:37 21:51	04:16 22:22	04:55 21:50	06:00 20:36	07:06 19:10	07:11 16:49	08:21 15:45	09:00 15:32
26	08:33 16:26	07:21 17:39	06:04 18:42	05:40 20:50	04:35 21:53	04:16 22:22	04:57 21:48	06:02 20:34	07:08 19:07	07:14 16:46	08:23 15:43	09:01 15:33
27	08:31 16:28	07:19 17:41	06:02 18:44	05:38 20:53	04:34 21:55	04:17 22:22	04:59 21:46	06:04 20:31	07:10 19:05	07:16 16:44	08:25 15:42	09:01 15:34
28	08:29 16:30	07:16 17:43	05:59 18:46	05:35 20:55	04:32 21:56	04:17 22:21	05:01 21:44	06:06 20:28	07:12 19:02	07:18 16:42	08:27 15:41	09:01 15:35
29	08:27 16:33		05:56 19:48	05:33 20:57	04:31 21:58	04:18 22:21	05:03 21:42	06:08 20:26	07:14 18:59	07:21 16:39	08:29 15:39	09:01 15:36
30	08:25 16:35		05:53 19:51	05:30 20:59	04:29 22:00	04:19 22:21	05:05 21:40	06:10 20:23	07:16 18:56	07:23 16:37	08:31 15:38	09:01 15:37
31	08:23 16:37		05:50 19:53		04:28 22:01		05:07 21:38	06:13 20:20		07:25 16:34		09:01 15:38
Potential sun hours	227	262	365	429	515	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Darza iela 17 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (528)
 Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:28 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
2	09:00 15:41	08:19 16:42	07:11 17:48	06:45 19:57	05:25 21:04	04:25 22:04	04:21 22:20	05:11 21:33	06:17 20:15	07:21 18:51	07:30 16:30	08:35 15:36
3	09:00 15:42	08:17 16:45	07:08 17:50	06:42 19:59	05:23 21:06	04:24 22:06	04:21 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:37 15:35
4	08:59 15:43	08:15 16:47	07:05 17:53	06:39 20:02	05:20 21:08	04:23 22:07	04:23 22:18	05:15 21:29	06:21 20:09	07:25 18:45	07:34 16:25	08:38 15:34
5	08:59 15:45	08:13 16:49	07:03 17:55	06:37 20:04	05:18 21:10	04:22 22:08	04:24 22:18	05:17 21:26	06:23 20:06	07:27 18:42	07:37 16:23	08:40 15:33
6	08:58 15:46	08:10 16:52	07:00 17:57	06:34 20:06	05:16 21:12	04:21 22:10	04:25 22:17	05:19 21:24	06:25 20:04	07:29 18:39	07:39 16:20	08:42 15:32
7	08:58 15:48	08:08 16:54	06:57 17:59	06:31 20:08	05:13 21:15	04:20 22:11	04:26 22:16	05:21 21:22	06:27 20:01	07:31 18:37	07:41 16:18	08:43 15:32
8	08:57 15:50	08:06 16:56	06:55 18:02	06:28 20:10	05:11 21:17	04:19 22:12	04:27 22:15	05:24 21:19	06:30 19:58	07:34 18:34	07:44 16:16	08:45 15:31
9	08:56 15:51	08:04 16:59	06:52 18:04	06:25 20:13	05:09 21:19	04:19 22:13	04:28 22:14	05:26 21:17	06:32 19:55	07:36 18:31	07:46 16:14	08:46 15:31
10	08:55 15:53	08:01 17:01	06:49 18:06	06:23 20:15	05:06 21:21	04:18 22:14	04:30 22:13	05:28 21:15	06:34 19:52	07:38 18:28	07:48 16:12	08:48 15:30
11	08:54 15:55	07:59 17:04	06:46 18:09	06:20 20:17	05:04 21:23	04:17 22:15	04:31 22:12	05:30 21:12	06:36 19:50	07:40 18:26	07:51 16:10	08:49 15:30
12	08:53 15:57	07:57 17:06	06:44 18:11	06:17 20:19	05:02 21:25	04:17 22:16	04:33 22:10	05:32 21:19	06:38 19:47	07:42 18:23	07:53 16:08	08:50 15:29
13	08:52 15:58	07:54 17:08	06:41 18:13	06:15 20:22	05:00 21:27	04:16 22:17	04:34 22:09	05:34 21:07	06:40 19:44	07:45 18:20	07:55 16:06	08:51 15:29
14	08:51 16:00	07:52 17:11	06:38 18:15	06:12 20:24	04:58 21:29	04:16 22:18	04:36 22:08	05:36 21:05	06:42 19:41	07:47 18:18	07:57 16:04	08:53 15:29
15	08:50 16:02	07:49 17:13	06:35 18:17	06:09 20:26	04:56 21:32	04:15 22:19	04:37 22:06	05:38 21:02	06:44 19:38	07:49 18:15	08:00 16:02	08:54 15:29
16	08:48 16:04	07:47 17:15	06:32 18:20	06:06 20:28	04:54 21:34	04:15 22:19	04:39 22:05	05:41 21:00	06:46 19:35	07:51 18:12	08:02 16:00	08:55 15:29
17	08:47 16:06	07:44 17:18	06:30 18:22	06:04 20:30	04:52 21:36	04:15 22:20	04:41 22:03	05:43 20:57	06:49 19:33	07:53 18:10	08:04 15:58	08:56 15:29
18	08:46 16:08	07:42 17:20	06:27 18:24	06:01 20:33	04:50 21:38	04:15 22:20	04:42 22:02	05:45 20:55	06:51 19:30	07:56 18:07	08:06 15:56	08:56 15:29
19	08:44 16:11	07:39 17:22	06:24 18:26	05:58 20:35	04:48 21:40	04:15 22:21	04:44 22:00	05:47 20:52	06:53 19:27	07:58 18:04	08:09 15:54	08:57 15:29
20	08:43 16:13	07:37 17:25	06:21 18:29	05:56 20:37	04:46 21:42	04:15 22:21	04:46 21:59	05:49 20:50	06:55 19:24	08:00 18:02	08:11 15:53	08:58 15:29
21	08:41 16:15	07:34 17:27	06:18 18:31	05:53 20:39	04:44 21:44	04:15 22:21	04:48 21:57	05:51 20:47	06:57 19:21	08:02 17:59	08:13 15:51	08:59 15:30
22	08:40 16:17	07:32 17:30	06:16 18:33	05:50 20:41	04:42 21:45	04:15 22:22	04:49 21:55	05:53 20:44	06:59 19:19	08:05 17:57	08:15 15:49	08:59 15:30
23	08:38 16:19	07:29 17:32	06:13 18:35	05:48 20:44	04:40 21:47	04:15 22:22	04:51 21:53	05:56 20:42	07:01 19:16	08:07 17:54	08:17 15:48	09:00 15:31
24	08:36 16:21	07:27 17:34	06:10 18:37	05:45 20:46	04:39 21:49	04:15 22:22	04:53 21:52	05:58 20:39	07:03 19:13	08:09 17:52	08:19 15:46	09:00 15:31
25	08:34 16:24	07:24 17:37	06:07 18:40	05:43 20:48	04:37 21:51	04:16 22:22	04:55 21:50	06:00 20:36	07:06 19:10	07:11 16:49	08:21 15:45	09:00 15:32
26	08:33 16:26	07:21 17:39	06:04 18:42	05:40 20:50	04:35 21:53	04:16 22:22	04:57 21:48	06:02 20:34	07:08 19:07	07:14 16:46	08:23 15:43	09:01 15:33
27	08:31 16:28	07:19 17:41	06:02 18:44	05:38 20:53	04:34 21:55	04:17 22:22	04:59 21:46	06:04 20:31	07:10 19:05	07:16 16:44	08:25 15:42	09:01 15:34
28	08:29 16:30	07:16 17:43	05:59 18:46	05:35 20:55	04:32 21:56	04:17 22:21	05:01 21:44	06:06 20:28	07:12 19:02	07:18 16:42	08:27 15:41	09:01 15:35
29	08:27 16:33		06:56 19:48	05:33 20:57	04:31 21:58	04:18 22:21	05:03 21:42	06:08 20:26	07:14 18:59	07:21 16:39	08:29 15:39	09:01 15:36
30	08:25 16:35		06:53 19:51	05:30 20:59	04:29 22:00	04:19 22:21	05:05 21:40	06:10 20:23	07:16 18:56	07:23 16:37	08:31 15:38	09:01 15:37
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Total, worst case												
Sun reduction												
Oper. time red.												
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Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Darza iela 18 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (527)
 Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:28 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
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3	09:00 15:42	08:17 16:45	07:08 17:50	06:42 19:59	05:23 21:06	04:24 22:06	04:21 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:37 15:35
4	08:59 15:43	08:15 16:47	07:05 17:53	06:39 20:02	05:20 21:08	04:23 22:07	04:22 22:18	05:15 21:29	06:21 20:09	07:25 18:45	07:34 16:25	08:38 15:34
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7	08:58 15:48	08:08 16:54	06:57 17:59	06:31 20:08	05:13 21:15	04:20 22:11	04:26 22:16	05:21 21:22	06:27 20:01	07:31 18:37	07:41 16:18	08:43 15:32
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9	08:56 15:51	08:04 16:59	06:52 18:04	06:25 20:13	05:09 21:19	04:19 22:13	04:28 22:14	05:26 21:17	06:32 19:55	07:36 18:31	07:46 16:14	08:46 15:31
10	08:55 15:53	08:01 17:01	06:49 18:06	06:23 20:15	05:06 21:21	04:18 22:14	04:30 22:13	05:28 21:15	06:34 19:52	07:38 18:28	07:48 16:12	08:48 15:30
11	08:54 15:55	07:59 17:04	06:46 18:09	06:20 20:17	05:04 21:23	04:17 22:15	04:31 22:12	05:30 21:12	06:36 19:50	07:40 18:26	07:51 16:10	08:49 15:30
12	08:53 15:57	07:57 17:06	06:44 18:11	06:17 20:19	05:02 21:25	04:17 22:16	04:33 22:10	05:32 21:19	06:38 19:47	07:42 18:23	07:53 16:08	08:50 15:29
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15	08:50 16:02	07:49 17:13	06:35 18:17	06:09 20:26	04:56 21:32	04:15 22:19	04:37 22:06	05:38 21:02	06:44 19:38	07:49 18:15	08:00 16:02	08:54 15:29
16	08:48 16:04	07:47 17:15	06:32 18:20	06:06 20:28	04:54 21:34	04:15 22:19	04:39 22:05	05:41 21:00	06:46 19:35	07:51 18:12	08:02 16:00	08:55 15:29
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19	08:44 16:11	07:39 17:22	06:24 18:26	05:58 20:35	04:48 21:40	04:15 22:21	04:44 22:00	05:47 20:52	06:53 19:27	07:58 18:04	08:09 15:54	08:57 15:29
20	08:43 16:13	07:37 17:25	06:21 18:29	05:56 20:37	04:46 21:42	04:15 22:21	04:46 21:59	05:49 20:50	06:55 19:24	08:00 18:02	08:11 15:53	08:58 15:29
21	08:41 16:15	07:34 17:27	06:18 18:31	05:53 20:39	04:44 21:44	04:15 22:21	04:48 21:57	05:51 20:47	06:57 19:21	08:02 17:59	08:13 15:51	08:59 15:30
22	08:40 16:17	07:32 17:30	06:16 18:33	05:50 20:41	04:42 21:45	04:15 22:22	04:49 21:55	05:53 20:44	06:59 19:19	08:05 17:57	08:15 15:49	08:59 15:30
23	08:38 16:19	07:29 17:32	06:13 18:35	05:48 20:44	04:40 21:47	04:15 22:22	04:51 21:53	05:56 20:42	07:01 19:16	08:07 17:54	08:17 15:48	09:00 15:31
24	08:36 16:21	07:27 17:34	06:10 18:37	05:45 20:46	04:39 21:49	04:15 22:22	04:53 21:52	05:58 20:39	07:03 19:13	08:09 17:51	08:19 15:46	09:00 15:31
25	08:34 16:24	07:24 17:37	06:07 18:40	05:43 20:48	04:37 21:51	04:16 22:22	04:55 21:50	06:00 20:36	07:06 19:10	07:11 16:49	08:21 15:45	09:00 15:32
26	08:33 16:26	07:21 17:39	06:04 18:42	05:40 20:50	04:35 21:53	04:16 22:22	04:57 21:48	06:02 20:34	07:08 19:07	07:14 16:46	08:23 15:43	09:01 15:33
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29	08:27 16:33		06:56 19:48	05:33 20:57	04:31 21:58	04:18 22:21	05:03 21:42	06:08 20:26	07:14 18:59	07:21 16:39	08:29 15:39	09:01 15:36
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Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
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Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Darza iela 18A - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (567)
 Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

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	January	February	March	April	May	June	July	August	September	October	November	December
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3	09:00 15:42	08:17 16:45	07:08 17:50	06:42 19:59	05:23 21:06	04:24 22:06	04:21 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:37 15:35
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8	08:57 15:49	08:06 16:56	06:55 18:02	06:28 20:10	05:11 21:17	04:19 22:12	04:27 22:15	05:24 21:19	06:30 19:58	07:34 18:34	07:44 16:16	08:45 15:31
9	08:56 15:51	08:04 16:59	06:52 18:04	06:25 20:13	05:09 21:19	04:19 22:13	04:28 22:14	05:26 21:17	06:32 19:55	07:36 18:31	07:46 16:14	08:46 15:31
10	08:55 15:53	08:01 17:01	06:49 18:06	06:23 20:15	05:06 21:21	04:18 22:14	04:30 22:13	05:28 21:15	06:34 19:52	07:38 18:28	07:48 16:12	08:48 15:30
11	08:54 15:55	07:59 17:04	06:46 18:09	06:20 20:17	05:04 21:23	04:17 22:15	04:31 22:12	05:30 21:12	06:36 19:50	07:40 18:26	07:51 16:10	08:49 15:30
12	08:53 15:57	07:57 17:06	06:44 18:11	06:17 20:19	05:02 21:25	04:17 22:16	04:33 22:10	05:32 21:19	06:38 19:47	07:42 18:23	07:53 16:08	08:50 15:29
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14	08:51 16:00	07:52 17:11	06:38 18:15	06:12 20:24	04:58 21:29	04:16 22:18	04:36 22:08	05:36 21:05	06:42 19:41	07:47 18:18	07:57 16:04	08:53 15:29
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31	08:23 16:37		05:50 19:53		04:28 22:01		05:07 21:38	06:13 20:20		07:25 16:34		09:01 15:38
Potential sun hours	227	262	365	429	515	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Darza iela 19 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (530)
 Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:28 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
2	09:00 15:41	08:19 16:42	07:11 17:48	06:45 19:57	05:25 21:04	04:25 22:04	04:21 22:20	05:11 21:33	06:17 20:15	07:21 18:51	07:30 16:30	08:35 15:36
3	09:00 15:42	08:17 16:45	07:08 17:50	06:42 19:59	05:23 21:06	04:24 22:06	04:21 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:37 15:35
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31	08:23 16:37		06:50 19:53		04:28 22:01		05:07 21:37	06:13 20:20		07:25 16:34		09:01 15:38
Potential sun hours	227	262	365	429	515	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Darza iela 20 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (546)
 Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:28 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
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29	08:27 16:33		06:56 19:48	05:33 20:57	04:31 21:58	04:18 22:21	05:03 21:42	06:08 20:26	07:14 18:59	07:21 16:39	08:29 15:39	09:01 15:36
30	08:25 16:35		06:53 19:51	05:30 20:59	04:29 22:00	04:19 22:21	05:05 21:40	06:10 20:23	07:16 18:56	07:23 16:37	08:31 15:38	09:01 15:37
31	08:23 16:37		06:50 19:53		04:28 22:01		05:07 21:38	06:13 20:20		07:25 16:34		09:01 15:38
Potential sun hours	227	262	365	429	515	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Darza iela 20A - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (538)
 Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:28 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
2	09:00 15:41	08:19 16:42	07:11 17:48	06:45 19:57	05:25 21:04	04:25 22:04	04:21 22:20	05:11 21:33	06:17 20:15	07:21 18:51	07:30 16:30	08:35 15:36
3	09:00 15:42	08:17 16:45	07:08 17:50	06:42 19:59	05:23 21:06	04:24 22:06	04:21 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:37 15:35
4	08:59 15:43	08:15 16:47	07:05 17:53	06:39 20:02	05:20 21:08	04:23 22:07	04:23 22:18	05:15 21:29	06:21 20:09	07:25 18:45	07:34 16:25	08:38 15:34
5	08:59 15:45	08:13 16:49	07:03 17:55	06:37 20:04	05:18 21:10	04:22 22:08	04:24 22:18	05:17 21:26	06:23 20:06	07:27 18:42	07:37 16:23	08:40 15:33
6	08:58 15:46	08:10 16:52	07:00 17:57	06:34 20:06	05:16 21:12	04:21 22:10	04:25 22:17	05:19 21:24	06:25 20:04	07:29 18:39	07:39 16:20	08:42 15:32
7	08:58 15:48	08:08 16:54	06:57 17:59	06:31 20:08	05:13 21:15	04:20 22:11	04:26 22:16	05:21 21:22	06:27 20:01	07:31 18:37	07:41 16:18	08:43 15:32
8	08:57 15:50	08:06 16:56	06:55 18:02	06:28 20:10	05:11 21:17	04:19 22:12	04:27 22:15	05:24 21:19	06:30 19:58	07:34 18:34	07:44 16:16	08:45 15:31
9	08:56 15:51	08:04 16:59	06:52 18:04	06:25 20:13	05:09 21:19	04:19 22:13	04:28 22:14	05:26 21:17	06:32 19:55	07:36 18:31	07:46 16:14	08:46 15:31
10	08:55 15:53	08:01 17:01	06:49 18:06	06:23 20:15	05:06 21:21	04:18 22:14	04:30 22:13	05:28 21:15	06:34 19:52	07:38 18:28	07:48 16:12	08:48 15:30
11	08:54 15:55	07:59 17:04	06:46 18:09	06:20 20:17	05:04 21:23	04:17 22:15	04:31 22:12	05:30 21:12	06:36 19:50	07:40 18:26	07:51 16:10	08:49 15:30
12	08:53 15:57	07:57 17:06	06:44 18:11	06:17 20:19	05:02 21:25	04:17 22:16	04:33 22:10	05:32 21:19	06:38 19:47	07:42 18:23	07:53 16:08	08:50 15:29
13	08:52 15:58	07:54 17:08	06:41 18:13	06:15 20:22	05:00 21:27	04:16 22:17	04:34 22:09	05:34 21:07	06:40 19:44	07:45 18:20	07:55 16:06	08:51 15:29
14	08:51 16:00	07:52 17:11	06:38 18:15	06:12 20:24	04:58 21:29	04:16 22:18	04:36 22:08	05:36 21:05	06:42 19:41	07:47 18:18	07:57 16:04	08:53 15:29
15	08:50 16:02	07:49 17:13	06:35 18:17	06:09 20:26	04:56 21:32	04:15 22:19	04:37 22:06	05:38 21:02	06:44 19:38	07:49 18:15	08:00 16:02	08:54 15:29
16	08:48 16:04	07:47 17:15	06:32 18:20	06:06 20:28	04:54 21:34	04:15 22:19	04:39 22:05	05:41 21:00	06:46 19:35	07:51 18:12	08:02 16:00	08:55 15:29
17	08:47 16:06	07:44 17:18	06:30 18:22	06:04 20:30	04:52 21:36	04:15 22:20	04:41 22:03	05:43 20:57	06:49 19:33	07:53 18:10	08:04 15:58	08:56 15:29
18	08:46 16:08	07:42 17:20	06:27 18:24	06:01 20:33	04:50 21:38	04:15 22:20	04:42 22:02	05:45 20:55	06:51 19:30	07:56 18:07	08:06 15:56	08:56 15:29
19	08:44 16:11	07:39 17:22	06:24 18:26	05:58 20:35	04:48 21:40	04:15 22:21	04:44 22:00	05:47 20:52	06:53 19:27	07:58 18:04	08:09 15:54	08:57 15:29
20	08:43 16:13	07:37 17:25	06:21 18:29	05:56 20:37	04:46 21:42	04:15 22:21	04:46 21:59	05:49 20:50	06:55 19:24	08:00 18:02	08:11 15:53	08:58 15:29
21	08:41 16:15	07:34 17:27	06:18 18:31	05:53 20:39	04:44 21:44	04:15 22:21	04:48 21:57	05:51 20:47	06:57 19:21	08:02 17:59	08:13 15:51	08:59 15:30
22	08:40 16:17	07:32 17:30	06:16 18:33	05:50 20:41	04:42 21:45	04:15 22:22	04:49 21:55	05:53 20:44	06:59 19:19	08:05 17:57	08:15 15:49	08:59 15:30
23	08:38 16:19	07:29 17:32	06:13 18:35	05:48 20:44	04:40 21:47	04:15 22:22	04:51 21:53	05:56 20:42	07:01 19:16	08:07 17:54	08:17 15:48	09:00 15:31
24	08:36 16:21	07:27 17:34	06:10 18:37	05:45 20:46	04:39 21:49	04:15 22:22	04:53 21:52	05:58 20:39	07:03 19:13	08:09 17:52	08:19 15:46	09:00 15:31
25	08:34 16:24	07:24 17:37	06:07 18:40	05:43 20:48	04:37 21:51	04:16 22:22	04:55 21:50	06:00 20:36	07:06 19:10	07:11 16:49	08:21 15:45	09:00 15:32
26	08:33 16:26	07:21 17:39	06:04 18:42	05:40 20:50	04:35 21:53	04:16 22:22	04:57 21:48	06:02 20:34	07:08 19:07	07:14 16:46	08:23 15:43	09:01 15:33
27	08:31 16:28	07:19 17:41	06:02 18:44	05:38 20:53	04:34 21:55	04:17 22:22	04:59 21:46	06:04 20:31	07:10 19:05	07:16 16:44	08:25 15:42	09:01 15:34
28	08:29 16:30	07:16 17:43	05:59 18:46	05:35 20:55	04:32 21:56	04:17 22:21	05:01 21:44	06:06 20:28	07:12 19:02	07:18 16:42	08:27 15:41	09:01 15:35
29	08:27 16:33		06:56 19:48	05:33 20:57	04:31 21:58	04:18 22:21	05:03 21:42	06:08 20:26	07:14 18:59	07:21 16:39	08:29 15:39	09:01 15:36
30	08:25 16:35		06:53 19:51	05:30 20:59	04:29 22:00	04:19 22:21	05:05 21:40	06:10 20:23	07:16 18:56	07:23 16:37	08:31 15:38	09:01 15:37
31	08:23 16:37		06:50 19:53		04:28 22:01		05:07 21:38	06:13 20:20		07:25 16:34		09:01 15:38
Potential sun hours	227	262	365	429	515	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Darza iela 22 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (565)
 Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:28 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
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3	09:00 15:42	08:17 16:45	07:08 17:50	06:42 19:59	05:23 21:06	04:24 22:06	04:21 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:37 15:35
4	08:59 15:43	08:15 16:47	07:05 17:53	06:39 20:02	05:20 21:08	04:23 22:07	04:23 22:18	05:15 21:29	06:21 20:09	07:25 18:45	07:34 16:25	08:38 15:34
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7	08:58 15:48	08:08 16:54	06:57 17:59	06:31 20:08	05:13 21:15	04:20 22:11	04:26 22:16	05:21 21:22	06:27 20:01	07:31 18:37	07:41 16:18	08:43 15:32
8	08:57 15:50	08:06 16:56	06:55 18:02	06:28 20:10	05:11 21:17	04:19 22:12	04:27 22:15	05:24 21:19	06:30 19:58	07:34 18:34	07:44 16:16	08:45 15:31
9	08:56 15:51	08:04 16:59	06:52 18:04	06:25 20:13	05:09 21:19	04:19 22:13	04:28 22:14	05:26 21:17	06:32 19:55	07:36 18:31	07:46 16:14	08:46 15:31
10	08:55 15:53	08:01 17:01	06:49 18:06	06:23 20:15	05:06 21:21	04:18 22:14	04:30 22:13	05:28 21:15	06:34 19:52	07:38 18:28	07:48 16:12	08:48 15:30
11	08:54 15:55	07:59 17:04	06:46 18:09	06:20 20:17	05:04 21:23	04:17 22:15	04:31 22:12	05:30 21:12	06:36 19:50	07:40 18:26	07:51 16:10	08:49 15:30
12	08:53 15:57	07:57 17:06	06:44 18:11	06:17 20:19	05:02 21:25	04:17 22:16	04:33 22:10	05:32 21:19	06:38 19:47	07:42 18:23	07:53 16:08	08:50 15:29
13	08:52 15:58	07:54 17:08	06:41 18:13	06:15 20:22	05:00 21:27	04:16 22:17	04:34 22:09	05:34 21:07	06:40 19:44	07:45 18:20	07:55 16:06	08:51 15:29
14	08:51 16:00	07:52 17:11	06:38 18:15	06:12 20:24	04:58 21:29	04:16 22:18	04:36 22:08	05:36 21:05	06:42 19:41	07:47 18:18	07:57 16:04	08:53 15:29
15	08:50 16:02	07:49 17:13	06:35 18:17	06:09 20:26	04:56 21:32	04:15 22:19	04:37 22:06	05:38 21:02	06:44 19:38	07:49 18:15	08:00 16:02	08:54 15:29
16	08:48 16:04	07:47 17:15	06:32 18:20	06:06 20:28	04:54 21:34	04:15 22:19	04:39 22:05	05:41 21:00	06:46 19:35	07:51 18:12	08:02 16:00	08:55 15:29
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19	08:44 16:11	07:39 17:22	06:24 18:26	05:58 20:35	04:48 21:40	04:15 22:21	04:44 22:00	05:47 20:52	06:53 19:27	07:58 18:04	08:09 15:54	08:57 15:29
20	08:43 16:13	07:37 17:25	06:21 18:29	05:56 20:37	04:46 21:42	04:15 22:21	04:46 21:59	05:49 20:50	06:55 19:24	08:00 18:02	08:11 15:53	08:58 15:29
21	08:41 16:15	07:34 17:27	06:18 18:31	05:53 20:39	04:44 21:44	04:15 22:21	04:48 21:57	05:51 20:47	06:57 19:21	08:02 17:59	08:13 15:51	08:59 15:30
22	08:40 16:17	07:32 17:30	06:16 18:33	05:50 20:41	04:42 21:45	04:15 22:22	04:49 21:55	05:53 20:44	06:59 19:19	08:05 17:57	08:15 15:49	08:59 15:30
23	08:38 16:19	07:29 17:32	06:13 18:35	05:48 20:44	04:40 21:47	04:15 22:22	04:51 21:53	05:56 20:42	07:01 19:16	08:07 17:54	08:17 15:48	09:00 15:31
24	08:36 16:21	07:27 17:34	06:10 18:37	05:45 20:46	04:39 21:49	04:15 22:22	04:53 21:52	05:58 20:39	07:03 19:13	08:09 17:52	08:19 15:46	09:00 15:31
25	08:34 16:24	07:24 17:37	06:07 18:40	05:43 20:48	04:37 21:51	04:16 22:22	04:55 21:50	06:00 20:36	07:06 19:10	07:11 16:49	08:21 15:45	09:00 15:32
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28	08:29 16:30	07:16 17:43	05:59 18:46	05:35 20:55	04:32 21:56	04:17 22:21	05:01 21:44	06:06 20:28	07:12 19:02	07:18 16:42	08:27 15:41	09:01 15:35
29	08:27 16:33		05:56 19:48	05:33 20:57	04:31 21:58	04:18 22:21	05:03 21:42	06:08 20:26	07:14 18:59	07:21 16:39	08:29 15:39	09:01 15:36
30	08:25 16:35		05:53 19:51	05:30 20:59	04:29 22:00	04:19 22:21	05:05 21:40	06:10 20:23	07:16 18:56	07:23 16:37	08:31 15:38	09:01 15:37
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Total, worst case												
Sun reduction												
Oper. time red.												
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Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Darza iela 3 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (544)
 Sunshine probability S (Average daily sunshine hours) []

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
 0.80 1.82 4.75 6.09 9.67 10.05 8.16 7.72 5.94 2.93 0.63 0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:28 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
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5	08:59 15:45	08:13 16:49	07:03 17:55	06:37 20:04	05:18 21:10	04:22 22:08	04:24 22:18	05:17 21:26	06:23 20:06	07:27 18:42	07:37 16:23	08:40 15:33
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7	08:58 15:48	08:08 16:54	06:57 17:59	06:31 20:08	05:13 21:15	04:20 22:11	04:26 22:16	05:21 21:22	06:27 20:01	07:31 18:37	07:41 16:18	08:43 15:32
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9	08:56 15:51	08:04 16:59	06:52 18:04	06:25 20:13	05:09 21:19	04:18 22:13	04:28 22:14	05:26 21:17	06:32 19:55	07:36 18:31	07:46 16:14	08:46 15:31
10	08:55 15:53	08:01 17:01	06:49 18:06	06:23 20:15	05:06 21:21	04:18 22:14	04:30 22:13	05:28 21:15	06:34 19:52	07:38 18:28	07:48 16:12	08:48 15:30
11	08:54 15:55	07:59 17:04	06:46 18:09	06:20 20:17	05:04 21:23	04:17 22:15	04:31 22:12	05:30 21:12	06:36 19:50	07:40 18:26	07:51 16:10	08:49 15:30
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13	08:52 15:58	07:54 17:08	06:41 18:13	06:15 20:22	05:00 21:27	04:16 22:17	04:34 22:09	05:34 21:07	06:40 19:44	07:44 18:20	07:55 16:05	08:51 15:29
14	08:51 16:00	07:52 17:11	06:38 18:15	06:12 20:24	04:58 21:29	04:16 22:18	04:36 22:08	05:36 21:05	06:42 19:41	07:47 18:18	07:57 16:04	08:53 15:29
15	08:50 16:02	07:49 17:13	06:35 18:17	06:09 20:26	04:56 21:32	04:15 22:19	04:37 22:06	05:38 21:02	06:44 19:38	07:49 18:15	08:00 16:02	08:54 15:29
16	08:48 16:04	07:47 17:15	06:32 18:20	06:06 20:28	04:54 21:34	04:15 22:19	04:39 22:05	05:41 21:00	06:46 19:35	07:51 18:12	08:02 16:00	08:55 15:29
17	08:47 16:06	07:44 17:18	06:30 18:22	06:04 20:30	04:52 21:36	04:15 22:20	04:40 22:03	05:43 20:57	06:49 19:33	07:53 18:10	08:04 15:58	08:56 15:29
18	08:46 16:08	07:42 17:20	06:27 18:24	06:01 20:33	04:50 21:38	04:15 22:20	04:42 22:02	05:45 20:55	06:51 19:30	07:56 18:07	08:06 15:56	08:56 15:29
19	08:44 16:10	07:39 17:22	06:24 18:26	05:58 20:35	04:48 21:40	04:15 22:21	04:44 22:00	05:47 20:52	06:53 19:27	07:58 18:04	08:09 15:54	08:57 15:29
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31	08:23 16:37		06:50 19:53		04:28 22:01		05:07 21:38	06:13 20:20		07:25 16:34		09:01 15:38
Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Last time (hh:mm) with flicker	(WTG causing flicker last time)
	Minutes with flicker		

Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Darza iela 4 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (564)
 Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:28 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
2	09:00 15:41	08:19 16:42	07:11 17:48	06:45 19:57	05:25 21:04	04:25 22:04	04:21 22:20	05:11 21:33	06:17 20:15	07:21 18:51	07:30 16:29	08:35 15:36
3	09:00 15:42	08:17 16:44	07:08 17:50	06:42 19:59	05:23 21:06	04:24 22:06	04:21 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:37 15:35
4	08:59 15:43	08:15 16:47	07:05 17:53	06:39 20:02	05:20 21:08	04:23 22:07	04:22 22:18	05:15 21:29	06:21 20:09	07:25 18:45	07:34 16:25	08:38 15:34
5	08:59 15:45	08:13 16:49	07:03 17:55	06:37 20:04	05:18 21:10	04:22 22:08	04:24 22:18	05:17 21:26	06:23 20:06	07:27 18:42	07:37 16:23	08:40 15:33
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7	08:58 15:48	08:08 16:54	06:57 17:59	06:31 20:08	05:13 21:15	04:20 22:11	04:26 22:16	05:21 21:22	06:27 20:01	07:31 18:37	07:41 16:18	08:43 15:32
8	08:57 15:49	08:06 16:56	06:55 18:02	06:28 20:10	05:11 21:17	04:19 22:12	04:27 22:15	05:23 21:19	06:30 19:58	07:34 18:34	07:44 16:16	08:45 15:31
9	08:56 15:51	08:04 16:59	06:52 18:04	06:25 20:13	05:09 21:19	04:18 22:13	04:28 22:14	05:26 21:17	06:32 19:55	07:36 18:31	07:46 16:14	08:46 15:31
10	08:55 15:53	08:01 17:01	06:49 18:06	06:23 20:15	05:06 21:21	04:18 22:14	04:30 22:13	05:28 21:15	06:34 19:52	07:38 18:28	07:48 16:12	08:48 15:30
11	08:54 15:55	07:59 17:04	06:46 18:09	06:20 20:17	05:04 21:23	04:17 22:15	04:31 22:12	05:30 21:12	06:36 19:50	07:40 18:26	07:51 16:10	08:49 15:30
12	08:53 15:57	07:57 17:06	06:44 18:11	06:17 20:19	05:02 21:25	04:17 22:16	04:33 22:10	05:32 21:19	06:38 19:47	07:42 18:23	07:53 16:08	08:50 15:29
13	08:52 15:58	07:54 17:08	06:41 18:13	06:15 20:22	05:00 21:27	04:16 22:17	04:34 22:09	05:34 21:07	06:40 19:44	07:45 18:20	07:55 16:05	08:51 15:29
14	08:51 16:00	07:52 17:11	06:38 18:15	06:12 20:24	04:58 21:29	04:16 22:18	04:36 22:08	05:36 21:05	06:42 19:41	07:47 18:18	07:57 16:04	08:53 15:29
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19	08:44 16:10	07:39 17:22	06:24 18:26	05:58 20:35	04:48 21:40	04:15 22:21	04:44 22:00	05:47 20:52	06:53 19:27	07:58 18:04	08:09 15:54	08:57 15:29
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21	08:41 16:15	07:34 17:27	06:18 18:31	05:53 20:39	04:44 21:44	04:15 22:21	04:47 21:57	05:51 20:47	06:57 19:21	08:02 17:59	08:13 15:51	08:59 15:30
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23	08:38 16:19	07:29 17:32	06:13 18:35	05:48 20:44	04:40 21:47	04:15 22:22	04:51 21:53	05:56 20:42	07:01 19:16	08:07 17:54	08:17 15:48	09:00 15:31
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27	08:31 16:28	07:19 17:41	06:02 18:44	05:38 20:53	04:34 21:55	04:17 22:22	04:59 21:46	06:04 20:31	07:10 19:05	07:16 16:44	08:25 15:42	09:01 15:34
28	08:29 16:30	07:16 17:43	05:59 18:46	05:35 20:55	04:32 21:56	04:17 22:21	05:01 21:44	06:06 20:28	07:12 19:02	07:18 16:41	08:27 15:41	09:01 15:35
29	08:27 16:33		05:56 19:48	05:32 20:57	04:31 21:58	04:18 22:21	05:03 21:42	06:08 20:26	07:14 18:59	07:21 16:39	08:29 15:39	09:01 15:35
30	08:25 16:35		05:53 19:51	05:30 20:59	04:29 22:00	04:19 22:21	05:05 21:40	06:10 20:23	07:16 18:56	07:23 16:37	08:31 15:38	09:01 15:37
31	08:23 16:37		05:50 19:53		04:28 22:01		05:07 21:38	06:13 20:20		07:25 16:34		09:01 15:38
Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Darza iela 5 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (548)
 Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:28 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
2	09:00 15:41	08:19 16:42	07:11 17:48	06:45 19:57	05:25 21:04	04:25 22:04	04:21 22:20	05:11 21:33	06:17 20:15	07:21 18:51	07:30 16:29	08:35 15:36
3	09:00 15:42	08:17 16:44	07:08 17:50	06:42 19:59	05:23 21:06	04:24 22:06	04:21 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:37 15:35
4	08:59 15:43	08:15 16:47	07:05 17:53	06:39 20:02	05:20 21:08	04:23 22:07	04:22 22:18	05:15 21:29	06:21 20:09	07:25 18:45	07:34 16:25	08:38 15:34
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10	08:55 15:53	08:01 17:01	06:49 18:06	06:23 20:15	05:06 21:21	04:18 22:14	04:30 22:13	05:28 21:15	06:34 19:52	07:38 18:28	07:48 16:12	08:48 15:30
11	08:54 15:55	07:59 17:04	06:46 18:09	06:20 20:17	05:04 21:23	04:17 22:15	04:31 22:12	05:30 21:12	06:36 19:50	07:40 18:26	07:51 16:10	08:49 15:30
12	08:53 15:57	07:57 17:06	06:44 18:11	06:17 20:19	05:02 21:25	04:17 22:16	04:33 22:10	05:32 21:19	06:38 19:47	07:42 18:23	07:53 16:08	08:50 15:29
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19	08:44 16:10	07:39 17:22	06:24 18:26	05:58 20:35	04:48 21:40	04:15 22:21	04:44 22:00	05:47 20:52	06:53 19:27	07:58 18:04	08:09 15:54	08:57 15:29
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Total, real												

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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Darza iela 6 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (511)
 Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:28 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
2	09:00 15:41	08:19 16:42	07:11 17:48	06:45 19:57	05:25 21:04	04:25 22:04	04:21 22:20	05:11 21:33	06:17 20:15	07:21 18:51	07:30 16:29	08:35 15:36
3	09:00 15:42	08:17 16:44	07:08 17:50	06:42 19:59	05:23 21:06	04:24 22:06	04:21 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:37 15:35
4	08:59 15:43	08:15 16:47	07:05 17:53	06:39 20:02	05:20 21:08	04:23 22:07	04:22 22:18	05:15 21:29	06:21 20:09	07:25 18:45	07:34 16:25	08:38 15:34
5	08:59 15:45	08:13 16:49	07:03 17:55	06:37 20:04	05:18 21:10	04:22 22:08	04:24 22:18	05:17 21:26	06:23 20:06	07:27 18:42	07:37 16:23	08:40 15:33
6	08:58 15:46	08:10 16:52	07:00 17:57	06:34 20:06	05:16 21:12	04:21 22:10	04:25 22:17	05:19 21:24	06:25 20:04	07:29 18:39	07:39 16:20	08:42 15:32
7	08:58 15:48	08:08 16:54	06:57 17:59	06:31 20:08	05:13 21:15	04:20 22:11	04:26 22:16	05:21 21:22	06:27 20:01	07:31 18:37	07:41 16:18	08:43 15:32
8	08:57 15:49	08:06 16:56	06:55 18:02	06:28 20:10	05:11 21:17	04:19 22:12	04:27 22:15	05:24 21:19	06:30 19:58	07:34 18:34	07:44 16:16	08:45 15:31
9	08:56 15:51	08:04 16:59	06:52 18:04	06:25 20:13	05:09 21:19	04:18 22:13	04:28 22:14	05:26 21:17	06:32 19:55	07:36 18:31	07:46 16:14	08:46 15:31
10	08:55 15:53	08:01 17:01	06:49 18:06	06:23 20:15	05:06 21:21	04:18 22:14	04:30 22:13	05:28 21:15	06:34 19:52	07:38 18:28	07:48 16:12	08:48 15:30
11	08:54 15:55	07:59 17:04	06:46 18:09	06:20 20:17	05:04 21:23	04:17 22:15	04:31 22:12	05:30 21:12	06:36 19:50	07:40 18:26	07:51 16:10	08:49 15:30
12	08:53 15:57	07:57 17:06	06:44 18:11	06:17 20:19	05:02 21:25	04:17 22:16	04:33 22:10	05:32 21:19	06:38 19:47	07:42 18:23	07:53 16:08	08:50 15:29
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14	08:51 16:00	07:52 17:11	06:38 18:15	06:12 20:24	04:58 21:29	04:16 22:18	04:36 22:08	05:36 21:05	06:42 19:41	07:47 18:18	07:57 16:04	08:53 15:29
15	08:50 16:02	07:49 17:13	06:35 18:17	06:09 20:26	04:56 21:32	04:15 22:19	04:37 22:06	05:38 21:02	06:44 19:38	07:49 18:15	08:00 16:02	08:54 15:29
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17	08:47 16:06	07:44 17:18	06:30 18:22	06:04 20:30	04:52 21:36	04:15 22:20	04:41 22:03	05:43 20:57	06:49 19:33	07:53 18:10	08:04 15:58	08:56 15:29
18	08:46 16:08	07:42 17:20	06:27 18:24	06:01 20:33	04:50 21:38	04:15 22:20	04:42 22:02	05:45 20:55	06:51 19:30	07:56 18:07	08:06 15:56	08:56 15:29
19	08:44 16:10	07:39 17:22	06:24 18:26	05:58 20:35	04:48 21:40	04:15 22:21	04:44 22:00	05:47 20:52	06:53 19:27	07:58 18:04	08:09 15:54	08:57 15:29
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28	08:29 16:30	07:16 17:43	05:59 18:46	05:35 20:55	04:32 21:56	04:17 22:21	05:01 21:44	06:06 20:28	07:12 19:02	07:18 16:41	08:27 15:41	09:01 15:35
29	08:27 16:33		05:56 19:48	05:32 20:57	04:31 21:58	04:18 22:21	05:03 21:42	06:08 20:26	07:14 18:59	07:21 16:39	08:29 15:39	09:01 15:35
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31	08:23 16:37		05:50 19:53		04:28 22:01		05:07 21:38	06:13 20:20		07:25 16:34		09:01 15:38
Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Darza iela 7 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (526)
 Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:28 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
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Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Darza iela 8 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (532)
 Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
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18	08:46 16:08	07:42 17:20	06:27 18:24	06:01 20:33	04:50 21:38	04:15 22:20	04:42 22:02	05:45 20:55	06:51 19:30	07:56 18:07	08:06 15:56	08:56 15:29
19	08:44 16:10	07:39 17:22	06:24 18:26	05:58 20:35	04:48 21:40	04:15 22:21	04:44 22:00	05:47 20:52	06:53 19:27	07:58 18:04	08:09 15:54	08:57 15:29
20	08:43 16:13	07:37 17:25	06:21 18:29	05:56 20:37	04:46 21:42	04:15 22:21	04:46 21:59	05:49 20:50	06:55 19:24	08:00 18:02	08:11 15:53	08:58 15:29
21	08:41 16:15	07:34 17:27	06:18 18:31	05:53 20:39	04:44 21:44	04:15 22:21	04:47 21:57	05:51 20:47	06:57 19:21	08:02 17:59	08:13 15:51	08:59 15:30
22	08:40 16:17	07:32 17:30	06:16 18:33	05:50 20:41	04:42 21:45	04:15 22:22	04:49 21:55	05:53 20:44	06:59 19:19	08:05 17:57	08:15 15:49	08:59 15:30
23	08:38 16:19	07:29 17:32	06:13 18:35	05:48 20:44	04:40 21:47	04:15 22:22	04:51 21:53	05:56 20:42	07:01 19:16	08:07 17:54	08:17 15:48	09:00 15:31
24	08:36 16:21	07:27 17:34	06:10 18:37	05:45 20:46	04:39 21:49	04:15 22:22	04:53 21:52	05:58 20:39	07:03 19:13	08:09 17:51	08:19 15:46	09:00 15:31
25	08:34 16:24	07:24 17:37	06:07 18:40	05:43 20:48	04:37 21:51	04:16 22:22	04:55 21:50	06:00 20:36	07:06 19:10	07:11 16:49	08:21 15:45	09:00 15:32
26	08:33 16:26	07:21 17:39	06:04 18:42	05:40 20:50	04:35 21:53	04:16 22:22	04:57 21:48	06:02 20:34	07:08 19:07	07:14 16:46	08:23 15:43	09:01 15:33
27	08:31 16:28	07:19 17:41	06:02 18:44	05:38 20:53	04:34 21:55	04:17 22:22	04:59 21:46	06:04 20:31	07:10 19:05	07:16 16:44	08:25 15:42	09:01 15:34
28	08:29 16:30	07:16 17:43	05:59 18:46	05:35 20:55	04:32 21:56	04:17 22:21	05:01 21:44	06:06 20:28	07:12 19:02	07:18 16:41	08:27 15:41	09:01 15:35
29	08:27 16:33		05:56 19:48	05:33 20:57	04:31 21:58	04:18 22:21	05:03 21:42	06:08 20:26	07:14 18:59	07:21 16:39	08:29 15:39	09:01 15:35
30	08:25 16:35		05:53 19:51	05:30 20:59	04:29 22:00	04:19 22:21	05:05 21:40	06:10 20:23	07:16 18:56	07:23 16:37	08:31 15:38	09:01 15:37
31	08:23 16:37		05:50 19:53		04:28 22:01		05:07 21:38	06:13 20:20		07:25 16:34		09:01 15:38
Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Darza iela 9 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (552)
Sunshine probability S (Average daily sunshine hours) []

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
0.80 1.82 4.75 6.09 9.67 10.05 8.16 7.72 5.94 2.93 0.63 0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01	08:21	07:13	06:48	05:28	04:27	04:20	05:09	06:15	07:18	07:28	08:33
	15:39	16:40	17:46	19:55	21:01	22:03	22:20	21:35	20:17	18:53	16:32	15:37
2	09:00	08:19	07:11	06:45	05:25	04:25	04:21	05:11	06:17	07:21	07:30	08:35
	15:41	16:42	17:48	19:57	21:04	22:04	22:20	21:33	20:15	18:51	16:29	15:36
3	09:00	08:17	07:08	06:42	05:23	04:24	04:21	05:13	06:19	07:23	07:32	08:37
	15:42	16:45	17:50	19:59	21:06	22:06	22:19	21:31	20:12	18:48	16:27	15:35
4	08:59	08:15	07:05	06:39	05:20	04:23	04:22	05:15	06:21	07:25	07:34	08:38
	15:43	16:47	17:53	20:02	21:08	22:07	22:18	21:29	20:09	18:45	16:25	15:34
5	08:59	08:13	07:03	06:37	05:18	04:22	04:24	05:17	06:23	07:27	07:37	08:40
	15:45	16:49	17:55	20:04	21:10	22:08	22:18	21:26	20:06	18:42	16:23	15:33
6	08:58	08:10	07:00	06:34	05:16	04:21	04:25	05:19	06:25	07:29	07:39	08:42
	15:46	16:52	17:57	20:06	21:12	22:10	22:17	21:24	20:04	18:39	16:20	15:32
7	08:58	08:08	06:57	06:31	05:13	04:20	04:26	05:21	06:27	07:31	07:41	08:43
	15:48	16:54	17:59	20:08	21:15	22:11	22:16	21:22	20:01	18:37	16:18	15:32
8	08:57	08:06	06:55	06:28	05:11	04:19	04:27	05:24	06:30	07:34	07:44	08:45
	15:49	16:56	18:02	20:10	21:17	22:12	22:15	21:19	19:58	18:34	16:16	15:31
9	08:56	08:04	06:52	06:25	05:09	04:18	04:28	05:26	06:32	07:36	07:46	08:46
	15:51	16:59	18:04	20:13	21:19	22:13	22:14	21:17	19:55	18:31	16:14	15:31
10	08:55	08:01	06:49	06:23	05:06	04:18	04:30	05:28	06:34	07:38	07:48	08:48
	15:53	17:01	18:06	20:15	21:21	22:14	22:13	21:15	19:52	18:28	16:12	15:30
11	08:54	07:59	06:46	06:20	05:04	04:17	04:31	05:30	06:36	07:40	07:51	08:49
	15:55	17:04	18:09	20:17	21:23	22:15	22:12	21:12	19:50	18:26	16:10	15:30
12	08:53	07:57	06:44	06:17	05:02	04:17	04:33	05:32	06:38	07:42	07:53	08:50
	15:57	17:06	18:11	20:19	21:25	22:16	22:10	21:10	19:47	18:23	16:08	15:29
13	08:52	07:54	06:41	06:15	05:00	04:16	04:34	05:34	06:40	07:45	07:55	08:51
	15:58	17:08	18:13	20:22	21:27	22:17	22:09	21:07	19:44	18:20	16:06	15:29
14	08:51	07:52	06:38	06:12	04:58	04:16	04:36	05:36	06:42	07:47	07:57	08:53
	16:00	17:11	18:15	20:24	21:29	22:18	22:08	21:05	19:41	18:18	16:04	15:29
15	08:50	07:49	06:35	06:09	04:56	04:15	04:37	05:38	06:44	07:49	08:00	08:54
	16:02	17:13	18:17	20:26	21:32	22:19	22:06	21:02	19:38	18:15	16:02	15:29
16	08:48	07:47	06:32	06:06	04:54	04:15	04:39	05:41	06:46	07:51	08:02	08:55
	16:04	17:15	18:20	20:28	21:34	22:19	22:05	21:00	19:35	18:12	16:00	15:29
17	08:47	07:44	06:30	06:04	04:52	04:15	04:41	05:43	06:49	07:53	08:04	08:56
	16:06	17:18	18:22	20:30	21:36	22:20	22:03	20:57	19:33	18:10	15:58	15:29
18	08:46	07:42	06:27	06:01	04:50	04:15	04:42	05:45	06:51	07:56	08:06	08:56
	16:08	17:20	18:24	20:33	21:38	22:20	22:02	20:55	19:30	18:07	15:56	15:29
19	08:44	07:39	06:24	05:58	04:48	04:15	04:44	05:47	06:53	07:58	08:09	08:57
	16:11	17:22	18:26	20:35	21:40	22:21	22:00	20:52	19:27	18:04	15:54	15:29
20	08:43	07:37	06:21	05:56	04:46	04:15	04:46	05:49	06:55	08:00	08:11	08:58
	16:13	17:25	18:29	20:37	21:42	22:21	21:59	20:50	19:24	18:02	15:53	15:29
21	08:41	07:34	06:18	05:53	04:44	04:15	04:48	05:51	06:57	08:02	08:13	08:59
	16:15	17:27	18:31	20:39	21:44	22:21	21:57	20:47	19:21	17:59	15:51	15:30
22	08:40	07:32	06:16	05:50	04:42	04:15	04:49	05:53	06:59	08:05	08:15	08:59
	16:17	17:30	18:33	20:41	21:45	22:22	21:55	20:44	19:19	17:57	15:49	15:30
23	08:38	07:29	06:13	05:48	04:40	04:15	04:51	05:56	07:01	08:07	08:17	09:00
	16:19	17:32	18:35	20:44	21:47	22:22	21:53	20:42	19:16	17:54	15:48	15:31
24	08:36	07:27	06:10	05:45	04:39	04:15	04:53	05:58	07:03	08:09	08:19	09:00
	16:21	17:34	18:37	20:46	21:49	22:22	21:52	20:39	19:13	17:51	15:46	15:31
25	08:34	07:24	06:07	05:43	04:37	04:16	04:55	06:00	07:06	07:11	08:21	09:00
	16:24	17:37	18:40	20:48	21:51	22:22	21:50	20:36	19:10	16:49	15:45	15:32
26	08:33	07:21	06:04	05:40	04:35	04:16	04:57	06:02	07:08	07:14	08:23	09:01
	16:26	17:39	18:42	20:50	21:53	22:22	21:48	20:34	19:07	16:46	15:43	15:33
27	08:31	07:19	06:02	05:38	04:34	04:17	04:59	06:04	07:10	07:16	08:25	09:01
	16:28	17:41	18:44	20:53	21:55	22:22	21:46	20:31	19:05	16:44	15:42	15:34
28	08:29	07:16	05:59	05:35	04:32	04:17	05:01	06:06	07:12	07:18	08:27	09:01
	16:30	17:43	18:46	20:55	21:56	22:21	21:44	20:28	19:02	16:42	15:41	15:35
29	08:27		06:56	05:33	04:31	04:18	05:03	06:08	07:14	07:21	08:29	09:01
	16:33		19:48	20:57	21:58	22:21	21:42	20:26	18:59	16:39	15:39	15:36
30	08:25		06:53	05:30	04:29	04:19	05:05	06:10	07:16	07:23	08:31	09:01
	16:35		19:51	20:59	22:00	22:21	21:40	20:23	18:56	16:37	15:38	15:37
31	08:23		06:50		04:28		05:07	06:13		07:25		09:01
	16:37		19:53		22:01		21:38	20:20		16:34		15:38
Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Last time (hh:mm) with flicker	(WTG causing flicker last time)
	Minutes with flicker		

Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Dumini - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (455)
Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) []

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
0.80 1.82 4.75 6.09 9.67 10.05 8.16 7.72 5.94 2.93 0.63 0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January			February			March			April			May		June
1	09:00	13:18 (11)	08:21	14:35 (4)	07:13		06:48	18:14 (2)	05:28	04:27					
	15:39	30	14:53 (12)	16:40	64	15:55 (13)	17:46	19:55	46	19:00 (2)	21:01	22:02			
2	09:00	13:20 (11)	08:19	14:36 (4)	07:11		06:45	18:13 (2)	05:25	04:25					
	15:41	28	14:54 (12)	16:42	63	15:56 (13)	17:48	19:57	47	19:00 (2)	21:03	22:04			
3	09:00	13:22 (11)	08:17	14:36 (4)	07:08		06:42	18:12 (2)	05:23	04:24					
	15:42	27	14:56 (12)	16:44	63	15:56 (13)	17:50	19:59	48	19:00 (2)	21:06	22:05			
4	08:59	14:35 (12)	08:15	14:36 (4)	07:05		06:39	18:12 (2)	05:20	04:23					
	15:43	23	14:58 (12)	16:47	61	15:55 (13)	17:53	20:01	47	18:59 (2)	21:08	22:07			
5	08:59	14:35 (12)	08:12	14:37 (4)	07:03		06:36	18:12 (2)	05:18	04:22					
	15:45	23	14:58 (12)	16:49	59	15:54 (13)	17:55	20:04	48	19:00 (2)	21:10	22:08			
6	08:58	14:35 (12)	08:10	14:37 (4)	07:00		06:34	18:12 (2)	05:16	04:21					
	15:46	24	14:59 (12)	16:52	60	16:16 (14)	17:57	20:06	47	18:59 (2)	21:12	22:09			
7	08:57	14:35 (12)	08:08	14:38 (4)	06:57		06:31	18:11 (2)	05:13	04:20					
	15:48	25	15:00 (12)	16:54	61	16:19 (14)	17:59	20:08	47	18:58 (2)	21:14	22:11			
8	08:57	14:35 (12)	08:06	14:38 (4)	06:54		06:28	18:11 (2)	05:11	04:19					
	15:50	25	15:00 (12)	16:56	58	16:22 (14)	18:02	20:10	46	18:57 (2)	21:16	22:12			
9	08:56	14:35 (12)	08:03	14:39 (4)	06:52		06:25	18:12 (2)	05:09	04:19					
	15:51	26	15:01 (12)	16:59	56	16:25 (14)	18:04	20:13	46	18:58 (2)	21:19	22:13			
10	08:55	14:36 (12)	08:01	14:39 (4)	06:49		17:30 (3)	06:23	18:12 (2)	05:06	04:18				
	15:53	26	15:02 (12)	17:01	58	16:27 (14)	18:06	6	17:36 (3)	20:15	44	18:56 (2)	21:21	22:14	
11	08:54	14:35 (12)	07:59	14:41 (4)	06:46		17:28 (3)	06:20	18:12 (2)	05:04	04:17				
	15:55	27	15:02 (12)	17:03	59	16:30 (14)	18:08	12	17:40 (3)	20:17	43	18:55 (2)	21:23	22:15	
12	08:53	14:36 (12)	07:56	14:41 (4)	06:43		17:27 (3)	06:17	18:13 (2)	05:02	04:17				
	15:57	27	15:03 (12)	17:06	58	16:30 (14)	18:11	15	17:42 (3)	20:19	45	19:49 (1)	21:25	22:16	
13	08:52	14:36 (12)	07:54	14:43 (4)	06:41		17:25 (3)	06:14	18:14 (2)	05:00	04:16				
	15:58	27	15:03 (12)	17:08	57	16:31 (14)	18:13	19	17:44 (3)	20:21	46	19:51 (1)	21:27	22:17	
14	08:51	14:37 (12)	07:52	14:45 (4)	06:38		17:24 (3)	06:12	18:14 (2)	04:58	04:16				
	16:00	27	15:04 (12)	17:11	54	16:31 (14)	18:15	22	17:46 (3)	20:24	48	19:52 (1)	21:29	22:18	
15	08:49	14:36 (12)	07:49	14:46 (4)	06:35		17:23 (3)	06:09	18:16 (2)	04:56	04:15				
	16:02	28	15:04 (12)	17:13	51	16:31 (14)	18:17	24	17:47 (3)	20:26	48	19:55 (1)	21:31	22:18	
16	08:48	14:37 (12)	07:47	14:50 (4)	06:32		17:23 (3)	06:06	18:16 (2)	04:54	04:15				
	16:04	28	15:05 (4)	17:15	46	16:32 (14)	18:20	24	17:47 (3)	20:28	49	19:57 (1)	21:33	22:19	
17	08:47	14:38 (12)	07:44	14:53 (4)	06:30		17:23 (3)	06:04	18:19 (2)	04:52	04:15				
	16:06	29	15:07 (4)	17:18	38	16:45 (10)	18:22	24	17:47 (3)	20:30	47	19:59 (1)	21:35	22:20	
18	08:45	14:38 (4)	07:42	16:05 (14)	06:27		17:23 (3)	06:01	18:20 (2)	04:50	04:15				
	16:08	30	15:08 (4)	17:20	31	16:49 (10)	18:24	23	17:46 (3)	20:32	45	20:00 (1)	21:37	22:20	
19	08:44	14:38 (4)	07:39	16:05 (14)	06:24		17:23 (3)	05:58	18:22 (2)	04:48	04:15				
	16:11	31	15:09 (4)	17:22	34	16:51 (10)	18:26	22	17:45 (3)	20:35	40	20:00 (1)	21:39	22:21	
20	08:42	14:38 (4)	07:37	16:05 (14)	06:21		17:23 (3)	05:56	18:26 (2)	04:46	04:15				
	16:13	33	15:11 (4)	17:25	36	16:53 (10)	18:28	22	17:59 (9)	20:37	31	19:59 (1)	21:41	22:21	
21	08:41	14:38 (4)	07:34	16:06 (14)	06:18		17:24 (3)	05:53	19:40 (1)	04:44	04:15				
	16:15	34	15:12 (4)	17:27	37	16:55 (10)	18:31	28	18:01 (9)	20:39	18	19:58 (1)	21:43	22:21	
22	08:39	14:37 (4)	07:32	16:08 (14)	06:16		17:26 (3)	05:50	19:42 (1)	04:42	04:15				
	16:17	35	15:12 (4)	17:29	37	16:58 (10)	18:33	33	18:04 (9)	20:41	15	19:57 (1)	21:45	22:21	
23	08:38	14:37 (4)	07:29	16:09 (14)	06:13		17:26 (2)	05:48	19:42 (1)	04:40	04:15				
	16:19	40	15:40 (13)	17:32	35	16:59 (10)	18:35	38	18:06 (9)	20:43	13	19:55 (1)	21:47	22:21	
24	08:36	14:36 (4)	07:26	16:11 (14)	06:10		17:24 (2)	05:45	19:44 (1)	04:39	04:16				
	16:21	46	15:43 (13)	17:34	29	16:58 (10)	18:37	44	18:08 (9)	20:46	10	19:54 (1)	21:49	22:22	
25	08:34	14:36 (4)	07:24	16:42 (10)	06:07		17:22 (2)	05:43		04:37	04:16				
	16:24	49	15:45 (13)	17:36	16	16:58 (10)	18:39	48	18:10 (9)	20:48		21:51	22:22		
26	08:32	14:36 (4)	07:21	16:42 (10)	06:04		17:20 (2)	05:40		04:35	04:16				
	16:26	54	15:48 (13)	17:39	15	16:57 (10)	18:42	50	18:10 (9)	20:50		21:53	22:21		
27	08:31	14:35 (4)	07:19	16:44 (10)	06:02		17:18 (2)	05:38		04:34	04:17				
	16:28	58	15:50 (13)	17:41	11	16:55 (10)	18:44	50	18:08 (9)	20:52		21:54	22:21		
28	08:29	14:35 (4)	07:16	16:46 (10)	05:59		17:17 (2)	05:35		04:32	04:18				
	16:30	60	15:52 (13)	17:43	5	16:51 (10)	18:46	50	18:07 (9)	20:55		21:56	22:21		
29	08:27	14:35 (4)			06:56		18:16 (2)	05:32		04:31	04:18				
	16:33	64	15:55 (13)		19:48		19:04 (9)	20:57		21:58	22:21				
30	08:25	14:36 (4)			06:53		18:15 (2)	05:30		04:29	04:19				
	16:35	64	15:56 (13)		19:50		18:59 (2)	20:59		21:59	22:20				
31	08:23	14:36 (4)			06:50		18:14 (2)			04:28					
	16:37	64	15:56 (13)		19:53		18:59 (2)			22:01					
Potential sun hours	227		262		365		429		515		539				
Total, worst case	1112		1252		691		964								
Sun reduction	0.11		0.19		0.40		0.43								
Oper. time red.	1.00		1.00		1.00		1.00								
Wind dir. red.	1.00		1.00		1.00		1.00								
Total reduction	0.11		0.19		0.40		0.43								
Total, real	121		243		278		410								

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Last time (hh:mm) with flicker	(WTG causing flicker last time)
	Minutes with flicker		

Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

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Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Dumini - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (455)
Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) []

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
0.80 1.82 4.75 6.09 9.67 10.05 8.16 7.72 5.94 2.93 0.63 0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	July	August	September	October	November	December				
1	04:20 22:20	05:09 21:35	06:15 20:17	18:11 (2) 18:53	07:18 17	18:05 (3) 16:32	07:27 57	14:09 (4) 15:56 (14)	08:33 15:37	14:18 (12) 26
2	04:21 22:19	05:11 21:33	06:17 20:14	18:10 (2) 18:50	07:20 13	18:06 (3) 16:29	07:30 56	14:08 (4) 15:54 (14)	08:35 15:36	14:18 (12) 26
3	04:22 22:19	05:13 21:31	06:19 20:12	18:10 (2) 18:56 (2)	07:23 9	18:07 (3) 16:27	07:32 60	14:07 (4) 15:51 (14)	08:36 15:35	14:19 (12) 25
4	04:23 22:18	05:15 21:28	06:21 20:09	18:09 (2) 18:56 (2)	07:25 4	18:09 (3) 16:25	07:34 63	14:07 (4) 15:49 (14)	08:38 15:34	14:19 (12) 26
5	04:24 22:17	05:17 21:26	06:23 20:06	18:08 (2) 18:55 (2)	07:27 47	07:37 16:23	14:06 (4) 15:46 (14)	08:40 15:33	14:20 (12) 25	14:45 (12)
6	04:25 22:16	05:19 21:24	06:25 20:03	18:08 (2) 18:55 (2)	07:29 47	07:39 16:20	14:07 (4) 15:24 (13)	08:41 15:33	14:21 (12) 24	14:45 (12)
7	04:26 22:16	05:21 21:22	06:27 20:01	18:07 (2) 18:55 (2)	07:31 48	07:41 16:18	14:07 (4) 15:25 (13)	08:43 15:32	14:22 (12) 24	14:46 (12)
8	04:27 22:15	05:24 21:19	06:30 19:58	18:07 (2) 18:55 (2)	07:33 48	07:43 16:16	14:06 (4) 15:25 (13)	08:44 15:31	14:23 (12) 23	14:46 (12)
9	04:28 22:14	05:26 21:17	06:32 19:55	18:07 (2) 18:54 (2)	07:36 47	07:46 16:14	14:07 (4) 15:26 (13)	08:46 15:31	13:11 (11) 26	14:45 (12)
10	04:30 22:12	05:28 21:14	06:34 19:52	18:06 (2) 18:53 (2)	07:38 47	07:48 16:12	14:06 (4) 15:26 (13)	08:47 15:30	13:10 (11) 28	14:44 (12)
11	04:31 22:11	05:30 21:12	06:36 19:49	18:06 (2) 18:53 (2)	07:40 47	07:50 16:10	14:07 (4) 15:27 (13)	08:49 15:30	13:09 (11) 29	14:43 (12)
12	04:33 22:10	05:32 21:10	06:38 19:47	18:06 (2) 18:52 (2)	07:42 46	07:53 16:08	14:07 (4) 15:26 (13)	08:50 15:29	13:09 (11) 30	14:43 (12)
13	04:34 22:09	05:34 21:07	06:40 19:44	18:06 (2) 18:51 (2)	07:44 45	07:55 16:06	14:07 (4) 15:27 (13)	08:51 15:29	13:08 (11) 31	14:43 (12)
14	04:36 22:07	05:36 21:05	06:42 19:41	18:06 (2) 18:53 (9)	07:47 47	07:57 17:18 (10)	14:08 (4) 16:04	08:52 15:29	13:08 (11) 30	14:42 (12)
15	04:37 22:06	05:38 21:02	06:44 19:38	18:07 (2) 18:56 (9)	07:49 49	07:59 17:16 (10)	14:08 (4) 16:02	08:53 15:29	13:08 (11) 30	14:42 (12)
16	04:39 22:05	05:41 21:00	06:46 19:35	18:07 (2) 18:58 (9)	07:51 15	08:02 17:14 (10)	14:09 (4) 16:00	08:54 15:29	13:08 (11) 30	14:41 (12)
17	04:41 22:03	05:43 20:57	06:49 19:33	18:08 (2) 18:58 (9)	07:53 23	08:04 16:45 (14)	14:09 (4) 15:58	08:55 15:29	13:08 (11) 29	14:41 (12)
18	04:42 22:02	05:45 20:55	06:51 19:54 (1)	18:09 (2) 18:58 (9)	07:55 49	08:06 16:42 (14)	14:10 (4) 15:56	08:56 15:29	13:09 (11) 28	14:41 (12)
19	04:44 22:00	05:47 20:52	06:53 20:00 (1)	18:10 (2) 18:56 (9)	07:58 46	08:08 16:39 (14)	14:11 (4) 15:54	08:57 15:29	13:09 (11) 29	14:42 (12)
20	04:46 21:58	05:49 20:49	06:55 20:01 (1)	18:11 (2) 18:53 (9)	08:00 41	08:10 16:37 (14)	14:12 (4) 15:53	08:58 15:29	13:10 (11) 29	14:42 (12)
21	04:48 21:57	05:51 20:47	06:57 20:02 (1)	18:11 (3) 18:50 (9)	08:02 37	08:13 16:37 (14)	14:13 (4) 15:51	08:58 15:30	13:10 (11) 29	14:42 (12)
22	04:49 21:55	05:53 20:44	06:59 20:03 (1)	18:10 (3) 18:48 (9)	08:04 35	08:15 16:35 (14)	14:14 (4) 15:49	08:59 15:30	13:11 (11) 29	14:43 (12)
23	04:51 21:53	05:55 20:41	07:01 20:03 (1)	18:08 (3) 18:45 (9)	08:07 33	08:17 16:35 (14)	14:15 (4) 15:48	08:59 15:31	13:11 (11) 29	14:43 (12)
24	04:53 21:51	05:58 20:39	07:03 20:03 (1)	18:07 (3) 18:29 (3)	08:09 31	08:19 16:34 (14)	14:15 (12) 15:46	09:00 15:31	13:11 (11) 30	14:44 (12)
25	04:55 21:49	06:00 20:36	07:05 20:03 (1)	18:06 (3) 18:29 (3)	07:11 40	08:21 14:22 (4)	14:16 (12) 15:45	09:00 15:32	13:13 (11) 28	14:45 (12)
26	04:57 21:47	06:02 20:33	07:08 20:01 (1)	18:05 (3) 18:29 (3)	07:14 48	08:23 14:18 (4)	14:16 (12) 15:43	09:00 15:33	13:13 (11) 29	14:46 (12)
27	04:59 21:45	06:04 20:31	07:10 19:58 (1)	18:04 (3) 18:28 (3)	07:16 51	08:25 14:16 (4)	14:16 (12) 15:42	09:01 15:34	13:14 (11) 29	14:47 (12)
28	05:01 21:43	06:06 20:28	07:12 19:56 (1)	18:04 (3) 18:28 (3)	07:18 55	08:27 14:14 (4)	14:17 (12) 15:41	09:01 15:35	13:15 (11) 29	14:48 (12)
29	05:03 21:41	06:08 20:25	07:14 19:53 (1)	18:04 (3) 18:27 (3)	07:20 57	08:29 14:13 (4)	14:17 (12) 15:39	09:01 15:36	13:15 (11) 29	14:48 (12)
30	05:05 21:39	06:10 20:23	07:16 19:51 (1)	18:05 (3) 18:25 (3)	07:23 59	08:31 14:11 (4)	14:17 (12) 15:38	09:01 15:37	13:16 (11) 29	14:50 (12)
31	05:07 21:37	06:13 20:20	07:18 19:48 (1)	18:05 (3) 18:25 (3)	07:25 59	08:33 14:10 (4)	14:18 (12) 15:38	09:00 15:38	13:17 (11) 31	14:52 (12)
Potential sun hours	538	474	386	321	241	207	869			
Total, worst case		465	1185	713	1431	869				
Sun reduction		0.50	0.46	0.28	0.08	0.06				
Oper. time red.		1.00	1.00	1.00	1.00	1.00				
Wind dir. red.		1.00	1.00	1.00	1.00	1.00				
Total reduction		0.50	0.46	0.28	0.08	0.06				
Total, real		235	548	202	112	53				

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Last time (hh:mm) with flicker	(WTG causing flicker last time)

Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa
Assumptions for shadow calculations

Shadow receptor: Gaisini - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (480)
Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January			February			March			April	May	June
1	09:00		14:22 (4)	08:21		15:50 (2)	07:13			06:48	05:27	04:27
	15:39	21	14:43 (4)	16:40	13	16:03 (2)	17:46			19:55	21:01	22:02
2	09:00		14:22 (4)	08:19		15:49 (2)	07:11			06:45	05:25	04:25
	15:40	21	14:43 (4)	16:42	17	16:06 (2)	17:48			19:57	21:03	22:04
3	09:00		14:24 (4)	08:17		15:49 (2)	07:08			06:42	05:23	04:24
	15:42	20	14:44 (4)	16:44	20	16:09 (2)	17:50			19:59	21:06	22:05
4	08:59		14:24 (4)	08:15		15:48 (2)	07:05			06:39	05:20	04:23
	15:43	20	14:44 (4)	16:47	23	16:11 (2)	17:53			20:01	21:08	22:07
5	08:59		14:24 (4)	08:12		15:49 (2)	07:03			06:36	05:18	04:22
	15:45	20	14:44 (4)	16:49	23	16:12 (2)	17:55			20:04	21:10	22:08
6	08:58		14:25 (4)	08:10		15:48 (2)	07:00			06:34	05:15	04:21
	15:46	20	14:45 (4)	16:52	24	16:12 (2)	17:57			20:06	21:12	22:10
7	08:57		14:26 (4)	08:08		15:49 (2)	06:57			06:31	05:13	04:20
	15:48	19	14:45 (4)	16:54	24	16:13 (2)	17:59			20:08	21:14	22:11
8	08:57		14:26 (4)	08:06		15:48 (2)	06:54		17:31 (1)	06:28	05:11	04:19
	15:49	19	14:45 (4)	16:56	24	16:12 (2)	18:02	1	17:32 (1)	20:10	21:16	22:12
9	08:56		14:27 (4)	08:03		15:49 (2)	06:52		17:29 (1)	06:25	05:09	04:18
	15:51	18	14:45 (4)	16:59	24	16:13 (2)	18:04	5	17:34 (1)	20:13	21:19	22:13
10	08:55		14:28 (4)	08:01		15:49 (2)	06:49		17:29 (1)	06:23	05:06	04:18
	15:53	18	14:46 (4)	17:01	26	16:27 (3)	18:06	7	17:36 (1)	20:15	21:21	22:14
11	08:54		14:29 (4)	07:59		15:50 (2)	06:46		17:29 (1)	06:20	05:04	04:17
	15:55	16	14:45 (4)	17:03	28	16:30 (3)	18:08	11	17:40 (1)	20:17	21:23	22:15
12	08:53		14:30 (4)	07:56		15:51 (2)	06:43		17:29 (1)	06:17	05:02	04:17
	15:56	15	14:45 (4)	17:06	29	16:32 (3)	18:11	13	17:42 (1)	20:19	21:25	22:16
13	08:52		14:31 (4)	07:54		15:52 (2)	06:41		17:29 (1)	06:14	05:00	04:16
	15:58	13	14:44 (4)	17:08	29	16:35 (3)	18:13	14	17:43 (1)	20:21	21:27	22:17
14	08:51		14:32 (4)	07:52		15:54 (2)	06:38		17:30 (1)	06:12	04:58	04:16
	16:00	12	14:44 (4)	17:11	29	16:38 (3)	18:15	12	17:42 (1)	20:24	21:29	22:18
15	08:49		14:34 (4)	07:49		15:56 (2)	06:35		17:31 (1)	06:09	04:56	04:15
	16:02	8	14:42 (4)	17:13	24	16:39 (3)	18:17	9	17:40 (1)	20:26	21:31	22:18
16	08:48		14:38 (4)	07:47		16:25 (3)	06:32		06:06	04:53	04:15	
	16:04	3	14:41 (4)	17:15	13	16:38 (3)	18:20		20:28	21:33	22:19	
17	08:47		15:22 (14)	07:44		16:26 (3)	06:29		06:04	04:51	04:15	
	16:06	3	15:25 (14)	17:18	11	16:37 (3)	18:22		20:30	21:35	22:20	
18	08:45		15:22 (14)	07:42		16:29 (3)	06:27		06:01	04:49	04:15	
	16:08	5	15:27 (14)	17:20	6	16:35 (3)	18:24		20:32	21:37	22:20	
19	08:44		15:23 (14)	07:39		06:24			05:58	04:48	04:15	
	16:10	7	15:30 (14)	17:22		18:26			20:35	21:39	22:21	
20	08:42		15:23 (14)	07:37		06:21			05:56	04:46	04:15	
	16:13	9	15:32 (14)	17:25		18:28			20:37	21:41	22:21	
21	08:41		15:23 (14)	07:34		06:18			05:53	04:44	04:15	
	16:15	12	15:35 (14)	17:27		18:31			20:39	21:43	22:21	
22	08:39		15:24 (14)	07:32		06:16			05:50	04:42	04:15	
	16:17	13	15:37 (14)	17:29		18:33			20:41	21:45	22:21	
23	08:38		15:24 (14)	07:29		06:13			05:48	04:40	04:15	
	16:19	16	15:40 (14)	17:32		18:35			20:43	21:47	22:22	
24	08:36		15:25 (14)	07:26		06:10			05:45	04:39	04:15	
	16:21	15	15:40 (14)	17:34		18:37			20:46	21:49	22:22	
25	08:34		15:26 (14)	07:24		06:07			05:43	04:37	04:16	
	16:24	14	15:40 (14)	17:36		18:39			20:48	21:51	22:22	
26	08:32		15:27 (14)	07:21		06:04			05:40	04:35	04:16	
	16:26	13	15:40 (14)	17:39		18:42			20:50	21:53	22:21	
27	08:31		15:27 (14)	07:19		06:02			05:37	04:34	04:17	
	16:28	11	15:38 (14)	17:41		18:44			20:52	21:54	22:21	
28	08:29		15:29 (14)	07:16		05:59			05:35	04:32	04:17	
	16:30	8	15:37 (14)	17:43		18:46			20:55	21:56	22:21	
29	08:27		15:53 (2)			06:56			05:32	04:31	04:18	
	16:33	2	15:55 (2)			19:48			20:57	21:58	22:21	
30	08:25		15:52 (2)			06:53			05:30	04:29	04:19	
	16:35	6	15:58 (2)			19:50			20:59	21:59	22:20	
31	08:23		15:51 (2)			06:50				04:28		
	16:37	10	16:01 (2)			19:53				22:01		
Potential sun hours	227			262		365			429	515	539	
Total, worst case	407			387		72						
Sun reduction	0.11			0.19		0.40						
Oper. time red.	1.00			1.00		1.00						
Wind dir. red.	1.00			1.00		1.00						
Total reduction	0.11			0.19		0.40						
Total, real	44			75		29						

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Gaisini - Shadow Receptor: 1.0×1.0 Azimuth: 3.1° Slope: 90.0° (480)
Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	July	August	September	October	November	December
1	04:20	05:09	06:15	07:18	18:08 (1)	07:27
	22:20	21:35	20:17	18:53	14	18:22 (1)
2	04:21	05:11	06:17	07:20	18:07 (1)	07:30
	22:19	21:33	20:14	18:50	12	18:19 (1)
3	04:21	05:13	06:19	07:23	18:07 (1)	07:32
	22:19	21:31	20:12	18:48	9	18:16 (1)
4	04:22	05:15	06:21	07:25	18:06 (1)	07:34
	22:18	21:29	20:09	18:45	7	18:13 (1)
5	04:24	05:17	06:23	07:27	18:07 (1)	07:37
	22:17	21:26	20:06	18:42	4	18:11 (1)
6	04:25	05:19	06:25	07:29	07:39	15:18 (2)
	22:16	21:24	20:03	18:39	16:20	24
7	04:26	05:21	06:27	07:31	07:41	15:19 (2)
	22:16	21:22	20:01	18:37	16:18	22
8	04:27	05:23	06:29	07:33	07:43	15:19 (2)
	22:15	21:19	19:58	18:34	16:16	20
9	04:28	05:26	06:32	07:36	07:46	15:20 (2)
	22:14	21:17	19:55	18:31	16:14	17
10	04:30	05:28	06:34	07:38	07:48	15:21 (2)
	22:13	21:14	19:52	18:28	16:12	13
11	04:31	05:30	06:36	07:40	07:50	15:22 (2)
	22:11	21:12	19:49	18:26	16:09	10
12	04:33	05:32	06:38	07:42	07:53	15:24 (2)
	22:10	21:10	19:47	18:23	16:07	6
13	04:34	05:34	06:40	07:44	07:55	15:25 (2)
	22:09	21:07	19:44	18:20	16:05	2
14	04:36	05:36	06:42	07:47	07:57	15:02 (14)
	22:08	21:05	19:41	18:18	16:03	8
15	04:37	05:38	06:44	07:49	07:59	15:00 (14)
	22:06	21:02	19:38	18:15	16:02	11
16	04:39	05:40	06:46	07:51	08:02	15:00 (14)
	22:05	21:00	19:35	18:12	16:00	13
17	04:40	05:43	06:48	07:53	08:04	14:58 (14)
	22:03	20:57	19:33	18:10	15:58	15
18	04:42	05:45	06:51	07:55	08:06	14:59 (14)
	22:02	20:55	19:30	18:07	15:56	15
19	04:44	05:47	06:53	07:58	08:08	14:58 (14)
	22:00	20:52	19:27	18:04	15:54	16
20	04:46	05:49	06:55	08:00	08:10	14:59 (14)
	21:58	20:49	19:24	18:02	15:52	13
21	04:47	05:51	06:57	08:02	08:13	14:58 (14)
	21:57	20:47	19:21	17:59	15:51	12
22	04:49	05:53	06:59	08:04	08:15	14:59 (14)
	21:55	20:44	19:18	17:56	15:49	10
23	04:51	05:55	07:01	08:07	08:17	14:59 (14)
	21:53	20:41	19:16	17:54	15:48	7
24	04:53	05:58	07:03	08:09	08:19	15:00 (14)
	21:51	20:39	19:13	17:51	7	17:05 (3)
25	04:55	06:00	07:05	07:11	15:56 (3)	08:21
	21:49	20:36	19:10	16:49	11	16:07 (3)
26	04:57	06:02	07:08	07:14	15:54 (3)	08:23
	21:47	20:33	19:07	16:46	14	16:08 (3)
27	04:59	06:04	07:10	07:16	15:25 (2)	08:25
	21:46	20:31	19:04	16:44	26	16:09 (3)
28	05:01	06:06	07:12	18:13 (1)	07:18	15:23 (2)
	21:43	20:28	19:02	6	18:19 (1)	16:41
29	05:03	06:08	07:14	18:10 (1)	07:20	15:22 (2)
	21:41	20:25	18:59	11	18:21 (1)	16:39
30	05:05	06:10	07:16	18:09 (1)	07:23	15:20 (2)
	21:39	20:23	18:56	14	18:23 (1)	16:37
31	05:07	06:13			07:25	15:20 (2)
	21:37	20:20			16:34	27
Potential sun hours	538	474	386	321	241	207
Total, worst case			31	216	414	628
Sun reduction			0.46	0.28	0.08	0.06
Oper. time red.			1.00	1.00	1.00	1.00
Wind dir. red.			1.00	1.00	1.00	1.00
Total reduction			0.46	0.28	0.08	0.06
Total, real			14	61	32	39

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Gaujas iela 11 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (577)
 Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:00 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:27 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:27 16:32	08:33 15:37
2	09:00 15:40	08:19 16:42	07:11 17:48	06:45 19:57	05:25 21:04	04:25 22:04	04:20 22:20	05:11 21:33	06:17 20:15	07:20 18:50	07:30 16:29	08:35 15:36
3	09:00 15:42	08:17 16:44	07:08 17:50	06:42 19:59	05:23 21:06	04:24 22:06	04:21 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:37 15:35
4	08:59 15:43	08:15 16:47	07:05 17:53	06:39 20:02	05:20 21:08	04:23 22:07	04:22 22:18	05:15 21:29	06:21 20:09	07:25 18:45	07:34 16:25	08:38 15:34
5	08:59 15:45	08:13 16:49	07:03 17:55	06:36 20:04	05:18 21:10	04:22 22:08	04:23 22:18	05:17 21:26	06:23 20:06	07:27 18:42	07:37 16:23	08:40 15:33
6	08:58 15:46	08:10 16:52	07:00 17:57	06:34 20:06	05:15 21:12	04:21 22:10	04:25 22:17	05:19 21:24	06:25 20:03	07:29 18:39	07:39 16:20	08:42 15:32
7	08:57 15:48	08:08 16:54	06:57 17:59	06:31 20:08	05:13 21:14	04:20 22:11	04:26 22:16	05:21 21:22	06:27 20:01	07:31 18:37	07:41 16:18	08:43 15:32
8	08:57 15:49	08:06 16:56	06:54 18:02	06:28 20:10	05:11 21:17	04:19 22:12	04:27 22:15	05:23 21:19	06:30 19:58	07:33 18:34	07:44 16:16	08:45 15:31
9	08:56 15:51	08:04 16:59	06:52 18:04	06:25 20:13	05:09 21:19	04:18 22:13	04:28 22:14	05:26 21:17	06:32 19:55	07:36 18:31	07:46 16:14	08:46 15:30
10	08:55 15:53	08:01 17:01	06:49 18:06	06:23 20:15	05:06 21:21	04:18 22:14	04:30 22:13	05:28 21:15	06:34 19:52	07:38 18:28	07:48 16:12	08:48 15:30
11	08:54 15:55	07:59 17:03	06:46 18:08	06:20 20:17	05:04 21:23	04:17 22:15	04:31 22:12	05:30 21:12	06:36 19:49	07:40 18:26	07:51 16:10	08:49 15:30
12	08:53 15:56	07:57 17:06	06:43 18:11	06:17 20:19	05:02 21:25	04:16 22:16	04:33 22:10	05:32 21:10	06:38 19:47	07:42 18:23	07:53 16:07	08:50 15:29
13	08:52 15:58	07:54 17:08	06:41 18:13	06:14 20:21	05:00 21:27	04:16 22:17	04:34 22:09	05:34 21:07	06:40 19:44	07:44 18:20	07:55 16:05	08:51 15:29
14	08:51 16:00	07:52 17:11	06:38 18:15	06:12 20:24	04:58 21:29	04:16 22:18	04:36 22:08	05:36 21:05	06:42 19:41	07:47 18:18	07:57 16:03	08:52 15:29
15	08:50 16:02	07:49 17:13	06:35 18:17	06:09 20:26	04:56 21:31	04:15 22:19	04:37 22:06	05:38 21:02	06:44 19:38	07:49 18:15	08:00 16:02	08:54 15:29
16	08:48 16:04	07:47 17:15	06:32 18:20	06:06 20:28	04:53 21:34	04:15 22:19	04:39 22:05	05:40 21:00	06:46 19:35	07:51 18:12	08:02 16:00	08:55 15:29
17	08:47 16:06	07:44 17:18	06:30 18:22	06:04 20:30	04:51 21:36	04:15 22:20	04:40 22:03	05:43 20:57	06:49 19:33	07:53 18:10	08:04 15:58	08:56 15:29
18	08:46 16:08	07:42 17:20	06:27 18:24	06:01 20:33	04:49 21:38	04:15 22:20	04:42 22:02	05:45 20:55	06:51 19:30	07:56 18:07	08:06 15:56	08:56 15:29
19	08:44 16:10	07:39 17:22	06:24 18:26	05:58 20:35	04:48 21:40	04:15 22:21	04:44 22:00	05:47 20:52	06:53 19:27	07:58 18:04	08:08 15:54	08:57 15:29
20	08:43 16:13	07:37 17:25	06:21 18:29	05:56 20:37	04:46 21:42	04:15 22:21	04:46 21:59	05:49 20:49	06:55 19:24	08:00 18:02	08:11 15:52	08:58 15:29
21	08:41 16:15	07:34 17:27	06:18 18:31	05:53 20:39	04:44 21:43	04:15 22:21	04:47 21:57	05:51 20:47	06:57 19:21	08:02 17:59	08:13 15:51	08:59 15:30
22	08:40 16:17	07:32 17:29	06:16 18:33	05:50 20:41	04:42 21:45	04:15 22:22	04:49 21:55	05:53 20:44	06:59 19:19	08:05 17:57	08:15 15:49	08:59 15:30
23	08:38 16:19	07:29 17:32	06:13 18:35	05:48 20:44	04:40 21:47	04:15 22:22	04:51 21:53	05:55 20:42	07:01 19:16	08:07 17:54	08:17 15:48	09:00 15:31
24	08:36 16:21	07:27 17:34	06:10 18:37	05:45 20:46	04:38 21:49	04:15 22:22	04:53 21:51	05:58 20:39	07:03 19:13	08:09 17:51	08:19 15:46	09:00 15:31
25	08:34 16:24	07:24 17:36	06:07 18:40	05:43 20:48	04:37 21:51	04:16 22:22	04:55 21:50	06:00 20:36	07:05 19:10	07:11 16:49	08:21 15:45	09:00 15:32
26	08:33 16:26	07:21 17:39	06:04 18:42	05:40 20:50	04:35 21:53	04:16 22:22	04:57 21:48	06:02 20:34	07:08 19:07	07:14 16:46	08:23 15:43	09:01 15:33
27	08:31 16:28	07:19 17:41	06:02 18:44	05:37 20:52	04:34 21:55	04:17 22:22	04:59 21:46	06:04 20:31	07:10 19:04	07:16 16:44	08:25 15:42	09:01 15:34
28	08:29 16:30	07:16 17:43	05:59 18:46	05:35 20:55	04:32 21:56	04:17 22:21	05:01 21:44	06:06 20:28	07:12 19:02	07:18 16:41	08:27 15:41	09:01 15:34
29	08:27 16:33		06:56 19:48	05:32 20:57	04:31 21:58	04:18 22:21	05:03 21:42	06:08 20:25	07:14 18:59	07:21 16:39	08:29 15:39	09:01 15:35
30	08:25 16:35		06:53 19:51	05:30 20:59	04:29 22:00	04:19 22:21	05:05 21:40	06:10 20:23	07:16 18:56	07:23 16:37	08:31 15:38	09:01 15:36
31	08:23 16:37		06:50 19:53		04:28 22:01		05:07 21:37	06:13 20:20		07:25 16:34		09:01 15:38
Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa
Assumptions for shadow calculations

Shadow receptor: Gravas - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (479)
Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January		February		March		April	May	June
1	09:00		14:19 (4)	08:21		07:13	06:48	05:27	04:27
	15:39	23	14:42 (4)	16:40		17:46	19:55	21:01	22:02
2	09:00		14:19 (4)	08:19		07:11	06:45	05:25	04:25
	15:41	23	14:42 (4)	16:42	4	16:06 (2)	17:48	19:57	21:03
3	09:00		14:20 (4)	08:17		07:08	06:42	05:23	04:24
	15:42	23	14:43 (4)	16:44	8	16:09 (2)	17:50	19:59	21:06
4	08:59		14:20 (4)	08:15		07:05	06:39	05:20	04:23
	15:43	23	14:43 (4)	16:47	12	16:11 (2)	17:53	20:01	21:08
5	08:59		14:20 (4)	08:12		07:03	06:36	05:18	04:22
	15:45	24	14:44 (4)	16:49	16	16:14 (2)	17:55	20:04	21:10
6	08:58		14:21 (4)	08:10		07:00	06:34	05:15	04:21
	15:46	23	14:44 (4)	16:52	19	16:16 (2)	17:57	20:06	21:12
7	08:57		14:21 (4)	08:08		06:57	06:31	05:13	04:20
	15:48	23	14:44 (4)	16:54	23	16:19 (2)	17:59	20:08	21:14
8	08:57		14:22 (4)	08:06		06:54	06:28	05:11	04:19
	15:49	22	14:44 (4)	16:56	26	16:21 (2)	18:02	20:10	21:16
9	08:56		14:23 (4)	08:03		06:52	06:25	05:09	04:18
	15:51	22	14:45 (4)	16:59	27	16:22 (2)	18:04	20:13	21:19
10	08:55		14:24 (4)	08:01		06:49	06:23	05:06	04:18
	15:53	21	14:45 (4)	17:01	27	16:22 (2)	18:06	20:15	21:21
11	08:54		14:24 (4)	07:59		06:46	06:20	05:04	04:17
	15:55	21	14:45 (4)	17:03	28	16:23 (2)	18:08	20:17	21:23
12	08:53		14:25 (4)	07:56		06:43	06:17	05:02	04:17
	15:57	20	14:45 (4)	17:06	27	16:22 (2)	18:11	20:19	21:25
13	08:52		14:25 (4)	07:54		06:41	17:42 (1)	06:14	05:00
	15:58	19	14:44 (4)	17:08	31	16:35 (3)	18:13	20:21	21:27
14	08:51		14:27 (4)	07:52		06:38	17:40 (1)	06:12	04:58
	16:00	18	14:45 (4)	17:11	34	16:38 (3)	18:15	20:24	21:29
15	08:49		14:27 (4)	07:49		06:35	17:39 (1)	06:09	04:56
	16:02	17	14:44 (4)	17:13	36	16:40 (3)	18:17	20:26	21:31
16	08:48		14:29 (4)	07:47		06:32	17:39 (1)	06:06	04:53
	16:04	15	14:44 (4)	17:15	38	16:43 (3)	18:20	20:28	21:33
17	08:47		14:31 (4)	07:44		06:29	17:39 (1)	06:04	04:51
	16:06	12	14:43 (4)	17:18	38	16:45 (3)	18:22	20:30	21:35
18	08:45		14:32 (4)	07:42		06:27	17:39 (1)	06:01	04:50
	16:08	11	15:27 (14)	17:20	38	16:48 (3)	18:24	20:32	21:37
19	08:44		15:26 (14)	07:39		06:24	17:40 (1)	05:58	04:48
	16:10	4	15:30 (14)	17:22	34	16:47 (3)	18:26	20:35	21:39
20	08:42		15:26 (14)	07:37		06:21	17:41 (1)	05:56	04:46
	16:13	6	15:32 (14)	17:25	29	16:46 (3)	18:28	20:37	21:41
21	08:41		15:26 (14)	07:34		06:18	17:43 (1)	05:53	04:44
	16:15	9	15:35 (14)	17:27	19	16:44 (3)	18:31	20:39	21:43
22	08:39		15:26 (14)	07:32		06:16	17:50 (1)	05:50	04:42
	16:17	11	15:37 (14)	17:29	6	16:42 (3)	18:33	20:41	21:45
23	08:38		15:26 (14)	07:29		06:13	17:40 (1)	05:48	04:40
	16:19	14	15:40 (14)	17:32		18:35	20:43	21:47	22:22
24	08:36		15:26 (14)	07:26		06:10	17:41 (1)	05:45	04:39
	16:21	16	15:42 (14)	17:34		18:37	20:46	21:49	22:22
25	08:34		15:27 (14)	07:24		06:07	17:43 (1)	05:43	04:37
	16:24	18	15:45 (14)	17:36		18:39	20:48	21:51	22:22
26	08:32		15:27 (14)	07:21		06:04	17:44 (1)	05:40	04:35
	16:26	18	15:45 (14)	17:39		18:42	20:50	21:53	22:21
27	08:31		15:27 (14)	07:19		06:02	17:45 (1)	05:37	04:34
	16:28	17	15:44 (14)	17:41		18:44	20:52	21:54	22:21
28	08:29		15:28 (14)	07:16		05:59	17:46 (1)	05:35	04:32
	16:30	15	15:43 (14)	17:43		18:46	20:55	21:56	22:21
29	08:27		15:30 (14)			06:56	17:47 (1)	05:32	04:31
	16:33	13	15:43 (14)			19:48	20:57	21:58	22:21
30	08:25		15:31 (14)			06:53	17:48 (1)	05:30	04:29
	16:35	11	15:42 (14)			19:50	20:59	21:59	22:20
31	08:23		15:34 (14)			06:50			04:28
	16:37	6	15:40 (14)			19:53		22:01	
Potential sun hours	227		262			365	429	515	539
Total, worst case	518		520			90			
Sun reduction	0.11		0.19			0.40			
Oper. time red.	1.00		1.00			1.00			
Wind dir. red.	1.00		1.00			1.00			
Total reduction	0.11		0.19			0.40			
Total, real	57		101			36			

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Gravas - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (479)
Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	July	August	September	October	November	December
1	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:27 16:32	08:33 15:24 (2)
2	04:21 22:19	05:11 21:33	06:17 20:14	07:20 18:50	07:30 16:29	08:35 15:25 (2)
3	04:21 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:36 15:25 (2)
4	04:22 22:18	05:15 21:29	06:21 20:09	07:25 18:45	07:34 16:25	08:38 15:26 (2)
5	04:24 22:17	05:17 21:26	06:23 20:06	07:27 18:42	07:37 16:23	08:40 15:26 (2)
6	04:25 22:16	05:19 21:24	06:25 20:03	07:29 18:39	07:39 16:20	08:41 15:28 (2)
7	04:26 22:16	05:21 21:22	06:27 20:01	07:31 18:37	07:41 16:18	08:43 15:29 (2)
8	04:27 22:15	05:23 21:19	06:29 19:58	07:33 18:34	07:44 16:16	08:44 15:31 (2)
9	04:28 22:14	05:26 21:17	06:32 19:55	07:36 18:31	07:46 16:14	08:46 15:33 (2)
10	04:30 22:13	05:28 21:14	06:34 19:52	07:38 18:28	07:48 16:12	08:47 15:37 (2)
11	04:31 22:11	05:30 21:12	06:36 19:49	07:40 18:26	07:50 16:10	08:49 15:05 (14)
12	04:33 22:10	05:32 21:10	06:38 19:47	07:42 18:23	07:53 16:07	08:50 15:03 (14)
13	04:34 22:09	05:34 21:07	06:40 19:44	07:44 18:20	07:55 16:05	08:51 15:14 (14)
14	04:36 22:08	05:36 21:05	06:42 19:41	07:47 18:18	07:57 16:03	08:52 15:15 (14)
15	04:37 22:06	05:38 21:02	06:44 19:38	07:49 18:15	07:59 16:02	08:53 15:01 (14)
16	04:39 22:05	05:40 21:00	06:46 19:35	07:51 18:12	08:02 16:00	08:54 15:16 (14)
17	04:40 22:03	05:43 20:57	06:48 19:33	07:53 18:10	08:04 15:58	08:55 15:18 (14)
18	04:42 22:02	05:45 20:55	06:51 19:30	07:55 18:07	08:06 15:56	08:56 15:00 (14)
19	04:44 22:00	05:47 20:52	06:53 19:27	07:58 18:04	08:08 15:54	08:57 15:16 (14)
20	04:46 21:58	05:49 20:49	06:55 19:24	08:00 18:02	08:10 17:05 (3)	08:58 15:14 (14)
21	04:47 21:57	05:51 20:47	06:57 19:21	08:02 17:59	08:13 17:16 (3)	08:58 15:12 (14)
22	04:49 21:55	05:53 20:44	06:59 19:18	08:04 18:29 (1)	08:15 16:31 (2)	08:59 15:10 (14)
23	04:51 21:53	05:55 20:41	07:01 19:16	08:07 18:34 (1)	08:17 17:16 (3)	08:59 15:09 (14)
24	04:53 21:51	05:58 20:39	07:03 19:13	08:09 18:37 (1)	08:19 17:17 (3)	09:00 15:07 (14)
25	04:55 21:49	06:00 20:36	07:05 19:10	08:11 18:38 (1)	08:21 16:15 (3)	09:00 14:21 (4)
26	04:57 21:47	06:02 20:33	07:08 19:07	08:14 18:31 (1)	08:23 16:12 (3)	09:00 14:08 (4)
27	04:59 21:46	06:04 20:31	07:10 19:04	08:16 18:33 (1)	08:25 16:10 (3)	09:01 14:22 (4)
28	05:01 21:43	06:06 20:28	07:12 19:02	08:18 18:20 (1)	08:27 16:06 (3)	09:01 14:07 (4)
29	05:03 21:41	06:08 20:25	07:14 18:59	08:20 18:27 (1)	08:29 16:04 (3)	09:01 14:25 (4)
30	05:05 21:39	06:10 20:23	07:16 18:56	08:23 18:21 (1)	08:31 15:24 (2)	09:01 14:06 (4)
31	05:07 21:37	06:13 20:20		08:25 16:37	08:33 15:25 (2)	09:01 14:26 (4)
Potential sun hours	538	474	386	321	241	207
Total, worst case			94	367	431	713
Sun reduction			0.46	0.28	0.08	0.06
Oper. time red.			1.00	1.00	1.00	1.00
Wind dir. red.			1.00	1.00	1.00	1.00
Total reduction			0.46	0.28	0.08	0.06
Total, real			43	104	34	44

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Indranu iela 5 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (690)
 Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) []

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
 0.80 1.82 4.75 6.09 9.67 10.05 8.16 7.72 5.94 2.93 0.63 0.41

No operational time reduction. It is assumed the WTGs are always running
 with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	10:43 (5) 10:46 (5)	08:21 16:40	07:14 17:46	06:48 19:55	05:28 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	08:33 15:37
2	09:00 15:41		08:19 16:42	07:11 17:48	06:45 19:57	05:25 21:04	04:26 22:04	04:21 22:20	05:11 21:33	06:17 20:15	07:21 18:51	08:35 15:36
3	09:00 15:42		08:17 16:45	07:08 17:50	06:42 20:00	05:23 21:06	04:24 22:06	04:22 22:19	05:13 21:31	06:19 20:12	07:23 18:48	08:37 15:35
4	08:59 15:43		08:15 16:47	07:06 17:53	06:39 20:02	05:20 21:08	04:23 22:07	04:23 22:18	05:15 21:29	06:21 20:09	07:25 18:45	08:38 15:34
5	08:59 15:45		08:13 16:49	07:03 17:55	06:37 20:04	05:18 21:10	04:22 22:09	04:24 22:18	05:17 21:27	06:23 20:06	07:27 18:42	08:40 15:33
6	08:58 15:46		08:10 16:52	07:00 17:57	06:34 20:06	05:16 21:12	04:21 22:10	04:25 22:17	05:19 21:24	06:25 20:04	07:29 18:40	08:42 15:33
7	08:58 15:48		08:08 16:54	06:57 18:00	06:31 20:08	05:13 21:15	04:20 22:11	04:26 22:16	05:22 21:22	06:28 20:01	07:31 18:37	08:43 15:32
8	08:57 15:50		08:06 16:56	06:55 18:02	06:28 20:11	05:11 21:17	04:19 22:12	04:27 22:15	05:24 21:20	06:30 19:58	07:34 18:34	08:45 15:31
9	08:56 15:51	09:36 (1) 09:38 (1)	08:04 16:59	06:52 18:04	06:26 20:13	05:09 21:19	04:19 22:13	04:29 22:14	05:26 21:17	06:32 19:55	07:36 18:31	08:46 15:31
10	08:55 15:53	09:35 (1) 09:40 (1)	08:01 17:01	06:49 18:06	06:23 20:15	05:06 21:21	04:18 22:14	04:30 22:13	05:28 21:15	06:34 19:52	07:38 18:29	08:48 15:30
11	08:54 15:55	09:34 (1) 09:41 (1)	07:59 17:04	06:46 18:09	06:20 20:15	05:04 21:21	04:17 22:15	04:31 22:12	05:30 21:12	06:36 19:50	07:40 18:26	08:49 15:30
12	08:53 15:57	09:32 (1) 09:41 (1)	07:57 17:06	06:44 18:11	06:17 20:19	05:02 21:25	04:17 22:16	04:33 22:10	05:32 21:10	06:38 19:47	07:42 18:23	08:50 15:29
13	08:52 15:59	09:31 (1) 09:42 (1)	07:54 17:08	06:41 18:13	06:15 20:22	05:00 21:27	04:16 22:17	04:34 22:09	05:34 21:07	06:40 19:44	07:45 18:20	08:51 15:29
14	08:51 16:00	09:29 (1) 09:43 (1)	07:52 17:11	06:38 18:15	06:12 20:24	04:58 21:30	04:16 22:18	04:36 22:08	05:36 21:05	06:42 19:41	07:47 18:18	08:53 15:29
15	08:50 16:02	09:28 (1) 09:44 (1)	07:50 17:13	06:35 18:18	06:09 20:26	04:56 21:32	04:15 22:19	04:37 22:06	05:39 21:02	06:44 19:38	07:49 18:15	08:54 15:29
16	08:48 16:04	09:26 (1) 09:44 (1)	07:47 17:16	06:33 18:20	06:07 20:28	04:54 21:34	04:15 22:19	04:39 22:05	05:41 21:00	06:47 19:36	07:51 18:12	08:55 15:29
17	08:47 16:06	09:24 (1) 09:44 (1)	07:45 17:18	06:30 18:22	06:04 20:30	04:52 21:36	04:15 22:20	04:41 22:04	05:43 20:57	06:49 19:33	07:53 18:10	08:56 15:29
18	08:46 16:09	09:25 (1) 09:45 (1)	07:42 17:20	06:27 18:24	06:01 20:33	04:50 21:38	04:15 22:20	04:42 22:02	05:45 20:55	06:51 19:30	07:56 18:07	08:57 15:29
19	08:44 16:11	09:26 (1) 09:45 (1)	07:40 17:23	06:24 18:26	05:58 20:35	04:48 21:40	04:15 22:21	04:44 22:00	05:47 20:52	06:53 19:27	07:58 18:05	08:59 15:29
20	08:43 16:13	09:26 (1) 09:46 (1)	07:37 17:25	06:21 18:29	05:56 20:37	04:46 21:42	04:15 22:21	04:46 21:59	05:49 20:50	06:55 19:24	08:00 18:02	08:58 15:30
21	08:41 16:15	09:26 (1) 09:46 (1)	07:34 17:27	06:19 18:31	05:53 20:39	04:44 21:44	04:15 22:22	04:48 21:57	05:51 20:47	06:57 19:21	08:02 17:59	08:59 15:31
22	08:40 16:17	09:27 (1) 09:45 (1)	07:32 17:30	06:16 18:33	05:51 20:42	04:42 21:46	04:15 22:22	04:49 21:55	05:54 20:44	06:59 19:19	08:05 17:57	08:59 15:30
23	08:38 16:19	09:27 (1) 09:45 (1)	07:29 17:32	06:13 18:35	05:48 20:44	04:40 21:47	04:15 22:22	04:51 21:53	05:56 20:42	07:01 19:16	08:07 17:54	08:57 15:31
24	08:36 16:22	09:28 (1) 09:45 (1)	07:27 17:34	06:10 18:38	05:45 20:46	04:39 21:49	04:16 22:22	04:53 21:52	05:58 20:39	07:04 19:13	08:09 17:52	08:59 15:31
25	08:35 16:24	09:29 (1) 09:45 (1)	07:24 17:37	06:07 18:40	05:43 20:48	04:37 21:51	04:16 22:22	04:55 21:50	06:00 20:36	07:06 19:10	07:12 16:49	08:21 15:32
26	08:33 16:26	09:31 (1) 09:44 (1)	07:22 17:39	06:05 18:42	05:40 20:50	04:35 21:53	04:16 22:22	04:57 21:48	06:02 20:34	07:08 19:07	07:14 16:47	08:23 15:33
27	08:31 16:28	09:32 (1) 09:43 (1)	07:19 17:41	06:02 18:44	05:38 20:53	04:34 21:55	04:17 22:22	04:59 21:46	06:04 20:31	07:10 19:05	07:16 16:44	08:25 15:34
28	08:29 16:31	09:35 (1) 09:41 (1)	07:16 17:44	05:59 18:46	05:35 20:55	04:32 21:56	04:18 22:21	05:01 21:44	06:06 20:28	07:12 19:02	07:18 16:42	08:27 15:41
29	08:27 16:33			05:56 19:49	05:33 20:57	04:31 21:58	04:18 22:21	05:03 21:42	06:08 20:26	07:14 18:59	07:21 16:39	08:29 15:39
30	08:25 16:35			05:53 19:51	05:30 20:59	04:29 22:00	04:19 22:21	05:05 21:40	06:11 20:23	07:16 18:56	07:23 16:37	08:31 15:38
31	08:23 16:38			05:51 19:53		04:28 22:01		05:07 21:38	06:13 20:20		07:25 16:34	
Potential sun hours	227		262		429		539		539	475	386	321
Total, worst case	283											240
Sun reduction	0.11										0.08	0.06
Oper. time red.	1.00										1.00	1.00
Wind dir. red.	1.00										1.00	1.00
Total reduction	0.11										0.08	0.06
Total, real	31										21	15

Table layout: For each day in each month the following matrix apply

Day in month Sun rise (hh:mm) First time (hh:mm) with flicker (WTG causing flicker first time)
 Sun set (hh:mm) Minutes with flicker Last time (hh:mm) with flicker (WTG causing flicker last time)

Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Indranu iela 5 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (765)
Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	10:37 (5) 10:42 (5)	08:21 16:40	07:14 17:46	06:48 19:55	05:28 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32
2	09:00 15:41		08:19 16:42	07:11 17:48	06:45 19:57	05:25 21:04	04:26 22:04	04:21 22:20	05:11 21:33	06:17 20:15	07:21 18:51	07:30 16:30
3	09:00 15:42		08:17 16:45	07:08 17:50	06:42 20:00	05:23 21:06	04:24 22:06	04:22 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27
4	08:59 15:43		08:15 16:47	07:06 17:53	06:39 20:02	05:20 21:08	04:23 22:07	04:23 22:18	05:15 21:29	06:21 20:09	07:25 18:45	07:35 16:25
5	08:59 15:45		08:13 16:49	07:03 17:55	06:37 20:04	05:18 21:10	04:22 22:09	04:24 22:18	05:17 21:27	06:23 20:06	07:27 18:42	07:37 16:23
6	08:58 15:46		08:11 16:52	07:00 17:57	06:34 20:06	05:16 21:12	04:21 22:10	04:25 22:17	05:19 21:24	06:25 20:04	07:29 18:40	07:39 16:20
7	08:58 15:48		08:08 16:54	06:57 18:00	06:31 20:08	05:13 21:15	04:20 22:11	04:26 22:16	05:22 21:22	06:28 20:01	07:31 18:37	07:41 16:18
8	08:57 15:50		08:06 16:57	06:55 18:02	06:28 20:11	05:11 21:17	04:19 22:12	04:27 22:15	05:24 21:20	06:30 19:58	07:34 18:34	07:44 16:16
9	08:56 15:51		08:04 16:59	06:52 18:04	06:26 20:13	05:09 21:19	04:19 22:13	04:29 22:14	05:26 21:17	06:32 19:55	07:36 18:31	07:46 16:14
10	08:55 15:53	09:35 (1) 09:37 (1)	08:01 17:01	06:49 18:06	06:23 20:15	05:06 21:21	04:18 22:14	04:30 22:13	05:28 21:15	06:34 19:52	07:38 18:29	07:48 16:12
11	08:54 15:55	09:34 (1) 09:38 (1)	07:59 17:04	06:46 18:09	06:20 20:17	05:04 21:23	04:17 22:15	04:31 22:12	05:30 21:12	06:36 19:50	07:40 18:26	07:51 16:10
12	08:53 15:57	09:32 (1) 09:38 (1)	07:57 17:06	06:44 18:11	06:17 20:19	05:02 21:25	04:17 22:16	04:33 22:10	05:32 21:10	06:38 19:47	07:42 18:23	07:53 16:08
13	08:52 15:59	09:31 (1) 09:39 (1)	07:54 17:08	06:41 18:13	06:15 20:22	05:00 21:27	04:16 22:17	04:34 22:09	05:34 21:07	06:40 19:44	07:45 18:20	07:55 16:06
14	08:51 16:00	09:29 (1) 09:40 (1)	07:52 17:11	06:38 18:15	06:12 20:24	04:58 21:30	04:16 22:18	04:36 22:08	05:36 21:05	06:42 19:41	07:47 18:18	07:57 16:04
15	08:50 16:02	09:28 (1) 09:41 (1)	07:50 17:13	06:35 18:18	06:09 20:26	04:56 21:32	04:15 22:19	04:37 22:06	05:39 21:02	06:44 19:38	07:49 18:15	08:00 16:02
16	08:48 16:04	09:26 (1) 09:41 (1)	07:47 17:16	06:33 18:20	06:07 20:28	04:54 21:34	04:15 22:19	04:39 22:05	05:41 21:00	06:47 19:36	07:51 18:12	08:02 16:00
17	08:47 16:06	09:24 (1) 09:43 (1)	07:45 17:18	06:30 18:22	06:04 20:30	04:52 21:36	04:15 22:20	04:41 22:04	05:43 20:57	06:49 19:33	07:53 18:10	08:04 15:58
18	08:46 16:09	09:23 (1) 09:43 (1)	07:42 17:20	06:27 18:24	06:01 20:33	04:50 21:38	04:15 22:20	04:42 22:02	05:45 20:55	06:51 19:30	07:56 18:07	08:06 15:56
19	08:44 16:11	09:23 (1) 09:43 (1)	07:40 17:23	06:24 18:26	05:58 20:35	04:48 21:40	04:15 22:21	04:44 22:00	05:47 20:52	06:53 19:27	07:58 18:05	08:09 15:54
20	08:43 16:13	09:24 (1) 09:43 (1)	07:37 17:25	06:21 18:29	05:56 20:37	04:46 21:42	04:15 22:21	04:46 21:59	05:49 20:50	06:55 19:24	08:00 18:02	08:11 15:53
21	08:41 16:15	09:24 (1) 09:43 (1)	07:34 17:27	06:19 18:31	05:53 20:39	04:44 21:44	04:15 22:22	04:48 21:57	05:51 20:47	06:57 19:22	08:02 17:59	08:13 15:51
22	08:40 16:17	09:24 (1) 09:43 (1)	07:32 17:30	06:16 18:33	05:51 20:42	04:42 21:46	04:15 22:22	04:49 21:55	05:54 20:44	06:59 19:19	08:05 17:57	08:15 15:49
23	08:38 16:19	09:25 (1) 09:43 (1)	07:29 17:32	06:13 18:35	05:48 20:44	04:40 21:47	04:15 22:22	04:51 21:53	05:56 20:42	07:01 19:16	08:07 17:54	08:17 15:48
24	08:36 16:22	09:26 (1) 09:42 (1)	07:27 17:34	06:10 18:38	05:45 20:46	04:39 21:49	04:16 22:22	04:53 21:52	05:58 20:39	07:04 19:13	08:09 17:52	08:19 15:46
25	08:35 16:24	09:27 (1) 09:42 (1)	07:24 17:37	06:07 18:40	05:43 20:48	04:37 21:51	04:16 22:22	04:55 21:50	06:00 20:36	07:06 19:10	07:12 16:49	08:21 15:45
26	08:33 16:26	09:28 (1) 09:41 (1)	07:22 17:39	06:05 18:42	05:40 20:50	04:35 21:53	04:16 22:22	04:57 21:48	06:02 20:34	07:08 19:07	07:14 16:47	08:23 15:43
27	08:31 16:28	09:30 (1) 09:40 (1)	07:19 17:41	06:02 18:44	05:38 20:53	04:34 21:55	04:17 22:22	04:59 21:46	06:04 20:31	07:10 19:05	07:16 16:44	08:25 15:42
28	08:29 16:31	09:33 (1) 09:38 (1)	07:16 17:44	05:59 18:46	05:35 20:55	04:32 21:56	04:18 22:21	05:01 21:44	06:06 20:28	07:12 19:02	07:18 16:42	08:27 15:41
29	08:27 16:33			05:56 19:49	05:33 20:57	04:31 21:58	04:18 22:21	05:03 21:42	06:08 20:26	07:14 18:59	07:21 16:39	08:29 15:39
30	08:25 16:35			06:53 19:51	05:30 20:59	04:29 22:00	04:19 22:21	05:05 21:40	06:11 20:23	07:16 18:56	07:23 16:37	08:31 15:38
31	08:23 16:38			06:51 19:53		04:28 22:01		05:07 21:38	06:13 20:20		07:25 16:34	
Potential sun hours	227		262		429		539		539	475	386	321
Total, worst case	254											244
Sun reduction	0.11											0.08
Oper. time red.	1.00											1.00
Wind dir. red.	1.00											1.00
Total reduction	0.11											0.08
Total, real	28											19

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Last time (hh:mm) with flicker	(WTG causing flicker last time)

Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Indranu iela 8 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (741)
Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:14 17:46	06:48 19:55	05:28 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
2	09:00 15:41	08:19 16:42	07:11 17:48	06:45 19:57	05:25 21:04	04:26 22:04	04:21 22:20	05:11 21:33	06:17 20:15	07:21 18:51	07:30 16:30	08:35 15:36
3	09:00 15:42	09:42 (1) 16:45	07:08 17:50	06:42 20:00	05:23 21:06	04:24 22:06	04:22 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:37 15:35
4	08:59 15:43	09:41 (1) 16:47	07:06 17:53	06:39 20:02	05:20 21:08	04:23 22:07	04:23 22:18	05:15 21:29	06:21 20:09	07:25 18:45	07:35 16:25	08:38 15:34
5	08:59 15:45	09:41 (1) 16:49	07:03 17:55	06:37 20:04	05:18 21:10	04:22 22:09	04:24 22:18	05:17 21:27	06:23 20:06	07:27 18:42	07:37 16:23	08:40 15:33
6	08:58 15:46	09:40 (1) 16:52	07:00 17:57	06:34 20:06	05:16 21:12	04:21 22:10	04:25 22:17	05:19 21:24	06:25 20:04	07:29 18:40	07:39 16:20	08:42 15:33
7	08:58 15:48	09:39 (1) 16:54	06:57 18:00	06:31 20:08	05:13 21:15	04:20 22:11	04:26 22:16	05:22 21:22	06:28 20:01	07:31 18:37	07:41 16:18	08:43 15:32
8	08:57 15:50	09:37 (1) 16:56	06:55 18:02	06:28 20:11	05:11 21:17	04:19 22:12	04:27 22:15	05:24 21:20	06:30 19:58	07:34 18:34	07:44 16:16	08:45 15:31
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10	08:55 15:53	09:35 (1) 17:01	06:49 18:06	06:23 20:15	05:06 21:21	04:18 22:14	04:30 22:13	05:28 21:15	06:34 19:52	07:38 18:29	07:48 16:12	08:48 15:30
11	08:54 15:55	09:34 (1) 17:04	06:46 18:09	06:20 20:17	05:04 21:23	04:17 22:15	04:31 22:12	05:30 21:12	06:36 19:50	07:40 18:26	07:51 16:10	08:49 15:30
12	08:53 15:57	09:32 (1) 17:06	06:44 18:11	06:17 20:19	05:02 21:25	04:17 22:16	04:33 22:10	05:32 21:10	06:38 19:47	07:42 18:23	07:53 16:08	08:50 15:29
13	08:52 15:59	09:31 (1) 17:08	06:41 18:13	06:15 20:22	05:00 21:27	04:16 22:17	04:34 22:09	05:34 21:07	06:40 19:44	07:45 18:20	07:55 16:06	08:51 15:29
14	08:51 16:00	09:31 (1) 17:11	06:38 18:15	06:12 20:24	04:58 21:30	04:16 22:18	04:36 22:08	05:36 21:05	06:42 19:41	07:47 18:18	07:57 16:04	08:53 15:29
15	08:50 16:02	09:32 (1) 17:13	06:35 18:18	06:09 20:26	04:56 21:32	04:15 22:19	04:37 22:06	05:39 21:02	06:44 19:38	07:49 18:15	08:00 16:02	08:54 15:29
16	08:48 16:04	09:32 (1) 17:16	06:33 18:20	06:06 20:28	04:54 21:34	04:15 22:19	04:39 22:05	05:41 21:00	06:47 19:36	07:51 18:12	08:02 16:00	08:55 15:29
17	08:47 16:06	09:32 (1) 17:18	06:30 18:22	06:04 20:30	04:52 21:36	04:15 22:20	04:41 22:04	05:43 20:57	06:49 19:33	07:53 18:10	08:04 15:58	08:56 15:29
18	08:46 16:09	09:34 (1) 17:20	06:27 18:24	06:01 20:33	04:50 21:38	04:15 22:20	04:42 22:02	05:45 20:55	06:51 19:30	07:56 18:07	08:06 15:56	08:57 15:29
19	08:44 16:11	09:34 (1) 17:23	06:24 18:26	05:58 20:35	04:48 21:40	04:15 22:21	04:44 22:00	05:47 20:52	06:53 19:27	07:58 18:04	08:09 15:54	08:57 15:29
20	08:43 16:13	09:35 (1) 17:25	06:21 18:29	05:56 20:37	04:46 21:42	04:15 22:21	04:46 22:00	05:49 20:50	06:55 19:24	08:00 18:02	08:11 15:53	08:58 15:30
21	08:41 16:15	09:36 (1) 17:27	06:19 18:31	05:53 20:39	04:44 21:44	04:15 22:22	04:48 22:00	05:51 20:47	06:57 19:21	08:02 17:59	08:13 15:51	08:59 15:30
22	08:40 16:17	09:37 (1) 17:30	06:16 18:33	05:51 20:42	04:42 21:46	04:15 22:22	04:49 22:00	05:54 20:44	06:59 19:19	08:05 17:57	08:15 15:49	08:59 15:30
23	08:38 16:19	09:38 (1) 17:32	06:13 18:35	05:48 20:44	04:40 21:47	04:15 22:22	04:51 22:00	05:56 20:42	07:01 19:16	08:07 17:54	08:17 15:48	09:00 15:31
24	08:36 16:22	09:40 (1) 17:34	06:10 18:38	05:45 20:46	04:39 21:49	04:16 22:22	04:53 22:00	05:58 20:39	07:04 19:13	08:09 17:52	08:19 15:46	09:00 15:31
25	08:35 16:24	09:48 (1) 17:37	06:07 18:40	05:43 20:48	04:37 21:51	04:16 22:22	04:55 22:00	06:00 20:36	07:06 19:10	07:12 16:49	08:21 15:45	09:00 15:32
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28	08:29 16:31	07:16 17:44	05:59 18:46	05:35 20:55	04:32 21:56	04:18 22:21	05:01 22:00	06:06 20:28	07:12 19:02	07:18 16:42	08:27 15:41	09:01 15:35
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30	08:25 16:35	07:11 17:51	05:53 18:55	05:30 20:59	04:29 22:00	04:19 22:21	05:05 22:00	06:11 20:23	07:16 18:56	07:23 16:37	08:31 15:38	09:01 15:37
31	08:23 16:38	07:08 17:53	05:51 18:58	04:28 22:01	04:28 22:01	04:19 22:21	05:07 22:00	06:13 20:20	07:13 18:56	07:25 16:34	08:31 15:38	09:01 15:38
Potential sun hours	227	262	365	429	515	539	539	475	386	321	241	207
Total, worst case	298										219	81
Sun reduction	0.11										0.08	0.06
Oper. time red.	1.00										1.00	1.00
Wind dir. red.	1.00										1.00	1.00
Total reduction	0.11										0.08	0.06
Total, real	33										17	5

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)		Last time (hh:mm) with flicker	(WTG causing flicker last time)

Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa
Assumptions for shadow calculations

Shadow receptor: Jasmini - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (800)
Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:00 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:27 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:27 16:32	08:33 15:37
2	09:00 15:40	08:19 16:42	07:11 17:48	06:45 19:57	05:25 21:04	04:25 22:04	04:20 22:20	05:11 21:33	06:17 20:15	07:20 18:50	07:30 16:29	08:35 15:36
3	09:00 15:42	08:17 16:44	07:08 17:50	06:42 19:59	05:23 21:06	04:24 22:06	04:21 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:37 15:35
4	08:59 15:43	08:15 16:47	07:05 17:53	06:39 20:02	05:20 21:08	04:23 22:07	04:22 22:18	05:15 21:29	06:21 20:09	07:25 18:45	07:34 16:25	08:38 15:34
5	08:59 15:45	08:13 16:49	07:03 17:55	06:36 20:04	05:18 21:10	04:22 22:08	04:23 22:18	05:17 21:26	06:23 20:06	07:27 18:42	07:37 16:23	08:40 15:33
6	08:58 15:46	08:10 16:52	07:00 17:57	06:34 20:06	05:15 21:12	04:21 22:10	04:25 22:17	05:19 21:24	06:25 20:03	07:29 18:39	07:39 16:20	08:42 15:32
7	08:57 15:48	08:08 16:54	06:57 17:59	06:31 20:08	05:13 21:14	04:20 22:11	04:26 22:16	05:21 21:22	06:27 20:01	07:31 18:37	07:41 16:18	08:43 15:32
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9	08:56 15:51	08:04 16:59	06:52 18:04	06:25 20:13	05:09 21:19	04:18 22:13	04:28 22:14	05:26 21:17	06:32 19:55	07:36 18:31	07:46 16:14	08:46 15:30
10	08:55 15:53	08:01 17:01	06:49 18:06	06:23 20:15	05:06 21:21	04:18 22:14	04:30 22:13	05:28 21:15	06:34 19:52	07:38 18:28	07:48 16:12	08:48 15:30
11	08:54 15:55	07:59 17:03	06:46 18:08	06:20 20:17	05:04 21:23	04:17 22:15	04:31 22:12	05:30 21:12	06:36 19:49	07:40 18:26	07:51 16:09	08:49 15:30
12	08:53 15:56	07:57 17:06	06:43 18:11	06:17 20:19	05:02 21:25	04:16 22:16	04:33 22:10	05:32 21:10	06:38 19:47	07:42 18:23	07:53 16:07	08:50 15:29
13	08:52 15:58	07:54 17:08	06:41 18:13	06:14 20:21	05:00 21:27	04:16 22:17	04:34 22:09	05:34 21:07	06:40 19:44	07:44 18:20	07:55 16:05	08:51 15:29
14	08:51 16:00	07:52 17:11	06:38 18:15	06:12 20:24	04:58 21:29	04:16 22:18	04:36 22:08	05:36 21:05	06:42 19:41	07:47 18:18	07:57 16:03	08:52 15:29
15	08:50 16:02	07:49 17:13	06:35 18:17	06:09 20:26	04:56 21:31	04:15 22:19	04:37 22:06	05:38 21:02	06:44 19:38	07:49 18:15	08:00 16:02	08:54 15:29
16	08:48 16:04	07:47 17:15	06:32 18:20	06:06 20:28	04:53 21:34	04:15 22:19	04:39 22:05	05:40 21:00	06:46 19:35	07:51 18:12	08:02 16:00	08:55 15:29
17	08:47 16:06	07:44 17:18	06:30 18:22	06:04 20:30	04:51 21:36	04:15 22:20	04:40 22:03	05:43 20:57	06:49 19:33	07:53 18:10	08:04 15:58	08:56 15:29
18	08:46 16:08	07:42 17:20	06:27 18:24	06:01 20:33	04:49 21:38	04:15 22:20	04:42 22:02	05:45 20:55	06:51 19:30	07:56 18:07	08:06 15:56	08:56 15:29
19	08:44 16:10	07:39 17:22	06:24 18:26	05:58 20:35	04:48 21:40	04:14 22:21	04:44 22:00	05:47 20:52	06:53 19:27	07:58 18:04	08:08 15:54	08:57 15:29
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21	08:41 16:15	07:34 17:27	06:18 18:31	05:53 20:39	04:44 21:43	04:15 22:21	04:47 21:57	05:51 20:47	06:57 19:21	08:02 17:59	08:13 15:51	08:59 15:30
22	08:39 16:17	07:32 17:29	06:16 18:33	05:50 20:41	04:42 21:45	04:15 22:22	04:49 21:55	05:53 20:44	06:59 19:19	08:05 17:57	08:15 15:49	08:59 15:30
23	08:38 16:19	07:29 17:32	06:13 18:35	05:48 20:44	04:40 21:47	04:15 22:22	04:51 21:53	05:55 20:42	07:01 19:16	08:07 17:54	08:17 15:48	09:00 15:31
24	08:36 16:21	07:27 17:34	06:10 18:37	05:45 20:46	04:38 21:49	04:15 22:22	04:53 21:51	05:58 20:39	07:03 19:13	08:09 17:51	08:19 15:46	09:00 15:31
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29	08:27 16:33		06:56 19:48	05:32 20:57	04:31 21:58	04:18 22:21	05:03 21:42	06:08 20:25	07:14 18:59	07:21 16:39	08:29 15:39	09:01 15:35
30	08:25 16:35		06:53 19:51	05:30 20:59	04:29 22:00	04:19 22:21	05:05 21:40	06:10 20:23	07:16 18:56	07:23 16:37	08:31 15:38	09:01 15:36
31	08:23 16:37		06:50 19:53		04:28 22:01		05:07 21:37	06:13 20:20		07:25 16:34		09:01 15:38
Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Jaunpaukas - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (593)
 Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:00 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:27 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:27 16:32	08:33 15:37
2	09:00 15:40	08:19 16:42	07:11 17:48	06:45 19:57	05:25 21:03	04:25 22:04	04:20 22:20	05:11 21:33	06:17 20:15	07:20 18:50	07:30 16:29	08:35 15:36
3	09:00 15:42	08:17 16:44	07:08 17:50	06:42 19:59	05:23 21:06	04:24 22:06	04:21 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:37 15:35
4	08:59 15:43	08:15 16:47	07:05 17:53	06:39 20:02	05:20 21:08	04:23 22:07	04:22 22:18	05:15 21:29	06:21 20:09	07:25 18:45	07:34 16:25	08:38 15:34
5	08:59 15:45	08:13 16:49	07:03 17:55	06:36 20:04	05:18 21:10	04:22 22:08	04:23 22:17	05:17 21:26	06:23 20:06	07:27 18:42	07:37 16:22	08:40 15:33
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7	08:57 15:48	08:08 16:54	06:57 17:59	06:31 20:08	05:13 21:14	04:20 22:11	04:26 22:16	05:21 21:22	06:27 20:01	07:31 18:37	07:41 16:18	08:43 15:32
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19	08:44 16:10	07:39 17:22	06:24 18:26	05:58 20:35	04:48 21:40	04:14 22:21	04:44 22:00	05:47 20:52	06:53 19:27	07:58 18:04	08:08 15:54	08:57 15:29
20	08:43 16:13	07:37 17:25	06:21 18:28	05:56 20:37	04:46 21:41	04:15 22:21	04:46 21:59	05:49 20:49	06:55 19:24	08:00 18:02	08:11 15:52	08:58 15:29
21	08:41 16:15	07:34 17:27	06:18 18:31	05:53 20:39	04:44 21:43	04:15 22:21	04:47 21:57	05:51 20:47	06:57 19:21	08:02 17:59	08:13 15:51	08:59 15:30
22	08:39 16:17	07:32 17:29	06:16 18:33	05:50 20:41	04:42 21:45	04:15 22:22	04:49 21:55	05:53 20:44	06:59 19:18	08:05 17:57	08:15 15:49	08:59 15:30
23	08:38 16:19	07:29 17:32	06:13 18:35	05:48 20:44	04:40 21:47	04:15 22:22	04:51 21:53	05:55 20:42	07:01 19:16	08:07 17:54	08:17 15:48	09:00 15:31
24	08:36 16:21	07:27 17:34	06:10 18:37	05:45 20:46	04:38 21:49	04:15 22:22	04:53 21:51	05:58 20:39	07:03 19:13	08:09 17:51	08:19 15:46	09:00 15:31
25	08:34 16:24	07:24 17:36	06:07 18:40	05:43 20:48	04:37 21:51	04:16 22:22	04:55 21:50	06:00 20:36	07:05 19:10	07:11 16:49	08:21 15:45	09:00 15:32
26	08:33 16:26	07:21 17:39	06:04 18:42	05:40 20:50	04:35 21:53	04:16 22:22	04:57 21:48	06:02 20:34	07:08 19:07	07:14 16:46	08:23 15:43	09:01 15:33
27	08:31 16:28	07:19 17:41	06:02 18:44	05:37 20:52	04:34 21:54	04:17 22:22	04:59 21:46	06:04 20:31	07:10 19:04	07:16 16:44	08:25 15:42	09:01 15:34
28	08:29 16:30	07:16 17:43	05:59 18:46	05:35 20:55	04:32 21:56	04:17 22:21	05:01 21:44	06:06 20:28	07:12 19:02	07:18 16:41	08:27 15:41	09:01 15:34
29	08:27 16:33		06:56 19:48	05:32 20:57	04:31 21:58	04:18 22:21	05:03 21:42	06:08 20:25	07:14 18:59	07:21 16:39	08:29 15:39	09:01 15:35
30	08:25 16:35		06:53 19:51	05:30 20:59	04:29 22:00	04:19 22:21	05:05 21:40	06:10 20:23	07:16 18:56	07:23 16:37	08:31 15:38	09:01 15:36
31	08:23 16:37		06:50 19:53		04:28 22:01		05:07 21:37	06:13 20:20		07:25 16:34		09:01 15:38
Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Jauntilgali - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (787)
Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December	
1	09:01 15:39	09:49 (3) 11:50 (5)	08:21 16:40	09:39 (1) 10:01 (1)	07:14 17:46	06:48 19:55	05:28 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32
2	09:00 15:41	09:51 (3) 11:51 (5)	08:19 16:42	09:41 (1) 10:00 (1)	07:11 17:48	06:45 19:57	05:25 21:04	04:26 22:04	04:21 22:20	05:11 21:33	06:17 20:15	07:21 18:51	07:30 16:30
3	09:00 15:42	09:42 (1) 11:50 (5)	08:17 16:45	09:43 (1) 09:45 (1)	07:08 17:50	06:42 19:59	05:23 21:06	04:24 22:06	04:22 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27
4	08:59 15:43	09:41 (1) 11:50 (5)	08:15 16:47	09:45 (1) 09:56 (1)	07:05 17:53	06:39 20:02	05:20 21:08	04:23 22:07	04:23 22:18	05:15 21:29	06:21 20:09	07:25 18:45	07:35 16:25
5	08:59 15:45	09:40 (1) 11:50 (5)	08:13 16:49		07:03 17:55	06:37 20:04	05:18 21:10	04:22 22:08	04:24 22:18	05:17 21:26	06:23 20:06	07:27 18:42	07:37 16:23
6	08:58 15:46	09:39 (1) 11:50 (5)	08:10 16:52		07:00 17:57	06:34 20:06	05:16 21:12	04:21 22:10	04:25 22:17	05:19 21:24	06:25 20:04	07:29 18:40	07:39 16:20
7	08:58 15:48	09:38 (1) 11:49 (5)	08:08 16:54		06:57 18:00	06:31 20:08	05:13 21:15	04:20 22:11	04:26 22:16	05:22 20:01	06:28 20:01	07:31 18:37	07:41 16:18
8	08:57 15:50	09:37 (1) 11:49 (5)	08:06 16:56		06:55 18:02	06:28 20:11	05:11 21:17	04:19 22:12	04:27 22:15	05:24 21:20	06:30 19:58	07:44 18:34	07:44 16:16
9	08:56 15:51	09:36 (1) 11:48 (5)	08:04 16:59		06:52 18:04	06:26 20:13	05:09 21:19	04:19 22:13	04:29 22:14	05:26 21:17	06:32 19:55	07:36 18:31	07:46 16:14
10	08:55 15:53	09:35 (1) 11:47 (5)	08:01 17:01		06:49 18:06	06:23 20:15	05:06 21:21	04:18 22:14	04:30 22:13	05:28 21:15	06:34 19:52	07:38 18:29	07:48 16:12
11	08:54 15:55	09:34 (1) 10:11 (3)	07:59 17:04		06:46 18:09	06:20 20:17	05:04 21:23	04:17 22:15	04:31 22:12	05:30 21:12	06:36 19:50	07:40 18:26	07:51 16:10
12	08:53 15:57	09:33 (1) 10:10 (3)	07:57 17:06		06:44 18:11	06:17 20:19	05:02 21:25	04:17 22:16	04:33 22:10	05:32 21:10	06:38 19:47	07:42 18:23	07:53 16:08
13	08:52 15:59	09:34 (1) 10:10 (3)	07:54 17:08		06:41 18:13	06:15 20:22	05:00 21:27	04:16 22:17	04:34 22:09	05:34 21:07	06:40 19:44	07:45 18:20	07:55 16:06
14	08:51 16:00	09:33 (1) 10:08 (3)	07:52 17:11		06:38 18:15	06:12 20:24	05:04 21:29	04:16 22:18	04:36 22:08	05:36 21:05	06:42 19:41	07:47 18:18	07:57 16:04
15	08:50 16:02	09:33 (1) 10:07 (3)	07:49 17:13		06:35 18:18	06:09 20:26	05:04 21:32	04:15 22:19	04:37 22:06	05:39 21:02	06:44 19:38	07:49 18:15	08:00 16:02
16	08:48 16:04	09:33 (1) 10:00 (1)	07:47 17:15		06:32 18:20	06:06 20:28	05:04 21:34	04:15 22:19	04:39 22:05	05:41 21:00	06:47 19:36	07:51 18:12	08:02 16:00
17	08:47 16:06	09:33 (1) 10:00 (1)	07:45 17:18		06:30 18:22	06:04 20:30	05:04 21:36	04:15 22:20	04:41 22:03	05:43 20:57	06:49 19:33	07:53 18:10	08:04 15:58
18	08:46 16:09	09:33 (1) 10:02 (1)	07:42 17:20		06:27 18:24	06:01 20:33	05:00 21:38	04:15 22:20	04:42 22:02	05:45 20:55	06:51 19:30	07:56 18:07	08:06 15:56
19	08:44 16:11	09:33 (1) 10:02 (1)	07:40 17:23		06:24 18:26	05:58 20:35	05:04 21:40	04:15 22:21	04:44 22:00	05:47 20:52	06:53 19:27	07:58 18:04	08:09 15:54
20	08:43 16:13	09:33 (1) 10:02 (1)	07:37 17:25		06:21 18:29	05:56 20:37	05:04 21:42	04:15 22:21	04:46 22:00	05:49 20:52	06:55 19:27	08:00 18:04	08:11 15:54
21	08:41 16:15	09:33 (1) 10:03 (1)	07:34 17:27		06:19 18:31	05:53 20:39	05:04 21:44	04:15 22:21	04:48 21:57	05:51 20:47	06:57 19:21	08:02 17:59	08:13 15:51
22	08:40 16:17	09:34 (1) 10:03 (1)	07:32 17:30		06:16 18:33	05:51 20:41	05:04 21:45	04:15 22:22	04:49 21:55	05:53 20:44	06:59 19:19	08:05 17:57	08:15 15:49
23	08:38 16:19	09:34 (1) 10:03 (1)	07:29 17:32		06:13 18:35	05:48 20:44	05:04 21:47	04:15 22:22	04:51 21:53	05:56 20:42	07:01 19:16	08:07 17:54	08:17 15:48
24	08:36 16:22	09:34 (1) 10:04 (1)	07:27 17:34		06:10 18:37	05:45 20:46	05:04 21:49	04:16 22:22	04:53 21:52	05:58 20:39	07:03 19:13	08:09 17:52	08:19 15:46
25	08:34 16:24	09:35 (1) 10:04 (1)	07:24 17:37		06:07 18:40	05:43 20:48	05:04 21:51	04:16 22:22	04:55 21:50	06:00 20:36	07:06 19:10	07:12 16:49	08:21 15:45
26	08:33 16:26	09:35 (1) 10:04 (1)	07:21 17:39		06:05 18:42	05:40 20:50	05:04 21:53	04:16 22:22	04:57 21:48	06:02 20:34	07:08 19:07	07:14 16:47	08:23 15:43
27	08:31 16:28	09:36 (1) 10:04 (1)	07:19 17:41		06:02 18:44	05:38 20:53	05:04 21:55	04:17 22:22	04:59 21:46	06:04 20:31	07:10 19:05	07:16 16:44	08:25 15:42
28	08:29 16:31	09:37 (1) 10:04 (1)	07:16 17:44		05:59 18:46	05:35 20:55	05:04 21:56	04:18 22:21	05:01 21:44	06:06 20:28	07:12 19:02	07:18 16:42	08:27 15:41
29	08:27 16:33	09:37 (1) 10:03 (1)			06:56 19:48	05:33 20:57	05:04 21:58	04:31 22:21	05:03 21:42	06:08 20:26	07:14 18:59	07:21 16:39	08:29 15:39
30	08:25 16:35	09:38 (1) 10:03 (1)			06:53 19:51	05:30 20:59	05:04 22:00	04:29 22:21	05:05 21:40	06:11 20:23	07:16 18:56	07:23 16:37	08:31 15:38
31	08:23 16:38	09:39 (1) 10:02 (1)			06:51 19:53		04:28 22:01		05:07 21:38	06:13 20:20	07:25 16:34		08:36 15:38
Potential sun hours	227	262	365	429	515	539	538	475	386	321	241	650	1426
Total, worst case	1070											0.08	0.06
Sun reduction	0.11	0.19										1.00	1.00
Oper. time red.	1.00	1.00										1.00	1.00
Wind dir. red.	1.00	0.19										0.08	0.06
Total reduction	0.11	0.19										0.08	0.06
Total, real	117	13										51	88

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Last time (hh:mm) with flicker	(WTG causing flicker last time)

Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Jaunzemes - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (789)
 Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January			February			March			April	May	June
1	09:01		08:21		07:14	07:41 (1)	06:48	05:28	04:27			
	15:40		16:40		17:46	5 07:46 (1)	19:55	21:01	22:03			
2	09:00	09:43 (6)	08:19		07:11	07:38 (1)	06:45	05:25	04:26			
	15:41	2 09:45 (6)	16:42		17:48	8 07:46 (1)	19:57	21:04	22:04			
3	09:00	09:42 (6)	08:17		07:08	07:35 (1)	06:42	05:23	04:24			
	15:42	4 09:46 (6)	16:45		17:51	11 07:46 (1)	20:00	21:06	22:06			
4	08:59	09:41 (6)	08:15		07:06	07:33 (1)	06:39	05:20	04:23			
	15:44	6 09:47 (6)	16:47		17:53	14 07:47 (1)	20:02	21:08	22:07			
5	08:59	09:40 (6)	08:13	08:44 (9)	07:03	07:30 (1)	06:37	05:18	04:22			
	15:45	7 09:47 (6)	16:49	4 08:48 (9)	17:55	16 07:46 (1)	20:04	21:10	22:09			
6	08:58	09:40 (6)	08:11	08:42 (9)	07:00	07:30 (1)	06:34	05:16	04:21			
	15:47	9 09:49 (6)	16:52	7 08:49 (9)	17:57	15 07:45 (1)	20:06	21:12	22:10			
7	08:58	09:39 (6)	08:08	08:39 (9)	06:57	07:31 (1)	06:31	05:13	04:20			
	15:48	11 09:50 (6)	16:54	10 08:49 (9)	18:00	13 07:44 (1)	20:08	21:15	22:11			
8	08:57	09:37 (6)	08:06	08:37 (9)	06:55	07:32 (1)	06:28	05:11	04:20			
	15:50	13 09:50 (6)	16:57	13 08:50 (9)	18:02	10 07:42 (1)	20:11	21:17	22:12			
9	08:56	09:36 (6)	08:04	08:34 (9)	06:52		06:26	05:09	04:19			
	15:51	15 09:51 (6)	16:59	16 08:50 (9)	18:04		20:13	21:19	22:13			
10	08:55	09:35 (6)	08:01	08:33 (9)	06:49		06:23	05:07	04:18			
	15:53	17 09:52 (6)	17:01	17 08:50 (9)	18:06		20:15	21:21	22:14			
11	08:54	09:34 (6)	07:59	08:33 (9)	06:46		06:20	05:04	04:17			
	15:55	19 09:53 (6)	17:04	17 08:50 (9)	18:09		20:17	21:23	22:15			
12	08:53	09:32 (8)	07:57	08:27 (5)	06:44		06:17	05:02	04:17			
	15:57	21 09:53 (6)	17:06	21 08:50 (9)	18:11		20:19	21:25	22:16			
13	08:52	09:31 (8)	07:54	08:24 (5)	06:41		06:15	05:00	04:16			
	15:59	23 09:54 (6)	17:08	23 08:48 (9)	18:13		20:22	21:27	22:17			
14	08:51	09:29 (8)	07:52	08:21 (5)	06:38		06:12	04:58	04:16			
	16:01	25 09:54 (6)	17:11	24 08:46 (9)	18:15		20:24	21:30	22:18			
15	08:50	09:28 (8)	07:50	08:19 (5)	06:35		06:09	04:56	04:16			
	16:03	27 09:55 (6)	17:13	21 08:44 (9)	18:18		20:26	21:32	22:19			
16	08:48	09:26 (8)	07:47	08:16 (5)	06:33		06:07	04:54	04:15			
	16:05	30 09:56 (6)	17:16	19 08:35 (5)	18:20		20:28	21:34	22:19			
17	08:47	09:24 (8)	07:45	08:14 (5)	06:30		06:04	04:52	04:15			
	16:07	32 09:56 (6)	17:18	21 08:35 (5)	18:22		20:30	21:36	22:20			
18	08:46	09:24 (8)	07:42	08:14 (5)	06:27		06:01	04:50	04:15			
	16:09	33 09:57 (6)	17:20	21 08:35 (5)	18:24		20:33	21:38	22:20			
19	08:44	09:24 (8)	07:40	08:14 (5)	06:24		05:59	04:48	04:15			
	16:11	33 09:57 (6)	17:23	21 08:35 (5)	18:27		20:35	21:40	22:21			
20	08:43	09:25 (8)	07:37	08:14 (5)	06:21		05:56	04:46	04:15			
	16:13	32 09:57 (6)	17:25	20 08:34 (5)	18:29		20:37	21:42	22:21			
21	08:41	09:25 (8)	07:35	08:15 (5)	06:19		05:53	04:44	04:15			
	16:15	32 09:57 (6)	17:27	19 08:34 (5)	18:31		20:39	21:44	22:22			
22	08:40	09:26 (8)	07:32	08:16 (5)	06:16		05:51	04:42	04:15			
	16:17	30 09:56 (6)	17:30	17 08:33 (5)	18:33		20:42	21:46	22:22			
23	08:38	09:27 (8)	07:29	08:17 (5)	06:13		05:48	04:41	04:15			
	16:19	29 09:56 (6)	17:32	14 08:31 (5)	18:35		20:44	21:47	22:22			
24	08:36	09:28 (8)	07:27	08:19 (5)	06:10		05:45	04:39	04:16			
	16:22	28 09:56 (6)	17:34	11 08:30 (5)	18:38		20:46	21:49	22:22			
25	08:35	09:29 (8)	07:24		06:07		05:43	04:37	04:16			
	16:24	26 09:55 (6)	17:37		18:40		20:48	21:51	22:22			
26	08:33	09:31 (8)	07:22		06:05		05:40	04:36	04:17			
	16:26	20 09:54 (6)	17:39		18:42		20:50	21:53	22:22			
27	08:31	09:43 (6)	07:19		06:02		05:38	04:34	04:17			
	16:28	10 09:53 (6)	17:41		18:44		20:53	21:55	22:22			
28	08:29	09:47 (6)	07:16	07:44 (1)	05:59		05:35	04:32	04:18			
	16:31	3 09:50 (6)	17:44	2 07:46 (1)	18:46		20:55	21:56	22:21			
29	08:27				06:56		05:33	04:31	04:18			
	16:33				19:49		20:57	21:58	22:21			
30	08:25				06:53		05:30	04:30	04:19			
	16:35				19:51		20:59	22:00	22:21			
31	08:23				06:51			04:28				
	16:38				19:53			22:01				
Potential sun hours	227		262		365		429	515	539			
Total, worst case	537		338		92							
Sun reduction	0.11		0.19		0.40							
Oper. time red.	1.00		1.00		1.00							
Wind dir. red.	1.00		1.00		1.00							
Total reduction	0.11		0.19		0.40							
Total, real	59		66		37							

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Jaunzemes - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (789)
Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	July	August	September	October		November		December	
1	04:20	05:09	06:15	07:19		07:28	08:02 (9)	08:33	09:16 (6)
	22:20	21:35	20:17	18:53		16:32	18 08:20 (9)	15:37	19 09:35 (6)
2	04:21	05:11	06:17	07:21		07:30	08:04 (9)	08:35	09:18 (6)
	22:20	21:33	20:15	18:51		16:30	15 08:19 (9)	15:36	17 09:35 (6)
3	04:22	05:13	06:19	07:23		07:32	08:07 (9)	08:37	09:20 (6)
	22:19	21:31	20:12	18:48		16:27	13 08:20 (9)	15:35	15 09:35 (6)
4	04:23	05:15	06:21	07:25		07:35	08:09 (9)	08:38	09:22 (6)
	22:18	21:29	20:09	18:45		16:25	10 08:19 (9)	15:34	13 09:35 (6)
5	04:24	05:17	06:23	07:27	08:11 (1)	07:37	08:12 (9)	08:40	09:24 (6)
	22:18	21:27	20:06	18:42	6 08:17 (1)	16:23	7 08:19 (9)	15:34	11 09:35 (6)
6	04:25	05:20	06:26	07:29	08:08 (1)	07:39	08:14 (9)	08:42	09:25 (6)
	22:17	21:24	20:04	18:40	11 08:19 (1)	16:21	4 08:18 (9)	15:33	9 09:34 (6)
7	04:26	05:22	06:28	07:32	08:06 (1)	07:42		08:43	09:27 (6)
	22:16	21:22	20:01	18:37	14 08:20 (1)	16:18		15:32	8 09:35 (6)
8	04:27	05:24	06:30	07:34	08:06 (1)	07:44		08:45	09:29 (6)
	22:15	21:20	19:58	18:34	15 08:21 (1)	16:16		15:31	6 09:35 (6)
9	04:29	05:26	06:32	07:36	08:06 (1)	07:46		08:46	09:31 (6)
	22:14	21:17	19:55	18:31	15 08:21 (1)	16:14		15:31	4 09:35 (6)
10	04:30	05:28	06:34	07:38	08:08 (1)	07:48		08:48	09:32 (6)
	22:13	21:15	19:52	18:29	13 08:21 (1)	16:12		15:30	2 09:34 (6)
11	04:31	05:30	06:36	07:40	08:11 (1)	07:51		08:49	
	22:12	21:12	19:50	18:26	10 08:21 (1)	16:10		15:30	
12	04:33	05:32	06:38	07:42	08:13 (1)	07:53		08:50	
	22:10	21:10	19:47	18:23	7 08:20 (1)	16:08		15:30	
13	04:34	05:34	06:40	07:45	08:15 (1)	07:55		08:51	
	22:09	21:07	19:44	18:21	4 08:19 (1)	16:06		15:29	
14	04:36	05:36	06:42	07:47		07:58	09:19 (6)	08:53	
	22:08	21:05	19:41	18:18		16:04	3 09:22 (6)	15:29	
15	04:37	05:39	06:45	07:49		08:00	09:16 (6)	08:54	
	22:06	21:02	19:38	18:15		16:02	10 09:26 (6)	15:29	
16	04:39	05:41	06:47	07:51		08:02	09:04 (8)	08:55	
	22:05	21:00	19:36	18:12		16:00	20 09:27 (6)	15:29	
17	04:41	05:43	06:49	07:54	08:53 (5)	08:04	09:03 (8)	08:56	
	22:04	20:57	19:33	18:10	6 08:59 (5)	15:58	26 09:29 (6)	15:29	
18	04:42	05:45	06:51	07:56	08:49 (5)	08:06	09:02 (8)	08:57	
	22:02	20:55	19:30	18:07	13 09:02 (5)	15:56	28 09:30 (6)	15:29	
19	04:44	05:47	06:53	07:58	08:47 (5)	08:09	09:02 (8)	08:57	
	22:00	20:52	19:27	18:05	16 09:03 (5)	15:54	29 09:31 (6)	15:29	
20	04:46	05:49	06:55	08:00	08:46 (5)	08:11	09:01 (8)	08:58	
	21:59	20:50	19:24	18:02	18 09:04 (5)	15:53	30 09:31 (6)	15:30	
21	04:48	05:51	06:57	08:03	08:45 (5)	08:13	09:01 (8)	08:59	
	21:57	20:47	19:22	17:59	20 09:05 (5)	15:51	32 09:33 (6)	15:30	
22	04:50	05:54	06:59	08:05	08:45 (5)	08:15	09:01 (8)	08:59	
	21:55	20:44	19:19	17:57	20 09:05 (5)	15:49	32 09:33 (6)	15:30	
23	04:51	05:56	07:01	08:07	08:44 (5)	08:17	09:00 (8)	09:00	
	21:53	20:42	19:16	17:54	21 09:05 (5)	15:48	33 09:33 (6)	15:31	
24	04:53	05:58	07:04	08:09	08:43 (5)	08:19	09:01 (8)	09:00	
	21:52	20:39	19:13	17:52	22 09:05 (5)	15:46	33 09:34 (6)	15:32	
25	04:55	06:00	07:06	07:12	07:44 (5)	08:21	09:02 (8)	09:00	
	21:50	20:36	19:10	16:49	21 08:05 (5)	15:45	32 09:34 (6)	15:32	
26	04:57	06:02	07:08	07:14	07:46 (5)	08:23	09:05 (8)	09:01	
	21:48	20:34	19:07	16:47	18 08:04 (5)	15:44	30 09:35 (6)	15:33	
27	04:59	06:04	07:10	07:16	07:49 (5)	08:25	09:07 (8)	09:01	
	21:46	20:31	19:05	16:44	23 08:15 (9)	15:42	28 09:35 (6)	15:34	
28	05:01	06:06	07:12	07:18	07:51 (5)	08:27	09:09 (8)	09:01	
	21:44	20:28	19:02	16:42	23 08:16 (9)	15:41	25 09:34 (6)	15:35	
29	05:03	06:09	07:14	07:21	07:54 (5)	08:29	09:11 (8)	09:01	
	21:42	20:26	18:59	16:39	22 08:18 (9)	15:40	23 09:34 (6)	15:36	
30	05:05	06:11	07:16	07:23	07:56 (5)	08:31	09:13 (8)	09:01	
	21:40	20:23	18:56	16:37	20 08:18 (9)	15:38	21 09:34 (6)	15:37	
31	05:07	06:13		07:25	08:02 (9)			09:01	
	21:38	20:20		16:34	17 08:19 (9)			15:38	
Potential sun hours	538	474	386	321		241		207	
Total, worst case				375		502			104
Sun reduction				0.28		0.08			0.06
Oper. time red.				1.00		1.00			1.00
Wind dir. red.				1.00		1.00			1.00
Total reduction				0.28		0.08			0.06
Total, real				106		39			6

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Jaunziles - Shadow Receptor: 1.0×1.0 Azimuth: 3.1° Slope: 90.0° (443)
 Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:00 15:40	08:21 16:40	07:13 17:46	06:48 19:55	05:28 21:01	04:27 22:02	04:20 22:19	05:09 21:35	06:15 20:17	07:18 18:53	07:27 16:32	08:32 15:37
2	09:00 15:41	08:19 16:42	07:11 17:48	06:45 19:57	05:25 21:03	04:26 22:04	04:21 22:19	05:11 21:33	06:17 20:14	07:20 18:50	07:29 16:30	08:34 15:36
3	08:59 15:42	08:16 16:45	07:08 17:50	06:42 19:59	05:23 21:05	04:25 22:05	04:22 22:18	05:13 21:30	06:19 20:12	07:22 18:48	07:32 16:27	08:36 15:35
4	08:59 15:44	08:14 16:47	07:05 17:53	06:39 20:01	05:20 21:08	04:23 22:06	04:23 22:18	05:15 21:28	06:21 20:09	07:25 18:45	07:34 16:25	08:38 15:34
5	08:58 15:45	08:12 16:49	07:02 17:55	06:36 20:04	05:18 21:10	04:22 22:08	04:24 22:17	05:17 21:26	06:23 20:06	07:27 18:42	07:36 16:23	08:39 15:34
6	08:58 15:47	08:10 16:52	07:00 17:57	06:34 20:06	05:16 21:12	04:21 22:09	04:25 22:16	05:19 21:24	06:25 20:03	07:29 18:39	07:39 16:20	08:41 15:33
7	08:57 15:48	08:08 16:54	06:57 17:59	06:31 20:08	05:13 21:14	04:21 22:10	04:26 22:15	05:22 21:21	06:27 20:00	07:31 18:37	07:41 16:18	08:43 15:32
8	08:56 15:50	08:06 16:56	06:54 18:02	06:28 20:10	05:11 21:16	04:20 22:12	04:27 22:14	05:24 21:19	06:30 19:58	07:33 18:34	07:43 16:16	08:44 15:31
9	08:55 15:51	08:03 16:59	06:52 18:04	06:25 20:12	05:09 21:18	04:19 22:13	04:29 22:13	05:26 21:17	06:32 19:55	07:35 18:31	07:46 16:14	08:46 15:31
10	08:54 15:53	08:01 17:01	06:49 18:06	06:23 20:15	05:07 21:21	04:18 22:14	04:30 22:12	05:28 21:14	06:34 19:52	07:38 18:28	07:48 16:12	08:47 15:30
11	08:54 15:55	07:59 17:04	06:46 18:08	06:20 20:17	05:04 21:23	04:18 22:15	04:32 22:11	05:30 21:12	06:36 19:49	07:40 18:26	07:50 16:10	08:48 15:30
12	08:53 15:57	07:56 17:06	06:43 18:11	06:17 20:19	05:02 21:25	04:17 22:16	04:33 22:10	05:32 21:09	06:38 19:47	07:42 18:23	07:52 16:08	08:50 15:30
13	08:51 15:59	07:54 17:08	06:41 18:13	06:15 20:21	05:00 21:27	04:16 22:16	04:34 22:08	05:34 21:07	06:40 19:44	07:44 18:20	07:55 16:06	08:51 15:29
14	08:50 16:01	07:51 17:11	06:38 18:15	06:12 20:23	04:58 21:29	04:16 22:17	04:36 22:07	05:36 21:04	06:42 19:41	07:46 18:18	07:57 16:04	08:52 15:29
15	08:49 16:03	07:49 17:13	06:35 18:17	06:09 20:26	04:56 21:31	04:16 22:18	04:38 22:06	05:39 21:02	06:44 19:38	07:49 18:15	07:59 16:02	08:53 15:29
16	08:48 16:05	07:47 17:15	06:32 18:20	06:06 20:28	04:54 21:33	04:15 22:19	04:39 22:04	05:41 20:59	06:46 19:35	07:51 18:12	08:01 16:00	08:54 15:29
17	08:46 16:07	07:44 17:18	06:29 18:22	06:04 20:30	04:52 21:35	04:15 22:19	04:41 22:03	05:43 20:57	06:49 19:32	07:53 18:10	08:04 15:58	08:55 15:29
18	08:45 16:09	07:42 17:20	06:27 18:24	06:01 20:32	04:50 21:37	04:15 22:20	04:43 22:01	05:45 20:54	06:51 19:30	07:55 18:07	08:06 15:56	08:56 15:29
19	08:44 16:11	07:39 17:22	06:24 18:26	05:58 20:34	04:48 21:39	04:15 22:20	04:44 22:00	05:47 20:52	06:53 19:27	07:58 18:04	08:08 15:54	08:57 15:29
20	08:42 16:13	07:37 17:25	06:21 18:28	05:56 20:37	04:46 21:41	04:15 22:20	04:46 21:58	05:49 20:49	06:55 19:24	08:00 18:02	08:10 15:53	08:57 15:30
21	08:41 16:15	07:34 17:27	06:18 18:31	05:53 20:39	04:44 21:43	04:15 22:21	04:48 21:56	05:51 20:47	06:57 19:21	08:02 17:59	08:12 15:51	08:58 15:30
22	08:39 16:17	07:32 17:30	06:16 18:33	05:50 20:41	04:42 21:45	04:15 22:21	04:50 21:55	05:53 20:44	06:59 19:18	08:04 17:57	08:15 15:49	08:59 15:31
23	08:37 16:19	07:29 17:32	06:13 18:35	05:48 20:43	04:41 21:47	04:16 22:21	04:51 21:53	05:56 20:41	07:01 19:16	08:07 17:54	08:17 15:48	08:59 15:31
24	08:36 16:22	07:26 17:34	06:10 18:37	05:45 20:46	04:39 21:49	04:16 22:21	04:53 21:51	05:58 20:39	07:03 19:13	08:09 17:52	08:19 15:46	08:59 15:32
25	08:34 16:24	07:24 17:36	06:07 18:39	05:43 20:48	04:37 21:50	04:16 22:21	04:55 21:49	06:00 20:36	07:05 19:10	07:11 16:49	08:21 15:45	09:00 15:32
26	08:32 16:26	07:21 17:39	06:04 18:42	05:40 20:50	04:36 21:52	04:17 22:21	04:57 21:47	06:02 20:33	07:08 19:07	07:13 16:46	08:23 15:44	09:00 15:33
27	08:30 16:28	07:19 17:41	06:02 18:44	05:38 20:52	04:34 21:54	04:17 22:21	04:59 21:45	06:04 20:31	07:10 19:04	07:16 16:44	08:25 15:42	09:00 15:34
28	08:28 16:31	07:16 17:43	05:59 18:46	05:35 20:54	04:32 21:56	04:18 22:21	05:01 21:43	06:06 20:28	07:12 19:02	07:18 16:42	08:27 15:41	09:00 15:35
29	08:27 16:33		06:56 19:48	05:33 20:57	04:31 21:57	04:18 22:20	05:03 21:41	06:08 20:25	07:14 18:59	07:20 16:39	08:29 15:40	09:00 15:36
30	08:25 16:35		06:53 19:50	05:30 20:59	04:30 21:59	04:19 22:20	05:05 21:39	06:10 20:23	07:16 18:56	07:23 16:37	08:31 15:38	09:00 15:37
31	08:23 16:38		06:50 19:53		04:28 22:01		05:07 21:37	06:13 20:20		07:25 16:34		09:00 15:38
Potential sun hours	228	262	365	429	515	539	538	474	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Jauna iela 1 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (676)
 Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:28 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
2	09:00 15:40	08:19 16:42	07:11 17:48	06:45 19:57	05:25 21:04	04:25 22:04	04:20 22:20	05:11 21:33	06:17 20:15	07:21 18:51	07:30 16:29	08:35 15:36
3	09:00 15:42	08:17 16:44	07:08 17:50	06:42 19:59	05:23 21:06	04:24 22:06	04:21 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:37 15:35
4	08:59 15:43	08:15 16:47	07:05 17:53	06:39 20:02	05:20 21:08	04:23 22:07	04:22 22:18	05:15 21:29	06:21 20:09	07:25 18:45	07:35 16:25	08:38 15:34
5	08:59 15:45	08:13 16:49	07:03 17:55	06:37 20:04	05:18 21:10	04:22 22:09	04:24 22:18	05:17 21:27	06:23 20:06	07:27 18:42	07:37 16:23	08:40 15:33
6	08:58 15:46	08:10 16:52	07:00 17:57	06:34 20:06	05:16 21:12	04:21 22:10	04:25 22:17	05:19 21:24	06:25 20:04	07:29 18:39	07:39 16:20	08:42 15:32
7	08:58 15:48	08:08 16:54	06:57 17:59	06:31 20:08	05:13 21:15	04:20 22:11	04:26 22:16	05:21 21:22	06:27 20:01	07:31 18:37	07:41 16:18	08:43 15:32
8	08:57 15:49	08:06 16:56	06:55 18:02	06:28 20:10	05:11 21:17	04:19 22:12	04:27 22:15	05:23 21:20	06:30 19:58	07:34 18:34	07:44 16:16	08:45 15:31
9	08:56 15:51	08:04 16:59	06:52 18:04	06:25 20:13	05:09 21:19	04:18 22:13	04:28 22:14	05:26 21:17	06:32 19:55	07:36 18:31	07:46 16:14	08:46 15:31
10	08:55 15:53	08:01 17:01	06:49 18:06	06:23 20:15	05:06 21:21	04:18 22:14	04:30 22:13	05:28 21:15	06:34 19:52	07:38 18:28	07:48 16:12	08:48 15:30
11	08:54 15:55	07:59 17:04	06:46 18:09	06:20 20:17	05:04 21:23	04:17 22:15	04:31 22:12	05:30 21:12	06:36 19:50	07:40 18:26	07:51 16:10	08:49 15:30
12	08:53 15:57	07:57 17:06	06:44 18:11	06:17 20:19	05:02 21:25	04:17 22:16	04:33 22:10	05:32 21:10	06:38 19:47	07:42 18:23	07:53 16:08	08:50 15:29
13	08:52 15:58	07:54 17:08	06:41 18:13	06:15 20:22	05:00 21:27	04:16 22:17	04:34 22:09	05:34 21:07	06:40 19:44	07:45 18:20	07:55 16:05	08:51 15:29
14	08:51 16:00	07:52 17:11	06:38 18:15	06:12 20:24	04:58 21:29	04:16 22:18	04:36 22:08	05:36 21:05	06:42 19:41	07:47 18:18	07:57 16:04	08:53 15:29
15	08:50 16:02	07:49 17:13	06:35 18:17	06:09 20:26	04:56 21:32	04:15 22:19	04:37 22:06	05:38 21:02	06:44 19:38	07:49 18:15	08:00 16:02	08:54 15:29
16	08:48 16:04	07:47 17:15	06:32 18:20	06:06 20:28	04:54 21:34	04:15 22:19	04:39 22:05	05:41 21:00	06:46 19:36	07:51 18:12	08:02 16:00	08:55 15:29
17	08:47 16:06	07:45 17:18	06:30 18:22	06:04 20:30	04:51 21:36	04:15 22:20	04:40 22:04	05:43 20:57	06:49 19:33	07:53 18:10	08:04 15:58	08:56 15:29
18	08:46 16:08	07:42 17:20	06:27 18:24	06:01 20:33	04:50 21:38	04:15 22:20	04:42 22:02	05:45 20:55	06:51 19:30	07:56 18:07	08:06 15:56	08:57 15:29
19	08:44 16:10	07:40 17:22	06:24 18:26	05:58 20:35	04:48 21:40	04:15 22:21	04:44 22:00	05:47 20:52	06:53 19:27	07:58 18:04	08:09 15:54	08:57 15:29
20	08:43 16:13	07:37 17:25	06:21 18:29	05:56 20:37	04:46 21:42	04:15 22:21	04:46 21:59	05:49 20:50	06:55 19:24	08:00 18:02	08:11 15:53	08:58 15:29
21	08:41 16:15	07:34 17:27	06:18 18:31	05:53 20:39	04:44 21:44	04:15 22:22	04:47 21:57	05:51 20:47	06:57 19:21	08:02 17:59	08:13 15:51	08:59 15:30
22	08:40 16:17	07:32 17:30	06:16 18:33	05:50 20:41	04:42 21:45	04:15 22:22	04:49 21:55	05:53 20:44	06:59 19:19	08:05 17:57	08:15 15:49	08:59 15:30
23	08:38 16:19	07:29 17:32	06:13 18:35	05:48 20:44	04:40 21:47	04:15 22:22	04:51 21:53	05:56 20:42	07:01 19:16	08:07 17:54	08:17 15:48	09:00 15:31
24	08:36 16:21	07:27 17:34	06:10 18:37	05:45 20:46	04:39 21:49	04:15 22:22	04:53 21:52	05:58 20:39	07:03 19:13	08:09 17:51	08:19 15:46	09:00 15:31
25	08:35 16:24	07:24 17:37	06:07 18:40	05:43 20:48	04:37 21:51	04:16 22:22	04:55 21:50	06:00 20:36	07:06 19:10	07:11 16:49	08:21 15:45	09:00 15:32
26	08:33 16:26	07:21 17:39	06:04 18:42	05:40 20:50	04:35 21:53	04:16 22:22	04:57 21:48	06:02 20:34	07:08 19:07	07:14 16:46	08:23 15:43	09:01 15:33
27	08:31 16:28	07:19 17:41	06:02 18:44	05:38 20:53	04:34 21:55	04:17 22:22	04:59 21:46	06:04 20:31	07:10 19:05	07:16 16:44	08:25 15:42	09:01 15:34
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29	08:27 16:33		05:56 19:48	05:32 20:57	04:31 21:58	04:18 22:21	05:03 21:42	06:08 20:26	07:14 18:59	07:21 16:39	08:29 15:39	09:01 15:35
30	08:25 16:35		05:53 19:51	05:30 20:59	04:29 22:00	04:19 22:21	05:05 21:40	06:10 20:23	07:16 18:56	07:23 16:37	08:31 15:38	09:01 15:37
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Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
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Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Jauna iela 3 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (665)
 Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

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2	09:00 15:40	08:19 16:42	07:11 17:48	06:45 19:57	05:25 21:04	04:25 22:04	04:20 22:20	05:11 21:33	06:17 20:15	07:21 18:51	07:30 16:29	08:35 15:36
3	09:00 15:42	08:17 16:44	07:08 17:50	06:42 19:59	05:23 21:06	04:24 22:06	04:21 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:37 15:35
4	08:59 15:43	08:15 16:47	07:05 17:53	06:39 20:02	05:20 21:08	04:23 22:07	04:22 22:18	05:15 21:29	06:21 20:09	07:25 18:45	07:35 16:25	08:38 15:34
5	08:59 15:45	08:13 16:49	07:03 17:55	06:37 20:04	05:18 21:10	04:22 22:09	04:24 22:18	05:17 21:27	06:23 20:06	07:27 18:42	07:37 16:23	08:40 15:33
6	08:58 15:46	08:10 16:52	07:00 17:57	06:34 20:06	05:16 21:12	04:21 22:10	04:25 22:17	05:19 21:24	06:25 20:04	07:29 18:39	07:39 16:20	08:42 15:32
7	08:58 15:48	08:08 16:54	06:57 17:59	06:31 20:08	05:13 21:15	04:20 22:11	04:26 22:16	05:21 21:22	06:27 20:01	07:31 18:37	07:41 16:18	08:43 15:32
8	08:57 15:49	08:06 16:56	06:55 18:02	06:28 20:10	05:11 21:17	04:19 22:12	04:27 22:15	05:23 21:20	06:30 19:58	07:34 18:34	07:44 16:16	08:45 15:31
9	08:56 15:51	08:04 16:59	06:52 18:04	06:25 20:13	05:09 21:19	04:18 22:13	04:28 22:14	05:26 21:17	06:32 19:55	07:36 18:31	07:46 16:14	08:46 15:31
10	08:55 15:53	08:01 17:01	06:49 18:06	06:23 20:15	05:06 21:21	04:18 22:14	04:30 22:13	05:28 21:15	06:34 19:52	07:38 18:28	07:48 16:12	08:48 15:30
11	08:54 15:55	07:59 17:04	06:46 18:09	06:20 20:17	05:04 21:23	04:17 22:15	04:31 22:12	05:30 21:12	06:36 19:50	07:40 18:26	07:51 16:10	08:49 15:30
12	08:53 15:57	07:57 17:06	06:44 18:11	06:17 20:19	05:02 21:25	04:17 22:16	04:33 22:10	05:32 21:10	06:38 19:47	07:42 18:23	07:53 16:08	08:50 15:29
13	08:52 15:58	07:54 17:08	06:41 18:13	06:15 20:22	05:00 21:27	04:16 22:17	04:34 22:09	05:34 21:07	06:40 19:44	07:45 18:20	07:55 16:05	08:51 15:29
14	08:51 16:00	07:52 17:11	06:38 18:15	06:12 20:24	04:58 21:29	04:16 22:18	04:36 22:08	05:36 21:05	06:42 19:41	07:47 18:18	07:57 16:04	08:53 15:29
15	08:50 16:02	07:49 17:13	06:35 18:17	06:09 20:26	04:56 21:32	04:15 22:19	04:37 22:06	05:38 21:02	06:44 19:38	07:49 18:15	08:00 16:02	08:54 15:29
16	08:48 16:04	07:47 17:15	06:32 18:20	06:06 20:28	04:54 21:34	04:15 22:19	04:39 22:05	05:41 21:00	06:46 19:36	07:51 18:12	08:02 16:00	08:55 15:29
17	08:47 16:06	07:45 17:18	06:30 18:22	06:04 20:30	04:51 21:36	04:15 22:20	04:40 22:04	05:43 20:57	06:49 19:33	07:53 18:10	08:04 15:58	08:56 15:29
18	08:46 16:08	07:42 17:20	06:27 18:24	06:01 20:33	04:50 21:38	04:15 22:20	04:42 22:02	05:45 20:55	06:51 19:30	07:56 18:07	08:06 15:56	08:57 15:29
19	08:44 16:10	07:40 17:22	06:24 18:26	05:58 20:35	04:48 21:40	04:15 22:21	04:44 22:00	05:47 20:52	06:53 19:27	07:58 18:04	08:09 15:54	08:57 15:29
20	08:43 16:13	07:37 17:25	06:21 18:29	05:56 20:37	04:46 21:42	04:15 22:21	04:46 21:59	05:49 20:50	06:55 19:24	08:00 18:02	08:11 15:53	08:58 15:29
21	08:41 16:15	07:34 17:27	06:18 18:31	05:53 20:39	04:44 21:44	04:15 22:22	04:47 21:57	05:51 20:47	06:57 19:21	08:02 17:59	08:13 15:51	08:59 15:30
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23	08:38 16:19	07:29 17:32	06:13 18:35	05:48 20:44	04:40 21:47	04:15 22:22	04:51 21:53	05:56 20:42	07:01 19:16	08:07 17:54	08:17 15:48	09:00 15:31
24	08:36 16:21	07:27 17:34	06:10 18:37	05:45 20:46	04:39 21:49	04:15 22:22	04:53 21:52	05:58 20:39	07:03 19:13	08:09 17:51	08:19 15:46	09:00 15:31
25	08:35 16:24	07:24 17:37	06:07 18:40	05:43 20:48	04:37 21:51	04:16 22:22	04:55 21:50	06:00 20:36	07:06 19:10	07:11 16:49	08:21 15:45	09:00 15:32
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27	08:31 16:28	07:19 17:41	06:02 18:44	05:38 20:53	04:34 21:55	04:17 22:22	04:59 21:46	06:04 20:31	07:10 19:05	07:16 16:44	08:25 15:42	09:01 15:34
28	08:29 16:30	07:16 17:43	05:59 18:46	05:35 20:55	04:32 21:56	04:17 22:21	05:01 21:44	06:06 20:28	07:12 19:02	07:18 16:41	08:27 15:41	09:01 15:34
29	08:27 16:33		05:56 19:48	05:32 20:57	04:31 21:58	04:18 22:21	05:03 21:42	06:08 20:26	07:14 18:59	07:21 16:39	08:29 15:39	09:01 15:35
30	08:25 16:35		05:53 19:51	05:30 20:59	04:29 22:00	04:19 22:21	05:05 21:40	06:10 20:23	07:16 18:56	07:23 16:37	08:31 15:38	09:01 15:37
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Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
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Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Jauna iela 4 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (658)
 Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:28 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
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3	09:00 15:42	08:17 16:44	07:08 17:50	06:42 19:59	05:23 21:06	04:24 22:06	04:21 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:37 15:35
4	08:59 15:43	08:15 16:47	07:05 17:53	06:39 20:02	05:20 21:08	04:23 22:07	04:22 22:18	05:15 21:29	06:21 20:09	07:25 18:45	07:35 16:25	08:38 15:34
5	08:59 15:45	08:13 16:49	07:03 17:55	06:37 20:04	05:18 21:10	04:22 22:09	04:24 22:18	05:17 21:27	06:23 20:06	07:27 18:42	07:37 16:23	08:40 15:33
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Total, worst case												
Sun reduction												
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Total reduction												
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Table layout: For each day in each month the following matrix apply

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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Jauna iela 4A - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (649)
 Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
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4	08:59 15:43	08:15 16:47	07:05 17:53	06:39 20:02	05:20 21:08	04:23 22:07	04:22 22:18	05:15 21:29	06:21 20:09	07:25 18:45	07:35 16:25	08:38 15:34
5	08:59 15:45	08:13 16:49	07:03 17:55	06:37 20:04	05:18 21:10	04:22 22:09	04:24 22:18	05:17 21:27	06:23 20:06	07:27 18:42	07:37 16:23	08:40 15:33
6	08:58 15:46	08:10 16:52	07:00 17:57	06:34 20:06	05:16 21:12	04:21 22:10	04:25 22:17	05:19 21:24	06:25 20:04	07:29 18:39	07:39 16:20	08:42 15:32
7	08:58 15:48	08:08 16:54	06:57 17:59	06:31 20:08	05:13 21:15	04:20 22:11	04:26 22:16	05:21 21:22	06:27 20:01	07:31 18:37	07:41 16:18	08:43 15:32
8	08:57 15:49	08:06 16:56	06:55 18:02	06:28 20:10	05:11 21:17	04:19 22:12	04:27 22:15	05:23 21:20	06:30 19:58	07:34 18:34	07:44 16:16	08:45 15:31
9	08:56 15:51	08:04 16:59	06:52 18:04	06:25 20:13	05:09 21:19	04:18 22:13	04:28 22:14	05:26 21:17	06:32 19:55	07:36 18:31	07:46 16:14	08:46 15:31
10	08:55 15:53	08:01 17:01	06:49 18:06	06:23 20:15	05:06 21:21	04:18 22:14	04:30 22:13	05:28 21:15	06:34 19:52	07:38 18:28	07:48 16:12	08:48 15:30
11	08:54 15:55	07:59 17:04	06:46 18:09	06:20 20:17	05:04 21:23	04:17 22:15	04:31 22:12	05:30 21:12	06:36 19:50	07:40 18:26	07:51 16:10	08:49 15:30
12	08:53 15:57	07:57 17:06	06:44 18:11	06:17 20:19	05:02 21:25	04:17 22:16	04:33 22:10	05:32 21:10	06:38 19:47	07:42 18:23	07:53 16:07	08:50 15:29
13	08:52 15:58	07:54 17:08	06:41 18:13	06:15 20:22	05:00 21:27	04:16 22:17	04:34 22:09	05:34 21:07	06:40 19:44	07:45 18:20	07:55 16:05	08:51 15:29
14	08:51 16:00	07:52 17:11	06:38 18:15	06:12 20:24	04:58 21:29	04:16 22:18	04:36 22:08	05:36 21:05	06:42 19:41	07:47 18:18	07:57 16:04	08:53 15:29
15	08:50 16:02	07:49 17:13	06:35 18:17	06:09 20:26	04:56 21:32	04:15 22:19	04:37 22:06	05:38 21:02	06:44 19:38	07:49 18:15	08:00 16:02	08:54 15:29
16	08:48 16:04	07:47 17:15	06:32 18:20	06:06 20:28	04:54 21:34	04:15 22:19	04:39 22:05	05:41 21:00	06:46 19:36	07:51 18:12	08:02 16:00	08:55 15:29
17	08:47 16:06	07:45 17:18	06:30 18:22	06:04 20:30	04:51 21:36	04:15 22:20	04:40 22:04	05:43 20:57	06:49 19:33	07:53 18:10	08:04 15:58	08:56 15:29
18	08:46 16:08	07:42 17:20	06:27 18:24	06:01 20:33	04:50 21:38	04:15 22:20	04:42 22:02	05:45 20:55	06:51 19:30	07:56 18:07	08:06 15:56	08:57 15:29
19	08:44 16:10	07:40 17:22	06:24 18:26	05:58 20:35	04:48 21:40	04:15 22:21	04:44 22:00	05:47 20:52	06:53 19:27	07:58 18:04	08:09 15:54	08:57 15:29
20	08:43 16:13	07:37 17:25	06:21 18:29	05:56 20:37	04:46 21:42	04:15 22:21	04:46 21:59	05:49 20:50	06:55 19:24	08:00 18:02	08:11 15:53	08:58 15:29
21	08:41 16:15	07:34 17:27	06:18 18:31	05:53 20:39	04:44 21:44	04:15 22:22	04:47 21:57	05:51 20:47	06:57 19:21	08:02 17:59	08:13 15:51	08:59 15:30
22	08:40 16:17	07:32 17:30	06:16 18:33	05:50 20:41	04:42 21:46	04:15 22:22	04:49 21:55	05:53 20:44	06:59 19:19	08:05 17:57	08:15 15:49	08:59 15:30
23	08:38 16:19	07:29 17:32	06:13 18:35	05:48 20:44	04:40 21:47	04:15 22:22	04:51 21:53	05:56 20:42	07:01 19:16	08:07 17:54	08:17 15:48	09:00 15:31
24	08:36 16:21	07:27 17:34	06:10 18:37	05:45 20:46	04:39 21:49	04:15 22:22	04:53 21:52	05:58 20:39	07:03 19:13	08:09 17:51	08:19 15:46	09:00 15:31
25	08:35 16:24	07:24 17:37	06:07 18:40	05:43 20:48	04:37 21:51	04:16 22:22	04:55 21:50	06:00 20:36	07:06 19:10	07:11 16:49	08:21 15:45	09:00 15:32
26	08:33 16:26	07:21 17:39	06:04 18:42	05:40 20:50	04:35 21:53	04:16 22:22	04:57 21:48	06:02 20:34	07:08 19:07	07:14 16:46	08:23 15:43	09:01 15:33
27	08:31 16:28	07:19 17:41	06:02 18:44	05:38 20:53	04:34 21:55	04:17 22:22	04:59 21:46	06:04 20:31	07:10 19:05	07:16 16:44	08:25 15:42	09:01 15:34
28	08:29 16:30	07:16 17:43	05:59 18:46	05:35 20:55	04:32 21:56	04:17 22:21	05:01 21:44	06:06 20:28	07:12 19:02	07:18 16:41	08:27 15:41	09:01 15:34
29	08:27 16:33		05:56 19:48	05:32 20:57	04:31 21:58	04:18 22:21	05:03 21:42	06:08 20:26	07:14 18:59	07:21 16:39	08:29 15:39	09:01 15:35
30	08:25 16:35		05:53 19:51	05:30 20:59	04:29 22:00	04:19 22:21	05:05 21:40	06:10 20:23	07:16 18:56	07:23 16:37	08:31 15:38	09:01 15:37
31	08:23 16:37		05:50 19:53		04:28 22:01		05:07 21:38	06:13 20:20		07:25 16:34		09:01 15:38
Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Jauna iela 5 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (664)
 Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01	08:21	07:13	06:48	05:28	04:27	04:20	05:09	06:15	07:18	07:28	08:33
	15:39	16:40	17:46	19:55	21:01	22:03	22:20	21:35	20:17	18:53	16:32	15:37
2	09:00	08:19	07:11	06:45	05:25	04:25	04:20	05:11	06:17	07:21	07:30	08:35
	15:40	16:42	17:48	19:57	21:04	22:04	22:20	21:33	20:15	18:51	16:29	15:36
3	09:00	08:17	07:08	06:42	05:23	04:24	04:21	05:13	06:19	07:23	07:32	08:37
	15:42	16:44	17:50	19:59	21:06	22:06	22:19	21:31	20:12	18:48	16:27	15:35
4	08:59	08:15	07:05	06:39	05:20	04:23	04:22	05:15	06:21	07:25	07:35	08:38
	15:43	16:47	17:53	20:02	21:08	22:07	22:18	21:29	20:09	18:45	16:25	15:34
5	08:59	08:13	07:03	06:37	05:18	04:22	04:24	05:17	06:23	07:27	07:37	08:40
	15:45	16:49	17:55	20:04	21:10	22:09	22:18	21:27	20:06	18:42	16:23	15:33
6	08:58	08:10	07:00	06:34	05:16	04:21	04:25	05:19	06:25	07:29	07:39	08:42
	15:46	16:52	17:57	20:06	21:12	22:10	22:17	21:24	20:04	18:39	16:20	15:32
7	08:58	08:08	06:57	06:31	05:13	04:20	04:26	05:21	06:27	07:31	07:41	08:43
	15:48	16:54	17:59	20:08	21:15	22:11	22:16	21:22	20:01	18:37	16:18	15:32
8	08:57	08:06	06:55	06:28	05:11	04:19	04:27	05:23	06:30	07:34	07:44	08:45
	15:49	16:56	18:02	20:11	21:17	22:12	22:15	21:20	19:58	18:34	16:16	15:31
9	08:56	08:04	06:52	06:25	05:09	04:18	04:28	05:26	06:32	07:36	07:46	08:46
	15:51	16:59	18:04	20:13	21:19	22:13	22:14	21:17	19:55	18:31	16:14	15:31
10	08:55	08:01	06:49	06:23	05:06	04:18	04:30	05:28	06:34	07:38	07:48	08:48
	15:53	17:01	18:06	20:15	21:21	22:14	22:13	21:15	19:52	18:28	16:12	15:30
11	08:54	07:59	06:46	06:20	05:04	04:17	04:31	05:30	06:36	07:40	07:51	08:49
	15:55	17:04	18:09	20:17	21:23	22:15	22:12	21:12	19:50	18:26	16:10	15:30
12	08:53	07:57	06:44	06:17	05:02	04:17	04:33	05:32	06:38	07:42	07:53	08:50
	15:57	17:06	18:11	20:19	21:25	22:16	22:10	21:10	19:47	18:23	16:08	15:29
13	08:52	07:54	06:41	06:15	05:00	04:16	04:34	05:34	06:40	07:45	07:55	08:51
	15:58	17:08	18:13	20:22	21:27	22:17	22:09	21:07	19:44	18:20	16:05	15:29
14	08:51	07:52	06:38	06:12	04:58	04:16	04:36	05:36	06:42	07:47	07:57	08:53
	16:00	17:11	18:15	20:24	21:29	22:18	22:08	21:05	19:41	18:18	16:04	15:29
15	08:50	07:49	06:35	06:09	04:56	04:15	04:37	05:38	06:44	07:49	08:00	08:54
	16:02	17:13	18:17	20:26	21:32	22:19	22:06	21:02	19:38	18:15	16:02	15:29
16	08:48	07:47	06:32	06:06	04:54	04:15	04:39	05:41	06:46	07:51	08:02	08:55
	16:04	17:15	18:20	20:28	21:34	22:19	22:05	21:00	19:36	18:12	16:00	15:29
17	08:47	07:45	06:30	06:04	04:51	04:15	04:40	05:43	06:49	07:53	08:04	08:56
	16:06	17:18	18:22	20:30	21:36	22:20	22:04	20:57	19:33	18:10	15:58	15:29
18	08:46	07:42	06:27	06:01	04:50	04:15	04:42	05:45	06:51	07:56	08:06	08:57
	16:08	17:20	18:24	20:33	21:38	22:20	22:02	20:55	19:30	18:07	15:56	15:29
19	08:44	07:40	06:24	05:58	04:48	04:15	04:44	05:47	06:53	07:58	08:09	08:57
	16:10	17:22	18:26	20:35	21:40	22:21	22:00	20:52	19:27	18:04	15:54	15:29
20	08:43	07:37	06:21	05:56	04:46	04:15	04:46	05:49	06:55	08:00	08:11	08:58
	16:13	17:25	18:29	20:37	21:42	22:21	21:59	20:50	19:24	18:02	15:53	15:29
21	08:41	07:34	06:18	05:53	04:44	04:15	04:47	05:51	06:57	08:02	08:13	08:59
	16:15	17:27	18:31	20:39	21:44	22:22	21:57	20:47	19:21	17:59	15:51	15:30
22	08:40	07:32	06:16	05:50	04:42	04:15	04:49	05:53	06:59	08:05	08:15	08:59
	16:17	17:30	18:33	20:41	21:46	22:22	21:55	20:44	19:19	17:57	15:49	15:30
23	08:38	07:29	06:13	05:48	04:40	04:15	04:51	05:56	07:01	08:07	08:17	09:00
	16:19	17:32	18:35	20:44	21:47	22:22	21:53	20:42	19:16	17:54	15:48	15:31
24	08:36	07:27	06:10	05:45	04:39	04:15	04:53	05:58	07:03	08:09	08:19	09:00
	16:21	17:34	18:37	20:46	21:49	22:22	21:52	20:39	19:13	17:51	15:46	15:31
25	08:35	07:24	06:07	05:43	04:37	04:16	04:55	06:00	07:06	07:11	08:21	09:00
	16:24	17:37	18:40	20:48	21:51	22:22	21:50	20:36	19:10	16:49	15:45	15:32
26	08:33	07:21	06:04	05:40	04:35	04:16	04:57	06:02	07:08	07:14	08:23	09:01
	16:26	17:39	18:42	20:50	21:53	22:22	21:48	20:34	19:07	16:46	15:43	15:33
27	08:31	07:19	06:02	05:38	04:34	04:17	04:59	06:04	07:10	07:16	08:25	09:01
	16:28	17:41	18:44	20:53	21:55	22:22	21:46	20:31	19:05	16:44	15:42	15:34
28	08:29	07:16	05:59	05:35	04:32	04:17	05:01	06:06	07:12	07:18	08:27	09:01
	16:30	17:43	18:46	20:55	21:56	22:21	21:44	20:28	19:02	16:41	15:41	15:34
29	08:27		06:56	05:32	04:31	04:18	05:03	06:08	07:14	07:21	08:29	09:01
	16:33		19:48	20:57	21:58	22:21	21:42	20:26	18:59	16:39	15:39	15:35
30	08:25		06:53	05:30	04:29	04:19	05:05	06:10	07:16	07:23	08:31	09:01
	16:35		19:51	20:59	22:00	22:21	21:40	20:23	18:56	16:37	15:38	15:37
31	08:23		06:50		04:28		05:07	06:13		07:25		09:01
	16:37		19:53		22:01		21:38	20:20		16:34		15:38
Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Jauna iela 6 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (663)
 Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01	08:21	07:13	06:48	05:28	04:27	04:20	05:09	06:15	07:18	07:28	08:33
	15:39	16:40	17:46	19:55	21:01	22:03	22:20	21:35	20:17	18:53	16:32	15:37
2	09:00	08:19	07:11	06:45	05:25	04:25	04:20	05:11	06:17	07:21	07:30	08:35
	15:40	16:42	17:48	19:57	21:04	22:04	22:20	21:33	20:15	18:51	16:29	15:36
3	09:00	08:17	07:08	06:42	05:23	04:24	04:21	05:13	06:19	07:23	07:32	08:37
	15:42	16:44	17:50	19:59	21:06	22:06	22:19	21:31	20:12	18:48	16:27	15:35
4	08:59	08:15	07:05	06:39	05:20	04:23	04:22	05:15	06:21	07:25	07:35	08:38
	15:43	16:47	17:53	20:02	21:08	22:07	22:18	21:29	20:09	18:45	16:25	15:34
5	08:59	08:13	07:03	06:37	05:18	04:22	04:24	05:17	06:23	07:27	07:37	08:40
	15:45	16:49	17:55	20:04	21:10	22:09	22:18	21:27	20:06	18:42	16:23	15:33
6	08:58	08:10	07:00	06:34	05:16	04:21	04:25	05:19	06:25	07:29	07:39	08:42
	15:46	16:52	17:57	20:06	21:12	22:10	22:17	21:24	20:04	18:39	16:20	15:32
7	08:58	08:08	06:57	06:31	05:13	04:20	04:26	05:21	06:27	07:31	07:41	08:43
	15:48	16:54	17:59	20:08	21:15	22:11	22:16	21:22	20:01	18:37	16:18	15:32
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	15:49	16:56	18:02	20:11	21:17	22:12	22:15	21:20	19:58	18:34	16:16	15:31
9	08:56	08:04	06:52	06:25	05:09	04:18	04:28	05:26	06:32	07:36	07:46	08:46
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	15:53	17:01	18:06	20:15	21:21	22:14	22:13	21:15	19:52	18:28	16:12	15:30
11	08:54	07:59	06:46	06:20	05:04	04:17	04:31	05:30	06:36	07:40	07:51	08:49
	15:55	17:04	18:09	20:17	21:23	22:15	22:12	21:12	19:50	18:26	16:10	15:30
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	15:58	17:08	18:13	20:22	21:27	22:17	22:09	21:07	19:44	18:20	16:05	15:29
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	16:02	17:13	18:17	20:26	21:32	22:19	22:06	21:02	19:38	18:15	16:02	15:29
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	16:04	17:15	18:20	20:28	21:34	22:19	22:05	21:00	19:36	18:12	16:00	15:29
17	08:47	07:45	06:30	06:04	04:51	04:15	04:40	05:43	06:49	07:53	08:04	08:56
	16:06	17:18	18:22	20:30	21:36	22:20	22:04	20:57	19:33	18:10	15:58	15:29
18	08:46	07:42	06:27	06:01	04:50	04:15	04:42	05:45	06:51	07:56	08:06	08:57
	16:08	17:20	18:24	20:33	21:38	22:20	22:02	20:55	19:30	18:07	15:56	15:29
19	08:44	07:40	06:24	05:58	04:48	04:15	04:44	05:47	06:53	07:58	08:09	08:57
	16:10	17:22	18:26	20:35	21:40	22:21	22:00	20:52	19:27	18:04	15:54	15:29
20	08:43	07:37	06:21	05:56	04:46	04:15	04:46	05:49	06:55	08:00	08:11	08:58
	16:13	17:25	18:29	20:37	21:42	22:21	21:59	20:50	19:24	18:02	15:53	15:29
21	08:41	07:34	06:18	05:53	04:44	04:15	04:47	05:51	06:57	08:02	08:13	08:59
	16:15	17:27	18:31	20:39	21:44	22:22	21:57	20:47	19:21	17:59	15:51	15:30
22	08:40	07:32	06:16	05:50	04:42	04:15	04:49	05:53	06:59	08:05	08:15	08:59
	16:17	17:30	18:33	20:41	21:46	22:22	21:55	20:44	19:19	17:57	15:49	15:30
23	08:38	07:29	06:13	05:48	04:40	04:15	04:51	05:56	07:01	08:07	08:17	09:00
	16:19	17:32	18:35	20:44	21:47	22:22	21:53	20:42	19:16	17:54	15:48	15:31
24	08:36	07:27	06:10	05:45	04:39	04:15	04:53	05:58	07:03	08:09	08:19	09:00
	16:21	17:34	18:37	20:46	21:49	22:22	21:52	20:39	19:13	17:51	15:46	15:31
25	08:35	07:24	06:07	05:43	04:37	04:16	04:55	06:00	07:06	07:11	08:21	09:00
	16:24	17:37	18:40	20:48	21:51	22:22	21:50	20:36	19:10	16:49	15:45	15:32
26	08:33	07:21	06:04	05:40	04:35	04:16	04:57	06:02	07:08	07:14	08:23	09:01
	16:26	17:39	18:42	20:50	21:53	22:22	21:48	20:34	19:07	16:46	15:43	15:33
27	08:31	07:19	06:02	05:38	04:34	04:17	04:59	06:04	07:10	07:16	08:25	09:01
	16:28	17:41	18:44	20:53	21:55	22:22	21:46	20:31	19:05	16:44	15:42	15:34
28	08:29	07:16	05:59	05:35	04:32	04:17	05:01	06:06	07:12	07:18	08:27	09:01
	16:30	17:43	18:46	20:55	21:56	22:21	21:44	20:28	19:02	16:41	15:41	15:34
29	08:27		06:56	05:32	04:31	04:18	05:03	06:08	07:14	07:21	08:29	09:01
	16:33		19:48	20:57	21:58	22:21	21:42	20:26	18:59	16:39	15:39	15:35
30	08:25		06:53	05:30	04:29	04:19	05:05	06:10	07:16	07:23	08:31	09:01
	16:35		19:51	20:59	22:00	22:21	21:40	20:23	18:56	16:37	15:38	15:37
31	08:23		06:50		04:28		05:07	06:13		07:25		09:01
	16:37		19:53		22:01		21:38	20:20		16:34		15:38
Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Jauna iela 7 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (656)
 Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:28 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
2	09:00 15:40	08:19 16:42	07:11 17:48	06:45 19:57	05:25 21:04	04:25 22:04	04:20 22:20	05:11 21:33	06:17 20:15	07:21 18:51	07:30 16:29	08:35 15:36
3	09:00 15:42	08:17 16:44	07:08 17:50	06:42 19:59	05:23 21:06	04:24 22:06	04:21 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:37 15:35
4	08:59 15:43	08:15 16:47	07:05 17:53	06:39 20:02	05:20 21:08	04:23 22:07	04:22 22:18	05:15 21:29	06:21 20:09	07:25 18:45	07:35 16:25	08:38 15:34
5	08:59 15:45	08:13 16:49	07:03 17:55	06:37 20:04	05:18 21:10	04:22 22:09	04:24 22:18	05:17 21:27	06:23 20:06	07:27 18:42	07:37 16:23	08:40 15:33
6	08:58 15:46	08:10 16:52	07:00 17:57	06:34 20:06	05:16 21:12	04:21 22:10	04:25 22:17	05:19 21:24	06:25 20:04	07:29 18:39	07:39 16:20	08:42 15:32
7	08:58 15:48	08:08 16:54	06:57 17:59	06:31 20:08	05:13 21:15	04:20 22:11	04:26 22:16	05:21 21:22	06:27 20:01	07:31 18:37	07:41 16:18	08:43 15:32
8	08:57 15:49	08:06 16:56	06:55 18:02	06:28 20:10	05:11 21:17	04:19 22:12	04:27 22:15	05:23 21:20	06:30 19:58	07:34 18:34	07:44 16:16	08:45 15:31
9	08:56 15:51	08:04 16:59	06:52 18:04	06:25 20:13	05:09 21:19	04:18 22:13	04:28 22:14	05:26 21:17	06:32 19:55	07:36 18:31	07:46 16:14	08:46 15:31
10	08:55 15:53	08:01 17:01	06:49 18:06	06:23 20:15	05:06 21:21	04:18 22:14	04:30 22:13	05:28 21:15	06:34 19:52	07:38 18:28	07:48 16:12	08:48 15:30
11	08:54 15:55	07:59 17:04	06:46 18:09	06:20 20:17	05:04 21:23	04:17 22:15	04:31 22:12	05:30 21:12	06:36 19:50	07:40 18:26	07:51 16:10	08:49 15:30
12	08:53 15:57	07:57 17:06	06:44 18:11	06:17 20:19	05:02 21:25	04:17 22:16	04:33 22:10	05:32 21:10	06:38 19:47	07:42 18:23	07:53 16:08	08:50 15:29
13	08:52 15:58	07:54 17:08	06:41 18:13	06:15 20:22	05:00 21:27	04:16 22:17	04:34 22:09	05:34 21:07	06:40 19:44	07:45 18:20	07:55 16:05	08:51 15:29
14	08:51 16:00	07:52 17:11	06:38 18:15	06:12 20:24	04:58 21:29	04:16 22:18	04:36 22:08	05:36 21:05	06:42 19:41	07:47 18:18	07:57 16:04	08:53 15:29
15	08:50 16:02	07:49 17:13	06:35 18:17	06:09 20:26	04:56 21:32	04:15 22:19	04:37 22:06	05:38 21:02	06:44 19:38	07:49 18:15	08:00 16:02	08:54 15:29
16	08:48 16:04	07:47 17:15	06:32 18:20	06:06 20:28	04:54 21:34	04:15 22:19	04:39 22:05	05:41 21:00	06:46 19:36	07:51 18:12	08:02 16:00	08:55 15:29
17	08:47 16:06	07:45 17:18	06:30 18:22	06:04 20:30	04:51 21:36	04:15 22:20	04:40 22:04	05:43 20:57	06:49 19:33	07:53 18:10	08:04 15:58	08:56 15:29
18	08:46 16:08	07:42 17:20	06:27 18:24	06:01 20:33	04:50 21:38	04:15 22:20	04:42 22:02	05:45 20:55	06:51 19:30	07:56 18:07	08:06 15:56	08:57 15:29
19	08:44 16:10	07:40 17:22	06:24 18:26	05:58 20:35	04:48 21:40	04:15 22:21	04:44 22:00	05:47 20:52	06:53 19:27	07:58 18:04	08:09 15:54	08:57 15:29
20	08:43 16:13	07:37 17:25	06:21 18:29	05:56 20:37	04:46 21:42	04:15 22:21	04:46 21:59	05:49 20:50	06:55 19:24	08:00 18:02	08:11 15:53	08:58 15:29
21	08:41 16:15	07:34 17:27	06:18 18:31	05:53 20:39	04:44 21:44	04:15 22:22	04:47 21:57	05:51 20:47	06:57 19:21	08:02 17:59	08:13 15:51	08:59 15:30
22	08:40 16:17	07:32 17:30	06:16 18:33	05:50 20:41	04:42 21:45	04:15 22:22	04:49 21:55	05:53 20:44	06:59 19:19	08:05 17:57	08:15 15:49	08:59 15:30
23	08:38 16:19	07:29 17:32	06:13 18:35	05:48 20:44	04:40 21:47	04:15 22:22	04:51 21:53	05:56 20:42	07:01 19:16	08:07 17:54	08:17 15:48	09:00 15:31
24	08:36 16:21	07:27 17:34	06:10 18:37	05:45 20:46	04:39 21:49	04:15 22:22	04:53 21:52	05:58 20:39	07:03 19:13	08:09 17:51	08:19 15:46	09:00 15:31
25	08:35 16:24	07:24 17:37	06:07 18:40	05:43 20:48	04:37 21:51	04:16 22:22	04:55 21:50	06:00 20:36	07:06 19:10	07:11 16:49	08:21 15:45	09:00 15:32
26	08:33 16:26	07:21 17:39	06:04 18:42	05:40 20:50	04:35 21:53	04:16 22:22	04:57 21:48	06:02 20:34	07:08 19:07	07:14 16:46	08:23 15:43	09:01 15:33
27	08:31 16:28	07:19 17:41	06:02 18:44	05:38 20:53	04:34 21:55	04:17 22:22	04:59 21:46	06:04 20:31	07:10 19:05	07:16 16:44	08:25 15:42	09:01 15:34
28	08:29 16:30	07:16 17:43	05:59 18:46	05:35 20:55	04:32 21:56	04:17 22:21	05:01 21:44	06:06 20:28	07:12 19:02	07:18 16:41	08:27 15:41	09:01 15:34
29	08:27 16:33		05:56 19:48	05:32 20:57	04:31 21:58	04:18 22:21	05:03 21:42	06:08 20:26	07:14 18:59	07:21 16:39	08:29 15:39	09:01 15:35
30	08:25 16:35		05:53 19:51	05:30 20:59	04:29 22:00	04:19 22:21	05:05 21:40	06:10 20:23	07:16 18:56	07:23 16:37	08:31 15:38	09:01 15:37
31	08:23 16:37		05:50 19:53		04:28 22:01		05:07 21:38	06:13 20:20		07:25 16:34		09:01 15:38
Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Kalngulbji - Shadow Receptor: 1.0×1.0 Azimuth: 3.1° Slope: 90.0° (793)
 Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December	
1	09:01 15:40	08:21 16:40	07:14 17:46	06:48 19:55	05:28 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:18	06:46 (7) 06:52 (7)	07:19 18:54	07:28 16:32	08:33 15:38
2	09:00 15:41	08:19 16:43	07:11 17:48	06:45 19:57	05:26 21:04	04:26 22:04	04:21 22:20	05:11 21:33	06:17 20:15	06:48 (7) 06:50 (7)	07:21 18:51	07:30 16:30	08:35 15:37
3	09:00 15:42	08:17 16:45	07:08 17:51	06:42 20:00	05:23 21:06	04:25 22:06	04:22 22:19	05:13 21:31	06:19 20:12		07:23 18:48	07:32 16:28	08:37 15:36
4	08:59 15:44	08:15 16:47	07:06 17:53	06:40 20:02	05:21 21:08	04:24 22:07	04:23 22:18	05:16 21:29	06:21 20:09		07:25 18:45	07:35 16:25	08:38 15:35
5	08:59 15:45	08:13 16:50	07:03 17:55	06:37 20:04	05:18 21:10	04:23 22:08	04:24 22:18	05:18 21:27	06:24 20:06		07:27 18:42	07:37 16:23	08:40 15:34
6	08:58 15:47	08:11 16:52	07:00 17:57	06:34 20:06	05:16 21:12	04:22 22:10	04:25 22:17	05:20 21:24	06:26 20:04		07:29 18:40	07:39 16:21	08:42 15:33
7	08:58 15:48	08:08 16:54	06:57 18:00	06:31 20:08	05:14 21:15	04:21 22:11	04:26 22:16	05:22 21:22	06:28 20:01		07:32 18:37	07:42 16:19	08:43 15:32
8	08:57 15:50	08:06 16:57	06:55 18:02	06:29 20:11	05:11 21:17	04:20 22:12	04:28 22:15	05:24 21:20	06:30 19:58		07:34 18:34	07:44 16:16	08:45 15:32
9	08:56 15:52	08:04 16:59	06:52 18:04	06:26 20:13	05:09 21:19	04:19 22:13	04:29 22:14	05:26 21:17	06:32 19:55		07:36 18:32	07:46 16:14	08:46 15:31
10	08:55 15:53	08:01 17:02	06:49 18:07	06:23 20:15	05:07 21:21	04:18 22:14	04:30 22:13	05:28 21:15	06:34 19:53		07:38 18:29	07:48 16:12	08:48 15:31
11	08:54 15:55	07:59 17:04	06:47 18:09	06:20 20:17	05:05 21:23	04:18 22:15	04:32 22:12	05:30 21:12	06:36 19:50		07:40 18:26	07:51 16:10	08:49 15:30
12	08:53 15:57	07:57 17:06	06:44 18:11	06:18 20:19	05:02 21:25	04:17 22:16	04:33 22:10	05:32 21:10	06:38 19:47		07:42 18:23	07:53 16:08	08:50 15:30
13	08:52 15:59	07:54 17:09	06:41 18:13	06:15 20:22	05:00 21:27	04:17 22:17	04:35 22:09	05:35 21:07	06:40 19:44		07:45 18:21	07:55 16:06	08:51 15:30
14	08:51 16:01	07:52 17:11	06:38 18:16	06:12 20:24	05:00 21:29	04:17 22:18	04:36 22:08	05:37 21:05	06:43 19:41		07:47 18:18	07:57 16:04	08:53 15:29
15	08:50 16:03	07:50 17:13	06:35 18:18	06:09 20:26	05:00 21:32	04:16 22:19	04:38 22:06	05:39 21:02	06:45 19:39		07:49 18:15	08:00 16:02	08:54 15:29
16	08:48 16:05	07:47 17:16	06:33 18:20	06:07 20:28	05:00 21:34	04:16 22:19	04:39 22:05	05:41 21:00	06:47 19:36		07:51 18:13	08:02 16:00	08:55 15:29
17	08:47 16:07	07:45 17:18	06:30 18:22	06:04 20:31	05:00 21:36	04:15 22:20	04:41 22:03	05:43 20:57	06:49 19:33		07:54 18:10	08:04 15:58	08:56 15:29
18	08:46 16:09	07:42 17:20	06:27 18:24	06:01 20:33	05:00 21:38	04:15 22:20	04:43 22:02	05:45 20:55	06:51 19:30		07:56 18:07	08:06 15:56	08:56 15:29
19	08:44 16:11	07:40 17:23	06:24 18:27	05:59 20:35	05:00 21:40	04:15 22:21	04:44 22:00	05:47 20:52	06:53 19:27		07:58 18:05	08:09 15:55	08:57 15:30
20	08:43 16:13	07:37 17:25	06:22 18:29	05:56 20:37	05:00 21:42	04:15 22:21	04:46 21:59	05:49 20:50	06:55 19:24		08:00 18:02	08:11 15:53	08:58 15:30
21	08:41 16:15	07:35 17:28	06:19 18:31	05:53 20:39	05:00 21:44	04:15 22:21	04:48 21:57	05:52 20:47	06:57 19:22		08:03 18:00	08:13 15:51	08:59 15:30
22	08:40 16:17	07:32 17:30	06:16 18:33	05:51 20:42	05:00 21:45	04:15 22:22	04:50 21:55	05:54 20:44	06:45 (7) 06:51 (7)		08:05 17:57	08:15 15:50	08:59 15:31
23	08:38 16:20	07:29 17:32	06:13 18:35	05:48 20:44	05:00 21:47	04:16 22:22	04:52 21:53	05:56 20:42	06:42 (7) 06:54 (7)		08:07 17:54	08:17 15:48	09:00 15:31
24	08:36 16:22	07:27 17:35	06:10 18:38	05:46 20:46	05:00 21:49	04:16 22:22	04:54 21:52	05:58 20:39	06:41 (7) 06:55 (7)		08:09 17:52	08:19 15:47	09:00 15:32
25	08:35 16:24	07:24 17:37	06:08 18:40	05:43 20:48	05:00 21:51	04:16 22:22	04:55 21:50	06:00 20:36	06:39 (7) 06:55 (7)		07:12 16:49	08:21 15:45	09:00 15:33
26	08:33 16:26	07:22 17:39	06:05 18:42	05:40 20:50	05:00 21:53	04:17 22:22	04:57 21:48	06:02 20:34	06:39 (7) 06:56 (7)		07:08 16:47	08:23 15:44	09:01 15:33
27	08:31 16:29	07:19 17:41	06:02 18:44	05:38 20:53	05:00 21:55	04:17 22:22	04:59 21:46	06:04 20:31	06:38 (7) 06:56 (7)		07:10 16:44	08:25 15:42	09:01 15:34
28	08:29 16:31	07:16 17:44	05:59 18:46	05:35 20:55	05:00 21:56	04:18 22:21	05:01 21:44	06:07 20:28	06:38 (7) 06:55 (7)		07:12 16:42	08:27 15:41	09:01 15:35
29	08:27 16:33		06:56 19:49	05:33 20:57	05:00 21:58	04:19 22:21	05:03 21:42	06:09 20:26	06:40 (7) 06:55 (7)		07:14 16:39	08:29 15:40	09:01 15:36
30	08:25 16:36		06:54 19:51	05:30 20:59	05:00 22:00	04:19 22:21	05:05 21:40	06:11 20:23	06:42 (7) 06:54 (7)		07:16 16:37	08:31 15:39	09:01 15:37
31	08:23 16:38		06:51 19:53		04:28 22:01	05:07 21:38	06:13 20:20	06:13 20:20	06:44 (7) 06:53 (7)		07:25 16:35		09:01 15:38
Potential sun hours	227	262	365	429	515	539	538	474	386		321	241	207
Total, worst case				142				136	8				
Sun reduction				0.43				0.50	0.46				
Oper. time red.				1.00				1.00	1.00				
Wind dir. red.				1.00				1.00	1.00				
Total reduction				0.43				0.50	0.46				
Total, real				60				69	4				

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Kalnieš i - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (497)
 Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:00 15:39	08:21 16:40	07:13 17:46	17:14 (4) 17:15 (4)	06:47 19:55	05:27 21:01	04:27 22:02	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:27 16:32
2	09:00 15:40	08:19 16:42	07:11 17:48	17:14 (4) 17:18 (4)	06:45 19:57	05:25 21:03	04:25 22:04	04:21 22:19	05:11 21:33	06:17 20:14	07:20 18:50	07:30 16:29
3	08:59 15:42	08:17 16:44	07:08 17:50	17:13 (4) 17:20 (4)	06:42 19:59	05:23 21:05	04:24 22:05	04:21 22:19	05:13 21:31	06:19 20:12	07:22 18:48	07:32 16:27
4	08:59 15:43	08:14 16:47	07:05 17:52	17:12 (4) 17:22 (4)	06:39 20:01	05:20 21:08	04:23 22:07	04:22 22:18	05:15 21:28	06:21 20:09	07:25 18:45	07:34 16:25
5	08:58 15:45	08:12 16:49	07:02 17:55	17:11 (4) 17:25 (4)	06:36 20:04	05:18 21:10	04:22 22:08	04:24 22:17	05:17 21:26	06:23 20:06	07:27 18:42	07:36 16:22
6	08:58 15:46	08:10 16:51	07:00 17:57	17:12 (4) 17:28 (4)	06:34 20:06	05:15 21:12	04:21 22:09	04:25 22:16	05:19 21:24	06:25 20:03	07:29 18:39	07:39 16:20
7	08:57 15:48	08:08 16:54	06:57 17:59	17:12 (4) 17:27 (4)	06:31 20:08	05:13 21:14	04:20 22:11	04:26 22:15	05:21 21:21	06:27 20:00	07:31 18:36	07:41 16:18
8	08:56 15:49	08:06 16:56	06:54 18:02	17:13 (4) 17:26 (4)	06:28 20:10	05:11 21:16	04:19 22:12	04:27 22:14	05:23 21:19	06:29 19:58	07:33 18:34	07:43 16:16
9	08:56 15:51	08:03 16:59	06:52 18:04	17:14 (4) 17:24 (4)	06:25 20:12	05:09 21:18	04:18 22:13	04:28 22:13	05:26 21:17	06:32 19:55	07:35 18:31	07:46 16:14
10	08:55 15:53	08:01 17:01	06:49 18:06	17:24 (4) 20:15	06:23 21:21	05:06 21:24	04:18 22:14	04:30 22:12	05:28 21:14	06:34 19:52	07:38 18:28	07:48 16:12
11	08:54 15:55	07:59 17:03	06:46 18:08	20:15 20:17	05:04 21:23	04:17 22:15	04:31 22:11	04:31 22:11	05:30 21:12	06:36 19:49	07:40 18:26	07:50 16:09
12	08:53 15:56	07:56 17:06	06:43 18:11	20:17 20:19	05:02 21:25	04:17 22:16	04:33 22:10	04:33 22:10	05:32 21:09	06:38 19:46	07:42 18:23	07:53 16:07
13	08:52 15:58	07:54 17:08	06:41 18:13	20:19 20:21	21:25 21:27	22:16 22:17	22:10 22:09	21:09 21:07	19:46 19:44	18:23 18:20	16:07 16:05	15:29 15:29
14	08:50 16:00	07:52 17:11	06:38 18:15	06:12 20:23	04:58 21:29	04:16 22:17	04:36 22:07	05:36 21:05	06:42 19:41	07:46 18:17	07:57 16:03	08:52 15:29
15	08:49 16:02	07:49 17:13	06:35 18:17	06:09 20:26	04:56 21:31	04:15 22:18	04:37 22:06	05:38 21:02	06:44 19:38	07:49 18:15	07:59 16:01	08:53 15:29
16	08:48 16:04	07:47 17:15	06:32 18:19	06:06 20:28	04:53 21:33	04:15 22:19	04:39 22:05	05:40 20:59	06:46 19:35	07:51 18:12	08:02 16:00	08:54 15:29
17	08:47 16:06	07:44 17:18	06:29 18:22	06:04 20:30	04:51 21:35	04:15 22:19	04:40 22:03	05:43 20:57	06:48 19:32	07:53 18:09	08:04 15:58	08:55 15:29
18	08:45 16:08	07:42 17:20	06:27 18:24	06:01 20:32	04:49 21:37	04:15 22:20	04:42 22:01	05:45 20:54	06:50 19:30	07:55 18:07	08:06 15:56	08:56 15:29
19	08:44 16:10	07:39 17:22	06:24 18:26	05:58 20:34	04:48 21:39	04:15 22:20	04:44 22:00	05:47 20:52	06:53 19:27	07:58 18:04	08:08 15:54	08:57 15:29
20	08:42 16:13	07:37 17:25	06:21 18:28	05:56 20:37	04:46 21:41	04:15 22:21	04:46 21:58	05:49 20:49	06:55 19:24	08:00 18:02	08:10 15:52	08:58 15:29
21	08:41 16:15	07:34 17:27	06:18 18:31	05:53 20:39	04:44 21:43	04:15 22:21	04:47 21:57	05:51 20:47	06:57 19:21	08:02 17:59	08:13 15:51	08:58 15:30
22	08:39 16:17	07:32 17:29	06:15 18:33	05:50 20:41	04:42 21:45	04:15 22:21	04:49 21:55	05:53 20:44	06:59 19:18	08:04 17:56	08:15 15:49	08:59 15:30
23	08:38 16:19	07:29 17:32	06:13 18:35	05:48 20:43	04:40 21:47	04:15 22:21	04:51 21:53	05:55 20:41	07:01 19:16	08:07 17:54	08:17 15:48	08:59 15:31
24	08:36 16:21	07:26 17:34	06:10 18:37	05:45 20:46	04:38 21:49	04:15 22:21	04:53 21:51	05:58 20:39	07:03 19:13	08:09 17:51	08:19 15:46	09:00 15:31
25	08:34 16:24	07:24 17:36	06:07 18:39	05:43 20:48	04:37 21:51	04:16 22:21	04:55 21:49	06:00 20:36	07:05 19:10	07:11 16:49	08:21 15:45	09:00 15:32
26	08:32 16:26	07:21 17:39	06:04 18:42	05:40 20:50	04:35 21:52	04:16 22:21	04:57 21:47	06:02 20:33	07:07 19:07	07:13 16:46	08:23 15:43	09:00 15:33
27	08:30 16:28	07:19 17:41	06:01 18:44	05:37 20:52	04:34 21:54	04:17 22:21	04:59 21:45	06:04 20:31	07:10 19:04	07:16 16:44	08:25 15:42	09:00 15:34
28	08:29 16:30	07:16 17:43	05:59 18:46	05:35 20:54	04:32 21:56	04:17 22:21	05:01 21:43	06:06 20:28	07:12 19:01	07:18 16:41	08:27 15:41	09:01 15:34
29	08:27 16:33		06:56 19:48	05:32 20:57	04:31 21:58	04:18 22:21	05:03 21:41	06:08 20:25	07:14 18:59	07:20 16:39	08:29 15:39	09:01 15:35
30	08:25 16:35		06:53 19:50	05:30 20:59	04:29 21:59	04:19 22:20	05:05 21:39	06:10 20:23	07:16 18:56	07:23 16:36	08:31 15:38	09:00 15:37
31	08:23 16:37		06:50 19:53		04:28 22:01		05:07 21:37	06:12 20:20		07:25 16:34		09:00 15:38
Potential sun hours	227	262	365	429	515	539	538	474	386	321	241	207
Total, worst case			90							90		
Sun reduction			0.40							0.28		
Oper. time red.			1.00							1.00		
Wind dir. red.			1.00							1.00		
Total reduction			0.40							0.28		
Total, real			36							25		

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Kalnstaldoti - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (785)
 Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January			February			March			April	May	June
1	09:01		09:56 (7)	08:21		08:58 (8)	07:14		07:41 (5)	06:48	05:28	04:27
	15:40	19	10:15 (7)	16:40	25	09:23 (6)	17:46	17	07:58 (5)	19:55	21:01	22:03
2	09:00		09:57 (7)	08:19		08:57 (8)	07:11		07:38 (5)	06:45	05:25	04:26
	15:41	19	10:16 (7)	16:42	26	09:23 (6)	17:48	20	07:58 (5)	19:57	21:04	22:04
3	09:00		09:57 (7)	08:17		08:58 (8)	07:08		07:37 (5)	06:42	05:23	04:25
	15:42	19	10:16 (7)	16:45	25	09:23 (6)	17:51	21	07:58 (5)	20:00	21:06	22:06
4	08:59		09:57 (7)	08:15		08:59 (8)	07:06		07:38 (5)	06:39	05:21	04:23
	15:44	19	10:16 (7)	16:47	23	09:22 (6)	17:53	20	07:58 (5)	20:02	21:08	22:07
5	08:59		09:58 (7)	08:13		09:00 (8)	07:03		07:38 (5)	06:37	05:18	04:22
	15:45	18	10:16 (7)	16:49	23	09:23 (6)	17:55	20	07:58 (5)	20:04	21:10	22:09
6	08:58		09:59 (7)	08:11		09:02 (6)	07:00		07:38 (5)	06:34	05:16	04:21
	15:47	18	10:17 (7)	16:52	21	09:23 (6)	17:57	18	07:56 (5)	20:06	21:12	22:10
7	08:58		09:59 (7)	08:08		09:03 (6)	06:57		07:39 (5)	06:31	05:13	04:20
	15:48	17	10:16 (7)	16:54	18	09:21 (6)	18:00	16	07:55 (5)	20:08	21:15	22:11
8	08:57		10:00 (7)	08:06		09:04 (6)	06:55		07:40 (5)	06:28	05:11	04:20
	15:50	16	10:16 (7)	16:57	17	09:21 (6)	18:02	13	07:53 (5)	20:11	21:17	22:12
9	08:56		10:01 (7)	08:04		09:05 (6)	06:52		07:44 (5)	06:26	05:09	04:19
	15:51	16	10:17 (7)	16:59	14	09:19 (6)	18:04	6	07:50 (5)	20:13	21:19	22:13
10	08:55		10:02 (7)	08:01		09:08 (6)	06:49		07:16 (1)	06:23	05:07	04:18
	15:53	15	10:17 (7)	17:01	9	09:17 (6)	18:06	1	07:17 (1)	20:15	21:21	22:14
11	08:54		10:03 (7)	07:59			06:46		07:13 (1)	06:20	05:04	04:17
	15:55	14	10:17 (7)	17:04			18:09	5	07:18 (1)	20:17	21:23	22:15
12	08:53		10:04 (7)	07:57			06:44		07:10 (1)	06:17	05:02	04:17
	15:57	12	10:16 (7)	17:06			18:11	8	07:18 (1)	20:19	21:25	22:16
13	08:52		10:06 (7)	07:54			06:41		07:07 (1)	06:15	05:00	04:16
	15:59	10	10:16 (7)	17:09			18:13	11	07:18 (1)	20:22	21:27	22:17
14	08:51		10:07 (7)	07:52			06:38		07:04 (1)	06:12	04:58	04:16
	16:01	7	10:14 (7)	17:11			18:15	13	07:17 (1)	20:24	21:30	22:18
15	08:50			07:50			06:35		07:03 (1)	06:09	04:56	04:16
	16:03			17:13			18:18	15	07:18 (1)	20:26	21:32	22:19
16	08:48			07:47		08:16 (9)	06:33		07:03 (1)	06:07	04:54	04:15
	16:05			17:16	2	08:18 (9)	18:20	13	07:16 (1)	20:28	21:34	22:19
17	08:47			07:45		08:13 (9)	06:30		07:04 (1)	06:04	04:52	04:15
	16:07			17:18	5	08:18 (9)	18:22	10	07:14 (1)	20:31	21:36	22:20
18	08:46			07:42		08:11 (9)	06:27		07:06 (1)	06:01	04:50	04:15
	16:09			17:20	9	08:20 (9)	18:24	5	07:11 (1)	20:33	21:38	22:20
19	08:44			07:40		08:08 (9)	06:24			05:59	04:48	04:15
	16:11			17:23	12	08:20 (9)	18:27			20:35	21:40	22:21
20	08:43			07:37		08:05 (9)	06:21			05:56	04:46	04:15
	16:13			17:25	15	08:20 (9)	18:29			20:37	21:42	22:21
21	08:41			07:35		08:03 (9)	06:19			05:53	04:44	04:15
	16:15			17:27	17	08:20 (9)	18:31			20:39	21:44	22:22
22	08:40			07:32		08:03 (9)	06:16			05:51	04:42	04:15
	16:17			17:30	16	08:19 (9)	18:33			20:42	21:46	22:22
23	08:38			07:29		08:03 (9)	06:13			05:48	04:41	04:15
	16:19			17:32	15	08:18 (9)	18:35			20:44	21:47	22:22
24	08:36		09:11 (6)	07:27		08:05 (9)	06:10			05:45	04:39	04:16
	16:22	4	09:15 (6)	17:34	13	08:18 (9)	18:38			20:46	21:49	22:22
25	08:35		09:09 (6)	07:24		07:52 (5)	06:07			05:43	04:37	04:16
	16:24	8	09:17 (6)	17:37	12	08:16 (9)	18:40			20:48	21:51	22:22
26	08:33		09:07 (6)	07:22		07:49 (5)	06:05			05:40	04:36	04:17
	16:26	11	09:18 (6)	17:39	10	08:12 (9)	18:42			20:50	21:53	22:22
27	08:31		09:05 (6)	07:19		07:46 (5)	06:02			05:38	04:34	04:17
	16:28	15	09:20 (6)	17:41	11	07:57 (5)	18:44			20:53	21:55	22:22
28	08:29		09:03 (6)	07:16		07:44 (5)	05:59			05:35	04:32	04:18
	16:31	18	09:21 (6)	17:44	14	07:58 (5)	18:46			20:55	21:56	22:21
29	08:27		09:00 (6)				06:56			05:33	04:31	04:18
	16:33	21	09:21 (6)				19:49			20:57	21:58	22:21
30	08:25		08:58 (8)				06:53			05:30	04:30	04:19
	16:35	24	09:22 (6)				19:51			20:59	22:00	22:21
31	08:23		08:57 (8)				06:51				04:28	
	16:38	25	09:22 (6)				19:53				22:01	
Potential sun hours	227			262			365		429	515	539	
Total, worst case		345			352		232					
Sun reduction		0.11			0.19		0.40					
Oper. time red.		1.00			1.00		1.00					
Wind dir. red.		1.00			1.00		1.00					
Total reduction		0.11			0.19		0.40					
Total, real		38			68		93					

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Kalnstaldoti - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (785)
Sunshine probability S (Average daily sunshine hours) []

Assumptions for shadow calculations

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
0.80 1.82 4.75 6.09 9.67 10.05 8.16 7.72 5.94 2.93 0.63 0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	July	August	September	October	November	December
1	04:20 22:20	05:09 21:35	06:15 20:17	07:19 18:54	07:48 (1) 16:32	08:37 (6) 15:37
2	04:21 22:20	05:11 21:33	06:17 20:15	07:21 18:51	07:50 (1) 16:30	08:35 (6) 15:36
3	04:22 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:53 (1) 16:27	08:34 (6) 15:35
4	04:23 22:18	05:15 21:29	06:21 20:09	07:25 18:45	07:55 (1) 16:25	08:35 (6) 15:34
5	04:24 22:18	05:17 21:27	06:23 20:06	07:27 18:42	08:19 (5) 16:23	08:32 (6) 15:34
6	04:25 22:17	05:20 21:24	06:26 20:04	07:29 18:40	08:29 (5) 16:21	08:32 (6) 15:33
7	04:26 22:16	05:22 21:22	06:28 20:01	07:32 18:37	08:14 (5) 16:18	08:29 (8) 15:32
8	04:27 22:15	05:24 21:20	06:30 19:58	07:34 18:34	08:14 (5) 16:16	08:29 (8) 15:31
9	04:29 22:14	05:26 21:17	06:32 19:55	07:36 18:31	08:13 (5) 16:14	08:28 (8) 15:31
10	04:30 22:13	05:28 21:15	06:34 19:53	07:38 18:29	08:12 (5) 16:12	08:28 (8) 15:30
11	04:31 22:12	05:30 21:12	06:36 19:50	07:40 18:26	08:12 (5) 16:10	08:28 (8) 15:30
12	04:33 22:10	05:32 21:10	06:38 19:47	07:42 18:23	08:13 (5) 16:08	08:30 (8) 15:30
13	04:34 22:09	05:34 21:07	06:40 19:44	07:45 18:21	08:15 (5) 16:06	08:32 (6) 15:29
14	04:36 22:08	05:37 21:05	06:42 19:41	07:47 18:18	08:17 (5) 16:04	08:35 (6) 15:29
15	04:38 22:06	05:39 21:02	06:45 19:38	07:49 18:15	08:20 (5) 16:02	08:38 (6) 15:29
16	04:39 22:05	05:41 21:00	06:47 19:36	07:51 18:13	08:22 (5) 16:00	08:40 (6) 15:29
17	04:41 22:04	05:43 20:57	06:49 19:33	07:54 18:10	08:24 (9) 15:58	08:43 (6) 15:29
18	04:42 22:02	05:45 20:55	06:51 19:30	07:56 18:07	08:25 (9) 15:56	08:45 (6) 15:29
19	04:44 22:00	05:47 20:52	06:53 19:27	07:58 18:05	08:27 (9) 15:55	08:47 (6) 15:29
20	04:46 21:59	05:49 20:50	06:55 19:24	08:00 18:02	08:34 (9) 15:53	08:50 (7) 15:30
21	04:48 21:57	05:51 20:47	06:57 19:22	08:03 17:59	08:36 (9) 15:51	08:52 (7) 15:30
22	04:50 21:55	05:54 20:44	06:59 19:19	08:05 17:57	08:37 (9) 15:50	08:53 (7) 15:30
23	04:51 21:53	05:56 20:42	07:01 19:16	08:07 17:54	08:39 (9) 15:48	08:55 (7) 15:31
24	04:53 21:52	05:58 20:39	07:04 19:13	08:09 17:52	08:41 (9) 15:46	08:57 (7) 15:32
25	04:55 21:50	06:00 20:36	07:06 19:10	08:12 17:49	08:44 (9) 15:45	09:00 (7) 15:32
26	04:57 21:48	06:02 20:34	07:08 19:08	08:14 17:47	08:46 (9) 15:44	09:02 (7) 15:33
27	04:59 21:46	06:04 20:31	07:10 19:05	08:16 17:44	08:48 (9) 15:42	09:04 (7) 15:34
28	05:01 21:44	06:06 20:28	07:12 19:02	08:18 17:42	08:50 (9) 15:41	09:06 (7) 15:35
29	05:03 21:42	06:09 20:26	07:14 18:59	08:21 17:39	08:53 (9) 15:40	09:09 (7) 15:36
30	05:05 21:40	06:11 20:23	07:16 18:56	08:23 17:37	08:55 (9) 15:38	09:11 (7) 15:37
31	05:07 21:38	06:13 20:20		08:25 17:35		09:13 (7) 15:38
Potential sun hours	538	474	386	321	241	207
Total, worst case			63	322	356	580
Sun reduction			0.46	0.28	0.08	0.06
Oper. time red.			1.00	1.00	1.00	1.00
Wind dir. red.			1.00	1.00	1.00	1.00
Total reduction			0.46	0.28	0.08	0.06
Total, real			29	91	28	36

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Last time (hh:mm) with flicker	(WTG causing flicker last time)

Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Kalngerki - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (777)
 Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January			February			March			April			May			June		
1	09:00			08:21			09:24 (7)	07:14		07:44 (10)	06:48		07:21 (9)	05:28		06:26 (5)	04:27	
	15:40			16:40	36		10:00 (7)	17:46	22	08:06 (8)	19:55	57	08:38 (6)	21:01	20	06:46 (5)	22:03	
2	09:00			08:19			09:24 (7)	07:11		07:42 (8)	06:45		07:21 (9)	05:25		06:28 (5)	04:26	
	15:41			16:42	36		10:00 (7)	17:48	24	08:06 (8)	19:57	53	08:36 (6)	21:04	17	06:45 (5)	22:04	
3	09:00			08:17			09:25 (7)	07:08		07:41 (8)	06:42		07:21 (9)	05:23		06:29 (5)	04:25	
	15:42			16:45	36		10:01 (7)	17:51	26	08:07 (8)	20:00	49	08:34 (6)	21:06	13	06:42 (5)	22:06	
4	08:59			08:15			09:24 (7)	07:06		07:40 (8)	06:39		07:22 (9)	05:21		06:31 (5)	04:23	
	15:44			16:47	36		10:00 (7)	17:53	27	08:07 (8)	20:02	45	08:33 (6)	21:08	9	06:40 (5)	22:07	
5	08:59			08:13			09:25 (7)	07:03		07:40 (8)	06:37		07:23 (9)	05:18			04:22	
	15:45			16:49	36		10:01 (7)	17:55	28	08:08 (8)	20:04	36	08:29 (6)	21:10			22:08	
6	08:58			08:10			09:26 (7)	07:00		07:40 (8)	06:34		07:24 (9)	05:16			04:21	
	15:47			16:52	35		10:01 (7)	17:57	27	08:07 (8)	20:06	26	08:25 (6)	21:12			22:10	
7	08:58			08:08			09:25 (7)	06:57		07:39 (8)	06:31		07:25 (9)	05:13			04:20	
	15:48			16:54	35		10:00 (7)	18:00	28	08:07 (8)	20:08	11	07:36 (9)	21:15			22:11	
8	08:57			08:06			09:26 (7)	06:55		07:39 (8)	06:28			05:11			04:20	
	15:50			16:57	35		10:01 (7)	18:02	27	08:06 (8)	20:11			21:17			22:12	
9	08:56			08:04			09:26 (7)	06:52		07:39 (8)	06:26			05:09			04:19	
	15:52			16:59	34		10:00 (7)	18:04	27	08:06 (8)	20:13			21:19			22:13	
10	08:55			08:01			09:28 (7)	06:49		07:40 (8)	06:23			05:07			04:18	
	15:53			17:01	31		09:59 (7)	18:06	25	08:05 (8)	20:15			21:21			22:14	
11	08:54			07:59			09:28 (7)	06:46		07:41 (8)	06:20			05:04			04:17	
	15:55			17:04	30		09:58 (7)	18:09	23	08:04 (8)	20:17			21:23			22:15	
12	08:53			07:57			09:29 (7)	06:44		07:25 (6)	06:17			05:02			04:17	
	15:57			17:06	28		09:57 (7)	18:11	28	08:03 (8)	20:19			21:25			22:16	
13	08:52			07:54			09:30 (7)	06:41		07:19 (6)	06:15			05:00			04:16	
	15:59			17:09	26		09:56 (7)	18:13	36	08:01 (8)	20:22			21:27			22:17	
14	08:51			07:52			09:32 (7)	06:38		07:16 (6)	06:12			04:58			04:16	
	16:01			17:11	22		09:54 (7)	18:15	36	07:58 (8)	20:24			21:29			22:18	
15	08:50			07:49			09:34 (7)	06:35		07:14 (6)	06:09		06:36 (5)	04:56			04:16	
	16:03			17:13	18		09:52 (7)	18:18	32	07:54 (8)	20:26	10	06:46 (5)	21:32			22:19	
16	08:48			07:47			09:37 (7)	06:33		07:12 (6)	06:07		06:33 (5)	04:54			04:15	
	16:05			17:16	12		09:49 (7)	18:20	30	07:42 (6)	20:28	14	06:47 (5)	21:34			22:19	
17	08:47			07:45				06:30		07:10 (6)	06:04		06:31 (5)	04:52			04:15	
	16:07			17:18				18:22	33	07:43 (6)	20:30	18	06:49 (5)	21:36			22:20	
18	08:46			07:42				06:27		06:53 (3)	06:01		06:28 (5)	04:50			04:15	
	16:09	9	09:44 (7)	17:20				18:24	35	07:43 (6)	20:33	22	06:50 (5)	21:38			22:20	
19	08:44			07:40				06:24		06:50 (3)	05:59		06:26 (1)	04:48			04:15	
	16:11	15	09:47 (7)	17:23				18:27	41	07:44 (6)	20:35	25	06:51 (5)	21:40			22:21	
20	08:43			07:37				06:21		06:47 (3)	05:56		06:23 (1)	04:46			04:15	
	16:13	18	09:49 (7)	17:25				18:29	46	07:44 (6)	20:37	28	06:51 (5)	21:42			22:21	
21	08:41			07:34				06:19		06:45 (3)	05:53		06:21 (1)	04:44			04:15	
	16:15	21	09:50 (7)	17:27				18:31	50	07:45 (6)	20:39	31	06:52 (5)	21:44			22:21	
22	08:40			07:32				06:16		06:42 (3)	05:51		06:20 (1)	04:42			04:15	
	16:17	24	09:52 (7)	17:30				18:33	54	07:45 (6)	20:42	31	06:51 (5)	21:45			22:22	
23	08:38			07:29				06:13		06:39 (3)	05:48		06:21 (1)	04:41			04:15	
	16:19	26	09:53 (7)	17:32	2		07:59 (10)	18:35	56	07:45 (6)	20:44	31	06:52 (5)	21:47			22:22	
24	08:36			07:27				06:10		06:36 (9)	05:45		06:21 (1)	04:39			04:16	
	16:22	27	09:54 (7)	17:34	6		08:01 (10)	18:38	58	07:44 (6)	20:46	30	06:51 (5)	21:49			22:22	
25	08:34			07:24				06:07		06:33 (9)	05:43		06:22 (1)	04:37			04:16	
	16:24	29	09:55 (7)	17:37	10		08:02 (10)	18:40	61	07:44 (6)	20:48	29	06:51 (5)	21:51			22:22	
26	08:33			07:22				06:05		06:31 (9)	05:40		06:22 (1)	04:36			04:17	
	16:26	30	09:56 (7)	17:39	13		08:02 (10)	18:42	61	07:44 (6)	20:50	28	06:50 (5)	21:53			22:22	
27	08:31			07:19				06:02		06:28 (9)	05:38		06:24 (5)	04:34			04:17	
	16:28	31	09:57 (7)	17:41	16		08:02 (10)	18:44	59	07:43 (6)	20:53	26	06:50 (5)	21:55			22:22	
28	08:29			07:16				05:59		06:25 (9)	05:35		06:24 (5)	04:32			04:18	
	16:31	33	09:58 (7)	17:44	21		08:05 (8)	18:46	58	07:42 (6)	20:55	26	06:50 (5)	21:56			22:21	
29	08:27							06:56		07:23 (9)	05:33		06:24 (5)	04:31			04:18	
	16:33	34	09:58 (7)					19:49	59	08:41 (6)	20:57	24	06:48 (5)	21:58			22:21	
30	08:25							06:53		07:22 (9)	05:30		06:25 (5)	04:30			04:19	
	16:35	35	09:59 (7)					19:51	59	08:40 (6)	20:59	22	06:47 (5)	22:00			22:21	
31	08:23							06:51		07:22 (9)				04:28				
	16:38	35	10:00 (7)					19:53	59	08:40 (6)				22:01				
Potential sun hours	227			262				365		429			515			539		
Total, worst case		367			554			1235			672			59				
Sun reduction		0.11			0.19			0.40			0.43			0.58				
Oper. time red.		1.00			1.00			1.00			1.00			1.00				
Wind dir. red.		1.00			1.00			1.00			1.00			1.00				
Total reduction		0.11			0.19			0.40			0.43			0.58				
Total, real		40			108			498			286			34				

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Kalngerki - Shadow Receptor: 1.0×1.0 Azimuth: 3.1° Slope: 90.0° (777)
 Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	July	August	September	October	November	December
1	04:20	05:09	06:15	07:19	08:01 (6)	07:28
	22:20	21:35	20:17	18:53	32	08:41 (8)
2	04:21	05:11	06:17	07:21	08:19 (8)	07:30
	22:20	21:33	20:15	18:51	23	08:42 (8)
3	04:22	05:13	06:19	07:23	08:18 (8)	07:32
	22:19	21:31	20:12	18:48	24	08:42 (8)
4	04:23	05:15	06:21	07:25	08:17 (8)	07:35
	22:18	21:29	20:09	18:45	26	08:43 (8)
5	04:24	05:17	06:23	07:22 (9)	07:27	08:16 (8)
	22:18	21:26	20:06	11	07:33 (9)	18:42
6	04:25	05:20	06:26	07:20 (9)	07:29	08:16 (8)
	22:17	21:24	20:04	25	08:21 (6)	18:40
7	04:26	05:22	06:28	07:18 (9)	07:31	08:15 (8)
	22:16	21:22	20:01	36	08:24 (6)	18:37
8	04:27	05:24	06:30	07:17 (9)	07:34	08:16 (8)
	22:15	21:20	19:58	44	08:27 (6)	18:34
9	04:29	05:26	06:32	07:15 (9)	07:36	08:15 (8)
	22:14	21:17	10	06:50 (5)	19:55	49
10	04:30	05:28	06:37 (5)	06:34	07:14 (9)	07:38
	22:13	21:15	15	06:52 (5)	19:52	53
11	04:32	05:30	06:36 (5)	06:36	07:14 (9)	07:40
	22:12	21:12	18	06:54 (5)	19:50	55
12	04:33	05:32	06:34 (5)	06:38	07:13 (9)	07:42
	22:10	21:10	21	06:55 (5)	19:47	59
13	04:34	05:34	06:33 (5)	06:40	07:13 (9)	07:45
	22:09	21:07	23	06:56 (5)	19:44	59
14	04:36	05:37	06:32 (5)	06:42	07:13 (9)	07:47
	22:08	21:05	25	06:57 (5)	19:41	61
15	04:38	05:39	06:32 (5)	06:45	07:14 (9)	07:49
	22:06	21:02	25	06:57 (5)	19:38	60
16	04:39	05:41	06:31 (5)	06:47	07:16 (9)	07:51
	22:05	21:00	26	06:57 (5)	19:36	57
17	04:41	05:43	06:29 (1)	06:49	07:18 (9)	07:53
	22:03	20:57	29	06:58 (5)	19:33	61
18	04:43	05:45	06:28 (1)	06:51	07:20 (9)	07:56
	22:02	20:55	30	06:58 (5)	19:30	60
19	04:44	05:47	06:27 (1)	06:53	07:23 (9)	07:58
	22:00	20:52	30	06:57 (5)	19:27	59
20	04:46	05:49	06:26 (1)	06:55	07:26 (3)	08:00
	21:59	20:50	31	06:57 (5)	19:24	56
21	04:48	05:51	06:26 (1)	06:57	07:27 (3)	08:02
	21:57	20:47	31	06:57 (5)	19:22	55
22	04:50	05:54	06:26 (1)	06:59	07:29 (3)	08:05
	21:55	20:44	30	06:56 (5)	19:19	51
23	04:52	05:56	06:28 (1)	07:01	07:31 (3)	08:07
	21:53	20:42	27	06:55 (5)	19:16	47
24	04:53	05:58	06:30 (1)	07:04	07:33 (3)	08:09
	21:52	20:39	24	06:54 (5)	19:13	43
25	04:55	06:00	06:32 (5)	07:06	07:35 (3)	07:12
	21:50	20:36	21	06:53 (5)	19:10	38
26	04:57	06:02	06:34 (5)	07:08	07:52 (6)	07:14
	21:48	20:34	18	06:52 (5)	19:07	33
27	04:59	06:04	06:36 (5)	07:10	07:53 (6)	07:16
	21:46	20:31	14	06:50 (5)	19:05	30
28	05:01	06:06	06:38 (5)	07:12	07:55 (6)	07:18
	21:44	20:28	9	06:47 (5)	19:02	27
29	05:03	06:09		07:14	07:56 (6)	07:21
	21:42	20:26		18:59	08:38 (8)	16:39
30	05:05	06:11		07:16	07:58 (6)	07:23
	21:40	20:23		18:56	08:40 (8)	16:37
31	05:07	06:13			07:25	08:57 (7)
	21:38	20:20			16:34	31
Potential sun hours	538	474	386	321	241	207
Total, worst case		457	1201	537	718	
Sun reduction		0.50	0.46	0.28	0.08	
Oper. time red.		1.00	1.00	1.00	1.00	
Wind dir. red.		1.00	1.00	1.00	1.00	
Total reduction		0.50	0.46	0.28	0.08	
Total, real		231	555	152	56	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

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Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Kastanas - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (478)
 Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January		February		March		April	May	June
1	09:00	14:45 (12)	08:21	15:47 (14)	07:13		06:48	05:27	04:27
	15:39	8	14:53 (4)	16:40	16	16:03 (14)	17:46	19:55	21:01
2	09:00	14:45 (12)	08:19	15:48 (14)	07:11		06:45	05:25	04:25
	15:40	9	14:54 (4)	16:42	16	16:04 (14)	17:48	19:57	21:03
3	09:00	14:46 (12)	08:17	15:49 (14)	07:08		06:42	05:23	04:24
	15:42	10	14:56 (4)	16:44	14	16:03 (14)	17:50	19:59	21:06
4	08:59	14:46 (12)	08:15	15:49 (14)	07:05		06:39	05:20	04:23
	15:43	12	14:58 (4)	16:47	13	16:02 (14)	17:53	20:01	21:08
5	08:59	14:47 (12)	08:12	15:51 (14)	07:03		06:36	05:18	04:22
	15:45	12	14:59 (4)	16:49	10	16:01 (14)	17:55	20:04	21:10
6	08:58	14:47 (12)	08:10	15:54 (14)	07:00		06:34	05:15	04:21
	15:46	14	15:01 (4)	16:52	3	15:57 (14)	17:57	20:06	21:12
7	08:57	14:47 (12)	08:08				06:57	06:31	05:13
	15:48	16	15:03 (4)	16:54			17:59	20:08	21:14
8	08:57	14:48 (12)	08:06				06:54	06:28	05:11
	15:49	17	15:05 (4)	16:56			18:02	20:10	21:16
9	08:56	14:49 (12)	08:03				06:52	06:25	05:09
	15:51	18	15:07 (4)	16:59			18:04	20:12	21:19
10	08:55	14:50 (12)	08:01				06:49	06:23	05:06
	15:53	19	15:09 (4)	17:01			18:06	20:15	21:21
11	08:54	14:50 (4)	07:59	16:27 (2)	06:46		06:20	05:04	04:17
	15:55	21	15:11 (4)	17:03	3	16:30 (2)	18:08	20:17	21:23
12	08:53	14:51 (4)	07:56	16:24 (2)	06:43		06:17	05:02	04:17
	15:57	22	15:13 (4)	17:06	8	16:32 (2)	18:11	20:19	21:25
13	08:52	14:50 (4)	07:54	16:24 (2)	06:41		06:14	05:00	04:16
	15:58	23	15:13 (4)	17:08	11	16:35 (2)	18:13	20:21	21:27
14	08:51	14:51 (4)	07:52	16:22 (2)	06:38		06:12	04:58	04:16
	16:00	23	15:14 (4)	17:11	16	16:38 (2)	18:15	20:24	21:29
15	08:49	14:51 (4)	07:49	16:21 (2)	06:35		06:09	04:56	04:15
	16:02	23	15:14 (4)	17:13	19	16:40 (2)	18:17	20:26	21:31
16	08:48	14:52 (4)	07:47	16:21 (2)	06:32		17:48 (1)	06:06	04:53
	16:04	23	15:15 (4)	17:15	22	16:43 (2)	18:20	20:28	21:33
17	08:47	14:52 (4)	07:44	16:20 (2)	06:29		17:48 (1)	06:04	04:51
	16:06	22	15:14 (4)	17:18	25	16:45 (2)	18:22	20:30	21:35
18	08:45	14:53 (4)	07:42	16:21 (2)	06:27		17:47 (1)	06:01	04:49
	16:08	21	15:14 (4)	17:20	26	16:48 (3)	18:24	20:32	21:37
19	08:44	14:53 (4)	07:39	16:20 (2)	06:24		17:47 (1)	05:58	04:48
	16:10	21	15:14 (4)	17:22	31	16:51 (3)	18:26	20:35	21:39
20	08:42	14:55 (4)	07:37	16:20 (2)	06:21		17:47 (1)	05:56	04:46
	16:13	20	15:15 (4)	17:25	33	16:53 (3)	18:28	20:37	21:41
21	08:41	14:55 (4)	07:34	16:20 (2)	06:18		17:47 (1)	05:53	04:44
	16:15	20	15:15 (4)	17:27	35	16:55 (3)	18:31	20:39	21:43
22	08:39	14:56 (4)	07:32	16:21 (2)	06:16		17:48 (1)	05:50	04:42
	16:17	18	15:14 (4)	17:29	36	16:58 (3)	18:33	20:41	21:45
23	08:38	14:57 (4)	07:29	16:21 (2)	06:13		17:51 (1)	05:48	04:40
	16:19	17	15:14 (4)	17:32	37	17:00 (3)	18:35	20:43	21:47
24	08:36	14:58 (4)	07:26	16:22 (2)	06:10		05:45	04:39	04:15
	16:21	15	15:13 (4)	17:34	33	16:59 (3)	18:37	20:46	21:49
25	08:34	15:00 (4)	07:24	16:24 (2)	06:07		05:43	04:37	04:16
	16:24	12	15:12 (4)	17:36	27	16:58 (3)	18:39	20:48	21:51
26	08:32	15:03 (4)	07:21	16:26 (2)	06:04		05:40	04:35	04:16
	16:26	9	15:48 (14)	17:39	17	16:55 (3)	18:42	20:50	21:53
27	08:31	15:46 (14)	07:19	16:29 (2)	06:02		05:37	04:34	04:17
	16:28	4	15:50 (14)	17:41	5	16:34 (2)	18:44	20:52	21:54
28	08:29	15:46 (14)	07:16				05:59	05:35	04:32
	16:30	6	15:52 (14)	17:43			18:46	20:55	21:56
29	08:27	15:46 (14)					06:56	05:32	04:31
	16:33	9	15:55 (14)				19:48	20:57	21:58
30	08:25	15:46 (14)					06:53	05:30	04:29
	16:35	12	15:58 (14)				19:50	20:59	21:59
31	08:23	15:47 (14)					06:50		04:28
	16:37	14	16:01 (14)				19:53		22:01
Potential sun hours	227		262		365		429	515	539
Total, worst case	490		456		68				
Sun reduction	0.11		0.19		0.40				
Oper. time red.	1.00		1.00		1.00				
Wind dir. red.	1.00		1.00		1.00				
Total reduction	0.11		0.19		0.40				
Total, real	53		89		27				

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Kastanas - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (478)
Sunshine probability S (Average daily sunshine hours) []

Assumptions for shadow calculations

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
0.80 1.82 4.75 6.09 9.67 10.05 8.16 7.72 5.94 2.93 0.63 0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	July	August	September	October	November	December
1	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:27 16:32	08:33 15:37 21 14:32 (4)
2	04:21 22:19	05:11 21:33	06:17 20:14	07:20 18:50	07:30 16:29	08:35 15:36 20 14:32 (4)
3	04:21 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:36 15:35 18 14:32 (4)
4	04:22 22:18	05:15 21:28	06:21 20:09	07:25 18:45	07:34 16:25	08:38 15:34 17 14:32 (12)
5	04:24 22:17	05:17 21:26	06:23 20:06	07:27 18:42	07:37 16:23 5 15:23 (14)	08:40 15:33 15 14:33 (12)
6	04:25 22:16	05:19 21:24	06:25 20:03	07:29 18:39	07:39 16:20 10 15:31 (14)	08:41 15:32 14 14:33 (12)
7	04:26 22:16	05:21 21:22	06:27 20:01	07:31 18:37	07:41 16:18 13 15:33 (14)	08:43 15:32 12 14:34 (12)
8	04:27 22:15	05:23 21:19	06:29 19:47	07:33 18:34	07:43 16:16 14 15:33 (14)	08:44 15:31 12 14:34 (12)
9	04:28 22:14	05:26 21:17	06:32 19:55	07:36 18:31	07:46 16:14 16 15:34 (14)	08:46 15:31 10 14:34 (12)
10	04:30 22:12	05:28 21:14	06:34 19:52	07:38 18:28	07:48 16:12 17 15:34 (14)	08:47 15:30 9 14:35 (12)
11	04:31 22:11	05:30 21:12	06:36 19:49	07:40 18:26	07:50 16:10 14 15:32 (14)	08:49 15:29 8 14:35 (12)
12	04:33 22:10	05:32 21:10	06:38 19:47	07:42 18:23	07:53 16:07 12 15:29 (14)	08:50 15:29 7 14:36 (12)
13	04:34 22:09	05:34 21:07	06:40 19:44	07:44 18:20	07:55 16:05 9 15:27 (14)	08:51 15:29 6 14:37 (12)
14	04:36 22:08	05:36 21:05	06:42 19:41	07:47 18:18	07:57 16:03 6 15:25 (14)	08:52 15:29 5 14:38 (12)
15	04:37 22:06	05:38 21:02	06:44 19:38	07:49 18:15 9 17:08 (2)	07:59 16:02 3 15:22 (14)	08:53 15:29 4 14:39 (12)
16	04:39 22:05	05:40 21:00	06:46 19:35	07:51 18:12 21 17:28 (3)	08:02 16:00 10 15:21 (14)	08:54 15:29 4 14:41 (12)
17	04:40 22:03	05:43 20:57	06:48 19:33	07:53 18:10 30 17:30 (3)	08:04 15:58 12 14:45 (4)	08:55 15:29 3 14:41 (12)
18	04:42 22:02	05:45 20:54	06:51 19:30	07:55 18:07 34 17:31 (3)	08:06 15:56 15 14:47 (4)	08:56 15:29 3 14:41 (12)
19	04:44 22:00	05:47 20:52	06:53 19:27	07:58 18:04 37 17:31 (3)	08:08 15:54 17 14:48 (4)	08:57 15:29 3 14:42 (12)
20	04:46 21:58	05:49 20:49	06:55 19:24 3 18:38 (1)	08:00 18:02 36 17:28 (3)	08:10 15:52 18 14:49 (4)	08:58 15:29 2 14:42 (12)
21	04:47 21:57	05:51 20:47	06:57 19:21 10 18:44 (1)	08:02 17:59 35 17:26 (3)	08:13 15:51 20 14:50 (4)	08:58 15:30 2 14:42 (12)
22	04:49 21:55	05:53 20:44	06:59 19:18 13 18:46 (1)	08:04 17:56 32 17:22 (3)	08:15 15:49 20 14:51 (4)	08:59 15:30 2 14:43 (12)
23	04:51 21:53	05:55 20:41	07:01 19:16 13 18:45 (1)	08:07 17:54 29 17:20 (3)	08:17 15:48 21 14:51 (4)	08:59 15:31 2 14:43 (12)
24	04:53 21:51	05:58 20:39	07:03 19:13 11 18:42 (1)	08:09 17:51 26 17:17 (3)	08:19 15:46 21 14:51 (4)	09:00 15:31 3 14:44 (12)
25	04:55 21:49	06:00 20:36	07:05 19:10 9 18:39 (1)	07:11 16:49 24 16:15 (2)	08:21 15:45 23 14:53 (4)	09:00 15:32 3 14:45 (12)
26	04:57 21:47	06:02 20:33	07:08 19:07 6 18:36 (1)	07:14 16:46 22 16:12 (2)	08:23 15:43 23 14:53 (4)	09:00 15:33 3 14:46 (12)
27	04:59 21:45	06:04 20:31	07:10 19:04 3 18:33 (1)	07:16 16:44 18 16:10 (2)	08:25 15:42 23 14:53 (4)	09:01 15:34 4 14:47 (12)
28	05:01 21:43	06:06 20:28	07:12 19:02	07:18 16:41 14 16:06 (2)	08:27 15:41 23 14:54 (4)	09:01 15:34 4 14:48 (12)
29	05:03 21:41	06:08 20:25	07:14 18:59	07:20 16:39 11 16:04 (2)	08:29 15:39 22 14:54 (4)	09:01 15:35 5 14:48 (12)
30	05:05 21:39	06:10 20:23	07:16 18:56	07:23 16:37 7 16:01 (2)	08:31 15:38 22 14:54 (4)	09:01 15:37 6 14:50 (4)
31	05:07 21:37	06:13 20:20		07:25 16:34 2 15:59 (2)		09:00 15:38 6 14:51 (4)
Potential sun hours	538	474	386	321	241	207
Total, worst case			68	387	409	233
Sun reduction			0.46	0.28	0.08	0.06
Oper. time red.			1.00	1.00	1.00	1.00
Wind dir. red.			1.00	1.00	1.00	1.00
Total reduction			0.46	0.28	0.08	0.06
Total, real			31	109	32	14

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Last time (hh:mm) with flicker	(WTG causing flicker last time)
	Minutes with flicker		

Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa
Assumptions for shadow calculations

Shadow receptor: Kristali - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (484)
Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January			February			March			April	May	June
1	09:00		14:40 (12)	08:21		15:43 (14)	07:13			06:48	05:27	04:27
	15:39	13	14:53 (4)	16:40	16	15:59 (14)	17:46			19:55	21:01	22:02
2	09:00		14:40 (12)	08:19		15:45 (14)	07:11			06:45	05:25	04:25
	15:40	14	14:54 (4)	16:42	14	15:59 (14)	17:48			19:57	21:03	22:04
3	09:00		14:42 (12)	08:17		15:46 (14)	07:08			06:42	05:23	04:24
	15:42	14	14:56 (4)	16:44	12	15:58 (14)	17:50			19:59	21:06	22:05
4	08:59		14:42 (12)	08:15		15:48 (14)	07:05			06:39	05:20	04:23
	15:43	16	14:58 (4)	16:47	8	15:56 (14)	17:53			20:01	21:08	22:07
5	08:59		14:42 (12)	08:12			07:03			06:36	05:18	04:22
	15:45	17	14:59 (4)	16:49			17:55			20:04	21:10	22:08
6	08:58		14:43 (4)	08:10			07:00			06:34	05:15	04:21
	15:46	18	15:01 (4)	16:52			17:57			20:06	21:12	22:09
7	08:57		14:43 (4)	08:08			06:57			06:31	05:13	04:20
	15:48	20	15:03 (4)	16:54			17:59			20:08	21:14	22:11
8	08:57		14:43 (4)	08:06			06:54			06:28	05:11	04:19
	15:49	22	15:05 (4)	16:56			18:02			20:10	21:16	22:12
9	08:56		14:44 (4)	08:03		16:22 (2)	06:52			06:25	05:09	04:18
	15:51	22	15:06 (4)	16:59	3	16:25 (2)	18:04			20:12	21:19	22:13
10	08:55		14:44 (4)	08:01		16:20 (2)	06:49			06:23	05:06	04:18
	15:53	23	15:07 (4)	17:01	7	16:27 (2)	18:06			20:15	21:21	22:14
11	08:54		14:44 (4)	07:59		16:19 (2)	06:46			06:20	05:04	04:17
	15:55	23	15:07 (4)	17:03	11	16:30 (2)	18:08			20:17	21:23	22:15
12	08:53		14:45 (4)	07:56		16:17 (2)	06:43			06:17	05:02	04:17
	15:57	22	15:09 (4)	17:06	15	16:32 (2)	18:11			20:19	21:25	22:16
13	08:52		14:45 (4)	07:54		16:17 (2)	06:41			06:14	05:00	04:16
	15:58	22	15:07 (4)	17:08	18	16:35 (2)	18:13			20:21	21:27	22:17
14	08:51		14:46 (4)	07:52		16:16 (2)	06:38			06:12	04:58	04:16
	16:00	22	15:08 (4)	17:11	22	16:38 (2)	18:15			20:24	21:29	22:18
15	08:49		14:46 (4)	07:49		16:15 (2)	06:35			06:09	04:56	04:15
	16:02	22	15:08 (4)	17:13	25	16:40 (2)	18:17			20:26	21:31	22:18
16	08:48		14:47 (4)	07:47		16:15 (2)	06:32		17:46 (1)	06:06	04:53	04:15
	16:04	22	15:09 (4)	17:15	26	16:41 (2)	18:20	4	17:50 (1)	20:28	21:33	22:19
17	08:47		14:47 (4)	07:44		16:15 (2)	06:29		17:46 (1)	06:04	04:51	04:15
	16:06	22	15:09 (4)	17:18	27	16:45 (3)	18:22	7	17:53 (1)	20:30	21:35	22:20
18	08:45		14:48 (4)	07:42		16:16 (2)	06:27		17:46 (1)	06:01	04:49	04:15
	16:08	20	15:08 (4)	17:20	30	16:48 (3)	18:24	9	17:55 (1)	20:32	21:37	22:20
19	08:44		14:48 (4)	07:39		16:15 (2)	06:24		17:45 (1)	05:58	04:48	04:15
	16:10	20	15:08 (4)	17:22	34	16:51 (3)	18:26	12	17:57 (1)	20:35	21:39	22:21
20	08:42		14:50 (4)	07:37		16:15 (2)	06:21		17:46 (1)	05:56	04:46	04:15
	16:13	19	15:09 (4)	17:25	36	16:53 (3)	18:28	13	17:59 (1)	20:37	21:41	22:21
21	08:41		14:51 (4)	07:34		16:16 (2)	06:18		17:46 (1)	05:53	04:44	04:15
	16:15	17	15:08 (4)	17:27	37	16:55 (3)	18:31	13	17:59 (1)	20:39	21:43	22:21
22	08:39		14:52 (4)	07:32		16:17 (2)	06:16		17:47 (1)	05:50	04:42	04:15
	16:17	15	15:07 (4)	17:29	37	16:58 (3)	18:33	9	17:56 (1)	20:41	21:45	22:21
23	08:38		14:53 (4)	07:29		16:18 (2)	06:13			05:48	04:40	04:15
	16:19	14	15:07 (4)	17:32	33	16:57 (3)	18:35			20:43	21:47	22:22
24	08:36		14:55 (4)	07:26		16:19 (2)	06:10			05:45	04:39	04:15
	16:21	10	15:05 (4)	17:34	27	16:55 (3)	18:37			20:46	21:49	22:22
25	08:34		14:59 (4)	07:24		16:22 (2)	06:07			05:43	04:37	04:16
	16:24	6	15:45 (14)	17:36	18	16:53 (3)	18:39			20:48	21:51	22:22
26	08:32		15:42 (14)	07:21			06:04			05:40	04:35	04:16
	16:26	6	15:48 (14)	17:39			18:42			20:50	21:53	22:21
27	08:31		15:41 (14)	07:19			06:02			05:37	04:34	04:17
	16:28	9	15:50 (14)	17:41			18:44			20:52	21:54	22:21
28	08:29		15:42 (14)	07:16			05:59			05:35	04:32	04:17
	16:30	10	15:52 (14)	17:43			18:46			20:55	21:56	22:21
29	08:27		15:42 (14)				06:56			05:32	04:31	04:18
	16:33	13	15:55 (14)				19:48			20:57	21:58	22:21
30	08:25		15:43 (14)				06:53			05:30	04:29	04:19
	16:35	15	15:58 (14)				19:50			20:59	21:59	22:20
31	08:23		15:43 (14)				06:50				04:28	
	16:37	17	16:00 (14)				19:53				22:01	
Potential sun hours	227			262			365			429	515	539
Total, worst case	525			456			67					
Sun reduction	0.11			0.19			0.40					
Oper. time red.	1.00			1.00			1.00					
Wind dir. red.	1.00			1.00			1.00					
Total reduction	0.11			0.19			0.40					
Total, real	57			89			27					

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Flickering_Valka_Siemens_Gamesa

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SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

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0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Kristali - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (484)
Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	July	August	September	October	November	December
1	04:20	05:09	06:15	07:18	07:27	15:50 (2)
	22:20	21:35	20:17	18:53	16:32	6 15:56 (2)
2	04:21	05:11	06:17	07:20	07:30	15:52 (2)
	22:19	21:33	20:14	18:50	16:29	2 15:54 (2)
3	04:21	05:13	06:19	07:23	07:32	15:56 (2)
	22:19	21:31	20:12	18:48	16:27	15:35
4	04:22	05:15	06:21	07:25	07:34	15:38
	22:18	21:28	20:09	18:45	16:25	15:34
5	04:24	05:17	06:23	07:27	07:37	15:38
	22:17	21:26	20:06	18:42	16:23	15:33
6	04:25	05:19	06:25	07:29	07:39	15:21 (14)
	22:16	21:24	20:03	18:39	16:20	2 15:23 (14)
7	04:26	05:21	06:27	07:31	07:41	15:18 (14)
	22:16	21:22	20:01	18:37	16:18	9 15:27 (14)
8	04:27	05:23	06:29	07:33	07:43	15:16 (14)
	22:15	21:19	19:58	18:34	16:16	12 15:28 (14)
9	04:28	05:26	06:32	07:36	07:46	15:15 (14)
	22:14	21:17	19:55	18:31	16:14	15 15:30 (14)
10	04:30	05:28	06:34	07:38	07:48	15:14 (14)
	22:12	21:14	19:52	18:28	16:12	16 15:30 (14)
11	04:31	05:30	06:36	07:40	07:50	15:14 (14)
	22:11	21:12	19:49	18:26	16:10	17 15:31 (14)
12	04:33	05:32	06:38	07:42	07:53	15:13 (14)
	22:10	21:10	19:47	18:23	16:07	16 15:29 (14)
13	04:34	05:34	06:40	07:44	07:55	15:14 (14)
	22:09	21:07	19:44	18:20	16:05	13 15:27 (14)
14	04:36	05:36	06:42	07:47	07:57	15:15 (14)
	22:08	21:05	19:41	18:18	16:03	10 15:25 (14)
15	04:37	05:38	06:44	07:49	07:59	15:14 (14)
	22:06	21:02	19:38	18:15	16:02	8 15:22 (14)
16	04:39	05:40	06:46	07:51	08:02	15:15 (14)
	22:05	21:00	19:35	18:12	7 17:03 (2)	6 15:21 (14)
17	04:40	05:43	06:48	07:53	08:04	14:32 (4)
	22:03	20:57	19:33	18:10	22 17:25 (3)	6 15:18 (14)
18	04:42	05:45	06:51	07:55	08:06	14:29 (4)
	22:02	20:54	19:30	18:07	31 17:28 (3)	10 14:39 (4)
19	04:44	05:47	06:53	07:58	08:08	14:27 (4)
	22:00	20:52	19:27	18:04	35 17:28 (3)	14 14:41 (4)
20	04:46	05:49	06:55	08:00	08:10	14:27 (4)
	21:58	20:49	19:24	18:02	38 17:28 (3)	15 14:42 (4)
21	04:47	05:51	06:57	18:34 (1)	08:02	16:46 (2)
	21:57	20:47	19:21	7 18:41 (1)	17:59	38 17:26 (3)
22	04:49	05:53	06:59	18:32 (1)	08:04	16:45 (2)
	21:55	20:44	19:18	12 18:44 (1)	17:56	35 17:22 (3)
23	04:51	05:55	07:01	18:30 (1)	08:07	16:45 (2)
	21:53	20:41	19:16	15 18:45 (1)	17:54	34 17:20 (3)
24	04:53	05:58	07:03	18:29 (1)	08:09	16:45 (2)
	21:51	20:39	19:13	13 18:42 (1)	17:51	30 17:17 (3)
25	04:55	06:00	07:05	18:29 (1)	07:11	15:45 (2)
	21:49	20:36	19:10	10 18:39 (1)	16:49	28 16:15 (3)
26	04:57	06:02	07:08	18:28 (1)	07:14	15:45 (2)
	21:47	20:33	19:07	8 18:36 (1)	16:46	25 16:10 (2)
27	04:59	06:04	07:10	18:28 (1)	07:16	15:46 (2)
	21:45	20:31	19:04	5 18:33 (1)	16:44	24 16:10 (2)
28	05:01	06:06	07:12	18:28 (1)	07:18	15:45 (2)
	21:43	20:28	19:02	2 18:30 (1)	16:41	21 16:06 (2)
29	05:03	06:08	07:14		07:20	15:47 (2)
	21:41	20:25	18:59		16:39	17 16:04 (2)
30	05:05	06:10	07:16		07:23	15:47 (2)
	21:39	20:23	18:56		16:37	14 16:01 (2)
31	05:07	06:13			07:25	15:49 (2)
	21:37	20:20			16:34	10 15:59 (2)
Potential sun hours	538	474	386	321	241	207
Total, worst case			72	409	386	369
Sun reduction			0.46	0.28	0.08	0.06
Oper. time red.			1.00	1.00	1.00	1.00
Wind dir. red.			1.00	1.00	1.00	1.00
Total reduction			0.46	0.28	0.08	0.06
Total, real			33	116	30	23

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa
Assumptions for shadow calculations

Shadow receptor: Kurmiš i - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (792)
Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:40	08:21 16:40	07:14 17:46	06:48 19:55	05:28 21:02	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:18	07:19 18:54	07:28 16:32	08:33 15:38
2	09:00 15:41	08:19 16:43	07:11 17:48	06:45 19:57	05:26 21:04	04:26 22:04	04:21 22:20	05:11 21:33	06:17 20:15	07:21 18:51	07:30 16:30	08:35 15:37
3	09:00 15:42	08:17 16:45	07:08 17:51	06:42 20:00	05:23 21:06	04:25 22:06	04:22 22:19	05:14 21:31	06:19 20:12	07:23 18:48	07:32 16:28	08:37 15:36
4	08:59 15:44	08:15 16:47	07:06 17:53	06:40 20:02	05:21 21:08	04:24 22:07	04:23 22:18	05:16 21:29	06:21 20:09	07:25 18:45	07:35 16:25	08:38 15:35
5	08:59 15:45	08:13 16:50	07:03 17:55	06:37 20:04	05:18 21:10	04:23 22:08	04:24 22:18	05:18 21:27	06:24 20:07	07:27 18:43	07:37 16:23	08:40 15:34
6	08:58 15:47	08:11 16:52	07:00 17:58	06:34 20:06	05:16 21:12	04:22 22:10	04:25 22:17	05:20 21:24	06:26 20:04	07:29 18:40	07:39 16:21	08:42 15:33
7	08:58 15:48	08:08 16:54	06:58 18:00	06:31 20:08	05:14 21:15	04:21 22:11	04:26 22:16	05:22 21:22	06:28 20:01	07:32 18:37	07:42 16:19	08:43 15:32
8	08:57 15:50	08:06 16:57	06:55 18:02	06:29 20:11	05:11 21:17	04:20 22:12	04:28 22:15	05:24 21:20	06:30 19:58	07:34 18:34	07:44 16:16	08:45 15:32
9	08:56 15:52	08:04 16:59	06:52 18:04	06:26 20:13	05:09 21:19	04:19 22:13	04:29 22:14	05:26 21:17	06:32 19:55	07:36 18:32	07:46 16:14	08:46 15:31
10	08:55 15:53	08:01 17:02	06:49 18:07	06:23 20:15	05:07 21:21	04:18 22:14	04:30 22:13	05:28 21:15	06:34 19:53	07:38 18:29	07:48 16:12	08:48 15:31
11	08:54 15:55	07:59 17:04	06:47 18:09	06:20 20:17	05:05 21:23	04:18 22:15	04:32 22:12	05:30 21:12	06:36 19:50	07:40 18:26	07:51 16:10	08:49 15:30
12	08:53 15:57	07:57 17:06	06:44 18:11	06:18 20:20	05:02 21:25	04:17 22:16	04:33 22:10	05:32 21:10	06:38 19:47	07:43 18:23	07:53 16:08	08:50 15:30
13	08:52 15:59	07:54 17:09	06:41 18:13	06:15 20:22	05:00 21:27	04:17 22:17	04:35 22:09	05:35 21:07	06:40 19:44	07:45 18:21	07:55 16:06	08:51 15:30
14	08:51 16:01	07:52 17:11	06:38 18:16	06:12 20:24	04:58 21:30	04:16 22:18	04:36 22:08	05:37 21:05	06:43 19:41	07:47 18:18	07:58 16:04	08:53 15:29
15	08:50 16:03	07:50 17:13	06:35 18:18	06:09 20:26	04:56 21:32	04:16 22:19	04:38 22:06	05:39 21:02	06:45 19:39	07:49 18:15	08:00 16:02	08:54 15:29
16	08:48 16:05	07:47 17:16	06:33 18:20	06:07 20:28	04:54 21:34	04:16 22:19	04:39 22:05	05:41 21:00	06:47 19:36	07:51 18:13	08:02 16:00	08:55 15:29
17	08:47 16:07	07:45 17:18	06:30 18:22	06:04 20:31	04:52 21:36	04:15 22:20	04:41 22:03	05:43 20:57	06:49 19:33	07:54 18:10	08:04 15:58	08:56 15:29
18	08:46 16:09	07:42 17:21	06:27 18:24	06:01 20:33	04:50 21:38	04:15 22:20	04:43 22:02	05:45 20:55	06:51 19:30	07:56 18:07	08:06 15:57	08:56 15:29
19	08:44 16:11	07:40 17:23	06:24 18:27	05:59 20:35	04:48 21:40	04:15 22:21	04:44 22:00	05:47 20:52	06:53 19:27	07:58 18:05	08:09 15:55	08:57 15:30
20	08:43 16:13	07:37 17:25	06:22 18:29	05:56 20:37	04:46 21:42	04:15 22:21	04:46 21:59	05:50 20:50	06:55 19:24	08:00 18:02	08:11 15:53	08:58 15:30
21	08:41 16:15	07:35 17:28	06:19 18:31	05:53 20:39	04:44 21:44	04:15 22:21	04:48 21:57	05:52 20:47	06:57 19:22	08:03 18:00	08:13 15:51	08:59 15:30
22	08:40 16:17	07:32 17:30	06:16 18:33	05:51 20:42	04:43 21:45	04:15 22:22	04:50 21:55	05:54 20:44	06:59 19:19	08:05 17:57	08:15 15:50	08:59 15:31
23	08:38 16:20	07:29 17:32	06:13 18:35	05:48 20:44	04:41 21:47	04:16 22:22	04:52 21:53	05:56 20:42	07:02 19:16	08:07 17:54	08:17 15:48	09:00 15:31
24	08:36 16:22	07:27 17:35	06:10 18:38	05:46 20:46	04:39 21:49	04:16 22:22	04:54 21:52	05:58 20:39	07:04 19:13	08:09 17:52	08:19 15:47	09:00 15:32
25	08:35 16:24	07:24 17:37	06:08 18:40	05:43 20:48	04:37 21:51	04:16 22:22	04:55 21:50	06:00 20:36	07:06 19:10	07:12 16:49	08:21 15:45	09:00 15:33
26	08:33 16:26	07:22 17:39	06:05 18:42	05:41 20:50	04:36 21:53	04:17 22:22	04:57 21:48	06:02 20:34	07:08 19:08	07:14 16:47	08:23 15:44	09:01 15:33
27	08:31 16:29	07:19 17:41	06:02 18:44	05:38 20:53	04:34 21:55	04:17 22:22	04:59 21:46	06:04 20:31	07:10 19:05	07:16 16:44	08:25 15:42	09:01 15:34
28	08:29 16:31	07:16 17:44	05:59 18:46	05:35 20:55	04:33 21:56	04:18 22:21	05:01 21:44	06:07 20:28	07:12 19:02	07:19 16:42	08:27 15:41	09:01 15:35
29	08:27 16:33		06:56 19:49	05:33 20:57	04:31 21:58	04:19 22:21	05:03 21:42	06:09 20:26	07:14 18:59	07:21 16:39	08:29 15:40	09:01 15:36
30	08:25 16:36		06:54 19:51	05:30 20:59	04:30 22:00	04:19 22:21	05:05 21:40	06:11 20:23	07:16 18:56	07:23 16:37	08:31 15:39	09:01 15:37
31	08:23 16:38		06:51 19:53		04:28 22:01		05:07 21:38	06:13 20:20		07:25 16:35		09:01 15:38
Potential sun hours	227	262	365	429	515	539	538	474	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Karla Skalbes iela 10 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (604)
Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) []

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
0.80 1.82 4.75 6.09 9.67 10.05 8.16 7.72 5.94 2.93 0.63 0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:27 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
2	09:00 15:40	08:19 16:42	07:11 17:48	06:45 19:57	05:25 21:04	04:25 22:04	04:20 22:20	05:11 21:33	06:17 20:15	07:21 18:51	07:30 16:29	08:35 15:36
3	09:00 15:42	08:17 16:44	07:08 17:50	06:42 19:59	05:23 21:06	04:24 22:06	04:21 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:37 15:35
4	08:59 15:43	08:15 16:47	07:05 17:53	06:39 20:02	05:20 21:08	04:23 22:07	04:22 22:18	05:15 21:29	06:21 20:09	07:25 18:45	07:34 16:25	08:38 15:34
5	08:59 15:45	08:13 16:49	07:03 17:55	06:36 20:04	05:18 21:10	04:22 22:09	04:23 22:18	05:17 21:26	06:23 20:06	07:27 18:42	07:37 16:23	08:40 15:33
6	08:58 15:46	08:10 16:52	07:00 17:57	06:34 20:06	05:15 21:12	04:21 22:10	04:25 22:17	05:19 21:24	06:25 20:04	07:29 18:39	07:39 16:20	08:42 15:32
7	08:58 15:48	08:08 16:54	06:57 17:59	06:31 20:08	05:13 21:15	04:20 22:11	04:26 22:16	05:21 21:22	06:27 20:01	07:31 18:37	07:41 16:18	08:43 15:32
8	08:57 15:49	08:06 16:56	06:55 18:02	06:28 20:10	05:11 21:17	04:19 22:12	04:27 22:15	05:23 21:19	06:30 19:58	07:34 18:34	07:44 16:16	08:45 15:31
9	08:56 15:51	08:04 16:59	06:52 18:04	06:25 20:13	05:09 21:19	04:18 22:13	04:28 22:14	05:26 21:17	06:32 19:55	07:36 18:31	07:46 16:14	08:46 15:30
10	08:55 15:53	08:01 17:01	06:49 18:06	06:23 20:15	05:06 21:21	04:18 22:14	04:30 22:13	05:28 21:15	06:34 19:52	07:38 18:28	07:48 16:12	08:48 15:30
11	08:54 15:55	07:59 17:03	06:46 18:08	06:20 20:17	05:04 21:23	04:17 22:15	04:31 22:12	05:30 21:12	06:36 19:50	07:40 18:26	07:51 16:10	08:49 15:30
12	08:53 15:56	07:57 17:06	06:44 18:11	06:17 20:19	05:02 21:25	04:16 22:16	04:33 22:10	05:32 21:10	06:38 19:47	07:42 18:23	07:53 16:07	08:50 15:29
13	08:52 15:58	07:54 17:08	06:41 18:13	06:14 20:22	05:00 21:27	04:16 22:17	04:34 22:09	05:34 21:07	06:40 19:44	07:45 18:20	07:55 16:05	08:51 15:29
14	08:51 16:00	07:52 17:11	06:38 18:15	06:12 20:24	04:58 21:29	04:16 22:18	04:36 22:08	05:36 21:05	06:42 19:41	07:47 18:18	07:57 16:03	08:53 15:29
15	08:50 16:02	07:49 17:13	06:35 18:17	06:09 20:26	04:56 21:32	04:15 22:19	04:37 22:06	05:38 21:02	06:44 19:38	07:49 18:15	08:00 16:02	08:54 15:29
16	08:48 16:04	07:47 17:15	06:32 18:20	06:06 20:28	04:53 21:34	04:15 22:19	04:39 22:05	05:41 21:00	06:46 19:35	07:51 18:12	08:02 16:00	08:55 15:29
17	08:47 16:06	07:44 17:18	06:30 18:22	06:04 20:30	04:51 21:36	04:15 22:20	04:40 22:03	05:43 20:57	06:49 19:33	07:53 18:10	08:04 15:58	08:56 15:29
18	08:46 16:08	07:42 17:20	06:27 18:24	06:01 20:33	04:49 21:38	04:15 22:20	04:42 22:02	05:45 20:55	06:51 19:30	07:56 18:07	08:06 15:56	08:56 15:29
19	08:44 16:10	07:39 17:22	06:24 18:26	05:58 20:35	04:48 21:40	04:15 22:21	04:44 22:00	05:47 20:52	06:53 19:27	07:58 18:04	08:09 15:54	08:57 15:29
20	08:43 16:13	07:37 17:25	06:21 18:29	05:56 20:37	04:46 21:42	04:15 22:21	04:46 21:59	05:49 20:50	06:55 19:24	08:00 18:02	08:11 15:52	08:58 15:29
21	08:41 16:15	07:34 17:27	06:18 18:31	05:53 20:39	04:44 21:44	04:15 22:22	04:47 21:57	05:51 20:47	06:57 19:21	08:02 17:59	08:13 15:51	08:59 15:30
22	08:40 16:17	07:32 17:29	06:16 18:33	05:50 20:41	04:42 21:45	04:15 22:22	04:49 21:55	05:53 20:44	06:59 19:19	08:05 17:57	08:15 15:49	08:59 15:30
23	08:38 16:19	07:29 17:32	06:13 18:35	05:48 20:44	04:40 21:47	04:15 22:22	04:51 21:53	05:55 20:42	07:01 19:16	08:07 17:54	08:17 15:48	09:00 15:31
24	08:36 16:21	07:27 17:34	06:10 18:37	05:45 20:46	04:38 21:49	04:15 22:22	04:53 21:52	05:58 20:39	07:03 19:13	08:09 17:51	08:19 15:46	09:00 15:31
25	08:34 16:24	07:24 17:36	06:07 18:40	05:43 20:48	04:37 21:51	04:16 22:22	04:55 21:50	06:00 20:36	07:06 19:10	07:11 16:49	08:21 15:45	09:00 15:32
26	08:33 16:26	07:21 17:39	06:04 18:42	05:40 20:50	04:35 21:53	04:16 22:22	04:57 21:48	06:02 20:34	07:08 19:07	07:14 16:46	08:23 15:43	09:01 15:33
27	08:31 16:28	07:19 17:41	06:02 18:44	05:38 20:53	04:34 21:55	04:17 22:22	04:59 21:46	06:04 20:31	07:10 19:05	07:16 16:44	08:25 15:42	09:01 15:34
28	08:29 16:30	07:16 17:43	05:59 18:46	05:35 20:55	04:32 21:56	04:17 22:21	05:01 21:44	06:06 20:28	07:12 19:02	07:18 16:41	08:27 15:41	09:01 15:34
29	08:27 16:33		06:56 19:48	05:32 20:57	04:31 21:58	04:18 22:21	05:03 21:42	06:08 20:26	07:14 18:59	07:21 16:39	08:29 15:39	09:01 15:35
30	08:25 16:35		06:53 19:51	05:30 20:59	04:29 22:00	04:19 22:21	05:05 21:40	06:10 20:23	07:16 18:56	07:23 16:37	08:31 15:38	09:01 15:36
31	08:23 16:37		06:50 19:53		04:28 22:01		05:07 21:38	06:13 20:20		07:25 16:34		09:01 15:38
Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Last time (hh:mm) with flicker	(WTG causing flicker last time)
	Minutes with flicker		

Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Karla Skalbes iela 11 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (642)

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:27 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
2	09:00 15:40	08:19 16:42	07:11 17:48	06:45 19:57	05:25 21:04	04:25 22:04	04:20 22:20	05:11 21:33	06:17 20:15	07:21 18:51	07:30 16:29	08:35 15:36
3	09:00 15:42	08:17 16:44	07:08 17:50	06:42 19:59	05:23 21:06	04:24 22:06	04:21 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:37 15:35
4	08:59 15:43	08:15 16:47	07:05 17:53	06:39 20:02	05:20 21:08	04:23 22:07	04:22 22:18	05:15 21:29	06:21 20:09	07:25 18:45	07:34 16:25	08:38 15:34
5	08:59 15:45	08:13 16:49	07:03 17:55	06:36 20:04	05:18 21:10	04:22 22:09	04:23 22:18	05:17 21:26	06:23 20:06	07:27 18:42	07:37 16:23	08:40 15:33
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31	08:23 16:37		05:50 19:53		04:28 22:01		05:07 21:38	06:13 20:20		07:25 16:34		09:01 15:38
Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Karla Skalbes iela 15 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (606)
 Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) []

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
 0.80 1.82 4.75 6.09 9.67 10.05 8.16 7.72 5.94 2.93 0.63 0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:27 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
2	09:00 15:40	08:19 16:42	07:11 17:48	06:45 19:57	05:25 21:04	04:25 22:04	04:20 22:20	05:11 21:33	06:17 20:15	07:21 18:51	07:30 16:29	08:35 15:36
3	09:00 15:42	08:17 16:44	07:08 17:50	06:42 19:59	05:23 21:06	04:24 22:06	04:21 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:37 15:35
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5	08:59 15:45	08:13 16:49	07:03 17:55	06:36 20:04	05:18 21:10	04:22 22:09	04:23 22:18	05:17 21:26	06:23 20:06	07:27 18:42	07:37 16:23	08:40 15:33
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31	08:23 16:37		05:50 19:53		04:28 22:01		05:07 21:38	06:13 20:20		07:25 16:34		09:01 15:38
Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Last time (hh:mm) with flicker	(WTG causing flicker last time)
	Minutes with flicker		

Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Karla Skalbes iela 17 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (611)
 Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:27 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
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21	08:41 16:15	07:34 17:27	06:18 18:31	05:53 20:39	04:44 21:44	04:15 22:22	04:47 21:57	05:51 20:47	06:57 19:21	08:02 17:59	08:13 15:51	08:59 15:30
22	08:40 16:17	07:32 17:29	06:16 18:33	05:50 20:41	04:42 21:45	04:15 22:22	04:49 21:55	05:53 20:44	06:59 19:19	08:05 17:57	08:15 15:49	08:59 15:30
23	08:38 16:19	07:29 17:32	06:13 18:35	05:48 20:44	04:40 21:47	04:15 22:22	04:51 21:53	05:55 20:42	07:01 19:16	08:07 17:54	08:17 15:48	09:00 15:31
24	08:36 16:21	07:27 17:34	06:10 18:37	05:45 20:46	04:38 21:49	04:15 22:22	04:53 21:52	05:58 20:39	07:03 19:13	08:09 17:51	08:19 15:46	09:00 15:31
25	08:34 16:24	07:24 17:36	06:07 18:40	05:43 20:48	04:37 21:51	04:16 22:22	04:55 21:50	06:00 20:36	07:06 19:10	07:11 16:49	08:21 15:45	09:00 15:32
26	08:33 16:26	07:21 17:39	06:04 18:42	05:40 20:50	04:35 21:53	04:16 22:22	04:57 21:48	06:02 20:34	07:08 19:07	07:14 16:46	08:23 15:43	09:01 15:33
27	08:31 16:28	07:19 17:41	06:02 18:44	05:38 20:53	04:34 21:55	04:17 22:22	04:59 21:46	06:04 20:31	07:10 19:05	07:16 16:44	08:25 15:42	09:01 15:34
28	08:29 16:30	07:16 17:43	05:59 18:46	05:35 20:55	04:32 21:56	04:17 22:21	05:01 21:44	06:06 20:28	07:12 19:02	07:18 16:41	08:27 15:41	09:01 15:34
29	08:27 16:33		05:56 19:48	05:32 20:57	04:31 21:58	04:18 22:21	05:03 21:42	06:08 20:26	07:14 18:59	07:21 16:39	08:29 15:39	09:01 15:35
30	08:25 16:35		05:53 19:51	05:30 20:59	04:29 22:00	04:19 22:21	05:05 21:40	06:10 20:23	07:16 18:56	07:23 16:37	08:31 15:38	09:01 15:36
31	08:23 16:37		05:50 19:53		04:28 22:01		05:07 21:38	06:13 20:20		07:25 16:34		09:01 15:38
Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Karla Skalbes iela 19 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (631)
 Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:28 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
2	09:00 15:40	08:19 16:42	07:11 17:48	06:45 19:57	05:25 21:04	04:25 22:04	04:20 22:20	05:11 21:33	06:17 20:15	07:21 18:51	07:30 16:29	08:35 15:36
3	09:00 15:42	08:17 16:44	07:08 17:50	06:42 19:59	05:23 21:06	04:24 22:06	04:21 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:37 15:35
4	08:59 15:43	08:15 16:47	07:05 17:53	06:39 20:02	05:20 21:08	04:23 22:07	04:22 22:18	05:15 21:29	06:21 20:09	07:25 18:45	07:34 16:25	08:38 15:34
5	08:59 15:45	08:13 16:49	07:03 17:55	06:36 20:04	05:18 21:10	04:22 22:09	04:23 22:18	05:17 21:26	06:23 20:06	07:27 18:42	07:37 16:23	08:40 15:33
6	08:58 15:46	08:10 16:52	07:00 17:57	06:34 20:06	05:15 21:12	04:21 22:10	04:25 22:17	05:19 21:24	06:25 20:04	07:29 18:39	07:39 16:20	08:42 15:32
7	08:58 15:48	08:08 16:54	06:57 17:59	06:31 20:08	05:13 21:15	04:20 22:11	04:26 22:16	05:21 21:22	06:27 20:01	07:31 18:37	07:41 16:18	08:43 15:32
8	08:57 15:49	08:06 16:56	06:55 18:02	06:28 20:10	05:11 21:17	04:19 22:12	04:27 22:15	05:23 21:19	06:30 19:58	07:34 18:34	07:44 16:16	08:45 15:31
9	08:56 15:51	08:04 16:59	06:52 18:04	06:25 20:13	05:09 21:19	04:18 22:13	04:28 22:14	05:26 21:17	06:32 19:55	07:36 18:31	07:46 16:14	08:46 15:30
10	08:55 15:53	08:01 17:01	06:49 18:06	06:23 20:15	05:06 21:21	04:18 22:14	04:30 22:13	05:28 21:15	06:34 19:52	07:38 18:28	07:48 16:12	08:48 15:30
11	08:54 15:55	07:59 17:03	06:46 18:08	06:20 20:17	05:04 21:23	04:17 22:15	04:31 22:12	05:30 21:12	06:36 19:50	07:40 18:26	07:51 16:10	08:49 15:30
12	08:53 15:56	07:57 17:06	06:44 18:11	06:17 20:19	05:02 21:25	04:16 22:16	04:33 22:10	05:32 21:10	06:38 19:47	07:42 18:23	07:53 16:07	08:50 15:29
13	08:52 15:58	07:54 17:08	06:41 18:13	06:14 20:22	05:00 21:27	04:16 22:17	04:34 22:09	05:34 21:07	06:40 19:44	07:44 18:20	07:55 16:05	08:51 15:29
14	08:51 16:00	07:52 17:11	06:38 18:15	06:12 20:24	04:58 21:29	04:16 22:18	04:36 22:08	05:36 21:05	06:42 19:41	07:47 18:18	07:57 16:03	08:53 15:29
15	08:50 16:02	07:49 17:13	06:35 18:17	06:09 20:26	04:56 21:32	04:15 22:19	04:37 22:06	05:38 21:02	06:44 19:38	07:49 18:15	08:00 16:02	08:54 15:29
16	08:48 16:04	07:47 17:15	06:32 18:20	06:06 20:28	04:53 21:34	04:15 22:19	04:39 22:05	05:41 21:00	06:46 19:35	07:51 18:12	08:02 16:00	08:55 15:29
17	08:47 16:06	07:44 17:18	06:30 18:22	06:04 20:30	04:51 21:36	04:15 22:20	04:40 22:03	05:43 20:57	06:49 19:33	07:53 18:10	08:04 15:58	08:56 15:29
18	08:46 16:08	07:42 17:20	06:27 18:24	06:01 20:33	04:49 21:38	04:15 22:20	04:42 22:02	05:45 20:55	06:51 19:30	07:56 18:07	08:06 15:56	08:56 15:29
19	08:44 16:10	07:39 17:22	06:24 18:26	05:58 20:35	04:48 21:40	04:15 22:21	04:44 22:00	05:47 20:52	06:53 19:27	07:58 18:04	08:09 15:54	08:57 15:29
20	08:43 16:13	07:37 17:25	06:21 18:29	05:56 20:37	04:46 21:42	04:15 22:21	04:46 21:59	05:49 20:50	06:55 19:24	08:00 18:02	08:11 15:52	08:58 15:29
21	08:41 16:15	07:34 17:27	06:18 18:31	05:53 20:39	04:44 21:44	04:15 22:22	04:47 21:57	05:51 20:47	06:57 19:21	08:02 17:59	08:13 15:51	08:59 15:30
22	08:40 16:17	07:32 17:29	06:16 18:33	05:50 20:41	04:42 21:45	04:15 22:22	04:49 21:55	05:53 20:44	06:59 19:19	08:05 17:57	08:15 15:49	08:59 15:30
23	08:38 16:19	07:29 17:32	06:13 18:35	05:48 20:44	04:40 21:47	04:15 22:22	04:51 21:53	05:55 20:42	07:01 19:16	08:07 17:54	08:17 15:48	09:00 15:31
24	08:36 16:21	07:27 17:34	06:10 18:37	05:45 20:46	04:38 21:49	04:15 22:22	04:53 21:52	05:58 20:39	07:03 19:13	08:09 17:51	08:19 15:46	09:00 15:31
25	08:34 16:24	07:24 17:36	06:07 18:40	05:43 20:48	04:37 21:51	04:16 22:22	04:55 21:50	06:00 20:36	07:06 19:10	07:11 16:49	08:21 15:45	09:00 15:32
26	08:33 16:26	07:21 17:39	06:04 18:42	05:40 20:50	04:35 21:53	04:16 22:22	04:57 21:48	06:02 20:34	07:08 19:07	07:14 16:46	08:23 15:43	09:01 15:33
27	08:31 16:28	07:19 17:41	06:02 18:44	05:38 20:53	04:34 21:55	04:17 22:22	04:59 21:46	06:04 20:31	07:10 19:05	07:16 16:44	08:25 15:42	09:01 15:34
28	08:29 16:30	07:16 17:43	05:59 18:46	05:35 20:55	04:32 21:56	04:17 22:21	05:01 21:44	06:06 20:28	07:12 19:02	07:18 16:41	08:27 15:41	09:01 15:34
29	08:27 16:33		05:56 19:48	05:32 20:57	04:31 21:58	04:18 22:21	05:03 21:42	06:08 20:26	07:14 18:59	07:21 16:39	08:29 15:39	09:01 15:35
30	08:25 16:35		05:53 19:51	05:30 20:59	04:29 22:00	04:19 22:21	05:05 21:40	06:10 20:23	07:16 18:56	07:23 16:37	08:31 15:38	09:01 15:36
31	08:23 16:37		05:50 19:53		04:28 22:01		05:07 21:38	06:13 20:20		07:25 16:34		09:01 15:38
Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa
Assumptions for shadow calculationsShadow receptor: Lati - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (492)
Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running
with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:00	08:21	15:52 (4)	07:13	17:05 (2)	06:47	05:27	04:27	04:20	05:09	06:15	07:18
2	15:39	16:40	11	16:03 (4)	17:46	11	17:16 (2)	19:55	21:01	22:02	22:20	21:35
3	09:00	08:19	15:52 (4)	07:11	17:04 (2)	06:45	05:25	04:25	04:21	05:11	06:17	07:20
4	15:40	16:42	14	16:06 (4)	17:48	14	17:18 (2)	19:57	21:03	22:04	22:19	21:33
5	09:00	08:17	15:51 (4)	07:08	17:03 (2)	06:42	05:23	04:24	04:21	05:13	06:19	07:22
6	15:42	16:44	17	16:08 (4)	17:50	17	17:20 (2)	19:59	21:06	22:05	22:19	21:31
7	08:59	08:15	15:51 (4)	07:05	17:03 (2)	06:39	05:20	04:23	04:22	05:15	06:21	07:25
8	15:43	16:47	20	16:11 (4)	17:52	19	17:22 (2)	20:01	21:08	22:07	22:18	21:28
9	08:59	08:12	15:52 (4)	07:02	17:03 (2)	06:36	05:18	04:22	04:24	05:17	06:23	07:27
10	15:45	16:49	19	16:11 (4)	17:55	19	17:22 (2)	20:04	21:10	22:08	22:17	21:26
11	08:58	08:10	15:52 (4)	07:00	17:04 (2)	06:34	05:15	04:21	04:25	05:19	06:25	07:29
12	15:46	16:52	19	16:11 (4)	17:57	18	17:22 (2)	20:06	21:12	22:09	22:16	21:24
13	08:57	08:08	15:53 (4)	06:57	17:04 (2)	06:31	05:13	04:20	04:26	05:21	06:27	07:31
14	15:48	16:54	18	16:11 (4)	17:59	17	17:21 (2)	20:08	21:14	22:11	22:16	21:22
15	08:56	08:06	15:53 (4)	06:54	17:05 (2)	06:28	05:11	04:19	04:27	05:23	06:29	07:33
16	15:49	16:56	17	16:10 (4)	18:02	15	17:20 (2)	20:10	21:16	22:12	22:15	21:19
17	08:56	08:03	15:55 (4)	06:52	17:06 (2)	06:25	05:09	04:18	04:28	05:26	06:32	07:36
18	15:51	16:59	14	16:09 (4)	18:04	12	17:18 (2)	20:12	21:19	22:13	22:14	21:17
19	08:55	08:01	15:56 (4)	06:49	17:09 (2)	06:23	05:06	04:18	04:30	05:28	06:34	07:38
20	15:53	17:01	11	16:07 (4)	18:06	5	17:14 (2)	20:15	21:21	22:14	22:12	21:14
21	08:54	07:59	15:59 (4)	06:46	17:08	06:20	05:04	04:17	04:31	05:30	06:36	07:40
22	15:55	17:03	6	16:05 (4)	18:08	20:17	21:23	22:15	22:11	21:12	19:49	18:26
23	08:53	07:56	06:43	18:11	06:17	05:02	04:17	04:33	05:32	06:38	07:42	17:37 (2)
24	15:56	17:06	06:41	18:13	20:19	21:25	22:16	22:10	21:10	19:47	18:23	13
25	08:52	07:54	06:41	18:13	06:14	05:00	04:16	04:34	05:34	06:40	07:44	17:38 (2)
26	15:58	17:08	06:38	18:15	20:21	21:27	22:17	22:09	21:07	19:44	18:20	10
27	08:51	07:52	06:38	18:15	06:12	04:58	04:16	04:36	05:36	06:42	07:46	17:39 (2)
28	16:00	17:11	06:35	18:17	20:23	21:29	22:18	22:07	21:05	19:41	18:17	6
29	08:49	07:49	06:35	18:17	06:09	04:56	04:15	04:37	05:38	06:44	07:49	17:40 (2)
30	16:02	17:13	06:32	18:17	20:26	21:31	22:18	22:06	21:02	19:38	18:15	1
31	08:48	07:47	06:32	18:17	06:06	04:53	04:15	04:39	05:40	06:46	07:51	18:02
32	16:04	17:15	06:29	18:20	20:28	21:33	22:19	22:05	21:00	19:35	18:12	16:00
33	08:47	07:44	06:29	18:22	06:04	04:51	04:15	04:40	05:43	06:48	07:53	18:04
34	16:06	17:18	06:27	18:24	20:30	21:35	22:20	22:03	20:57	19:32	18:10	15:58
35	08:45	07:42	06:27	18:24	06:01	04:49	04:15	04:42	05:45	06:51	07:55	18:06
36	16:08	17:20	06:24	18:26	20:32	21:37	22:20	22:02	20:54	19:30	18:07	15:56
37	08:44	07:39	06:24	18:26	05:58	04:48	04:15	04:44	05:47	06:53	07:58	18:08
38	16:10	17:22	06:21	18:28	20:35	21:39	22:20	22:00	20:52	19:27	18:04	15:54
39	08:42	07:37	06:21	18:28	05:56	04:46	04:15	04:46	05:49	06:55	08:00	18:10
40	16:13	17:25	06:18	18:31	20:37	21:41	22:21	21:58	20:49	19:24	18:02	15:52
41	08:41	07:34	06:18	18:31	05:53	04:44	04:15	04:47	05:51	06:57	08:02	18:13
42	16:15	17:27	06:15	18:33	20:39	21:43	22:21	21:57	20:47	19:21	17:59	15:51
43	08:39	07:32	06:15	18:33	05:50	04:42	04:15	04:49	05:53	06:59	08:04	18:15
44	16:17	17:29	06:13	18:35	20:41	21:45	22:21	21:55	20:44	19:18	17:56	15:49
45	08:38	07:29	06:13	18:35	05:48	04:40	04:15	04:51	05:55	07:01	08:07	18:17
46	16:19	17:32	06:10	18:37	20:43	21:47	22:21	21:53	20:41	19:16	17:54	15:48
47	08:36	07:26	06:10	18:37	05:45	04:38	04:15	04:53	05:58	07:03	08:09	18:19
48	16:21	17:34	06:07	18:39	20:46	21:49	22:22	21:51	20:39	19:13	17:51	15:46
49	08:34	07:24	06:07	18:39	05:43	04:37	04:16	04:55	06:00	07:05	07:11	18:21
50	16:24	17:36	06:04	18:42	20:48	21:51	22:22	21:49	20:36	19:10	17:49	15:45
51	08:32	07:21	06:04	18:42	05:40	04:35	04:16	04:57	06:02	07:07	07:14	18:23
52	16:26	17:39	06:01	18:44	20:50	21:52	22:21	21:47	20:33	19:07	17:46	15:43
53	08:31	07:19	17:07 (2)	06:01	05:37	04:34	04:17	04:59	06:04	07:10	07:16	18:25
54	16:28	17:41	3	17:10 (2)	20:52	21:54	22:21	21:45	20:31	19:04	17:44	15:42
55	08:29	07:16	17:05 (2)	05:59	05:35	04:32	04:17	05:01	06:06	07:12	07:18	18:27
56	16:30	17:43	8	17:13 (2)	20:54	21:56	22:21	21:43	20:28	19:02	17:41	15:41
57	08:27	15:54 (4)	06:56	19:48	05:32	04:31	04:18	05:03	06:08	07:14	07:20	18:29
58	16:33	1	15:55 (4)	06:53	20:57	21:58	22:21	21:41	20:25	18:59	16:39	15:39
59	08:25	15:53 (4)	06:50	19:50	05:30	04:29	04:19	05:05	06:10	07:16	07:23	18:31
60	16:35	5	15:58 (4)	06:50	20:59	21:59	22:20	21:39	20:23	18:56	16:37	15:38
61	08:23	15:52 (4)	06:50	19:53	04:28	04:28	05:07	06:12	07:17	07:25	15:28 (4)	15:36 (4)
62	16:37	8	16:00 (4)	06:47	22:01	21:57	22:20	21:37	20:20	16:34	8	241
Potential sun hours	227	262	365	429	515	539	538	474	386	321	169	176
Total, worst case	14	177	147	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40
Sun reduction	0.11	0.19	0.40	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Oper. time red.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Wind dir. red.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Total reduction	0.11	0.19	0.40	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Total, real	2	34	59	429	515	539	538	474	386	321	48	14

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa
Assumptions for shadow calculations

Shadow receptor: Latini - Shadow Receptor: 1.0×1.0 Azimuth: 3.1° Slope: 90.0° (475)
Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January		February		March		April	May	June
1	09:00		14:29 (4)	08:21	15:38 (14)	07:13	06:48	05:27	04:27
	15:39	22	14:51 (4)	16:40	15:49 (14)	17:46	19:55	21:01	22:02
2	09:00		14:29 (4)	08:19	15:41 (14)	07:11	06:45	05:25	04:25
	15:40	22	14:51 (4)	16:42	15:47 (14)	17:48	19:57	21:03	22:04
3	09:00		14:30 (4)	08:17		07:08	06:42	05:23	04:24
	15:42	22	14:52 (4)	16:44		17:50	19:59	21:06	22:05
4	08:59		14:30 (4)	08:15		07:05	06:39	05:20	04:23
	15:43	23	14:53 (4)	16:47		17:53	20:01	21:08	22:07
5	08:59		14:30 (4)	08:12	16:13 (2)	07:03	06:36	05:18	04:22
	15:45	23	14:53 (4)	16:49	16:14 (2)	17:55	20:04	21:10	22:08
6	08:58		14:30 (4)	08:10	16:10 (2)	07:00	06:34	05:15	04:21
	15:46	23	14:53 (4)	16:52	16:16 (2)	17:57	20:06	21:12	22:09
7	08:57		14:31 (4)	08:08	16:08 (2)	06:57	06:31	05:13	04:20
	15:48	23	14:54 (4)	16:54	16:19 (2)	17:59	20:08	21:14	22:11
8	08:57		14:31 (4)	08:06	16:07 (2)	06:54	06:28	05:11	04:19
	15:49	23	14:54 (4)	17:06	16:22 (2)	18:02	20:10	21:16	22:12
9	08:56		14:32 (4)	08:03	16:06 (2)	06:52	06:25	05:09	04:18
	15:51	23	14:55 (4)	16:59	16:25 (2)	18:04	20:13	21:19	22:13
10	08:55		14:33 (4)	08:01	16:05 (2)	06:49	06:23	05:06	04:18
	15:53	22	14:55 (4)	17:01	16:27 (2)	18:06	20:15	21:21	22:14
11	08:54		14:33 (4)	07:59	16:05 (2)	06:46	06:20	05:04	04:17
	15:55	22	14:55 (4)	17:03	16:30 (2)	18:08	20:17	21:23	22:15
12	08:53		14:33 (4)	07:56	16:04 (2)	06:43	06:17	05:02	04:17
	15:57	23	14:56 (4)	17:06	16:30 (2)	18:11	20:19	21:25	22:16
13	08:52		14:34 (4)	07:54	16:05 (2)	06:41	06:14	05:00	04:16
	15:58	21	14:55 (4)	17:08	16:31 (2)	18:13	20:21	21:27	22:17
14	08:51		14:35 (4)	07:52	16:04 (2)	06:38	06:12	04:58	04:16
	16:00	21	14:56 (4)	17:11	16:38 (3)	18:15	2	17:46 (1)	20:24
15	08:49		14:35 (4)	07:49	16:04 (2)	06:35	17:43 (1)	06:09	04:56
	16:02	20	14:55 (4)	17:13	16:40 (3)	18:17	5	17:48 (1)	20:26
16	08:48		14:37 (4)	07:47	16:05 (2)	06:32	17:42 (1)	06:06	04:53
	16:04	19	14:56 (4)	17:15	16:43 (3)	18:20	8	17:50 (1)	20:28
17	08:47		14:37 (4)	07:44	16:05 (2)	06:29	17:42 (1)	06:04	04:51
	16:06	18	14:55 (4)	17:18	16:45 (3)	18:22	11	17:53 (1)	20:30
18	08:45		14:38 (4)	07:42	16:06 (2)	06:27	17:42 (1)	06:01	04:50
	16:08	17	14:55 (4)	17:20	16:48 (3)	18:24	13	17:55 (1)	20:32
19	08:44		14:39 (4)	07:39	16:06 (2)	06:24	17:42 (1)	05:58	04:48
	16:10	15	14:54 (4)	17:22	16:51 (3)	18:26	15	17:57 (1)	20:35
20	08:42		14:42 (4)	07:37	16:07 (2)	06:21	17:43 (1)	05:56	04:46
	16:13	12	14:54 (4)	17:25	16:52 (3)	18:28	13	17:56 (1)	20:37
21	08:41		14:44 (4)	07:34	16:08 (2)	06:18	17:44 (1)	05:53	04:44
	16:15	10	15:35 (14)	17:27	16:51 (3)	18:31	10	17:54 (1)	20:39
22	08:39		15:33 (14)	07:32	16:10 (2)	06:16	17:46 (1)	05:50	04:42
	16:17	4	15:37 (14)	17:29	16:50 (3)	18:33	4	17:50 (1)	20:41
23	08:38		15:33 (14)	07:29	16:13 (2)	06:13		05:48	04:40
	16:19	7	15:40 (14)	17:32	16:48 (3)	18:35		20:43	21:47
24	08:36		15:33 (14)	07:26		06:10		05:45	04:39
	16:21	9	15:42 (14)	17:34		18:37		20:46	21:49
25	08:34		15:33 (14)	07:24		06:07		05:43	04:37
	16:24	12	15:45 (14)	17:36		18:39		20:48	21:51
26	08:32		15:34 (14)	07:21		06:04		05:40	04:35
	16:26	14	15:48 (14)	17:39		18:42		20:50	21:53
27	08:31		15:33 (14)	07:19		06:02		05:37	04:34
	16:28	17	15:50 (14)	17:41		18:44		20:52	21:54
28	08:29		15:34 (14)	07:16		05:59		05:35	04:32
	16:30	17	15:51 (14)	17:43		18:46		20:55	21:56
29	08:27		15:35 (14)			06:56		05:32	04:31
	16:33	16	15:51 (14)			19:48		20:57	21:58
30	08:25		15:36 (14)			06:53		05:30	04:29
	16:35	15	15:51 (14)			19:50		20:59	21:59
31	08:23		15:37 (14)			06:50			04:28
	16:37	14	15:51 (14)			19:53			22:01
Potential sun hours	227		262			365	429	515	539
Total, worst case	549		482			81			
Sun reduction	0.11		0.19			0.40			
Oper. time red.	1.00		1.00			1.00			
Wind dir. red.	1.00		1.00			1.00			
Total reduction	0.11		0.19			0.40			
Total, real	60		94			33			

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Latini - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (475)
Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) []

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
0.80 1.82 4.75 6.09 9.67 10.05 8.16 7.72 5.94 2.93 0.63 0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	July	August	September	October	November	December
1	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:27 16:32	08:33 15:35 (2)
2	04:21 22:19	05:11 21:33	06:17 20:14	07:20 18:50	07:30 16:29	08:35 15:36 (2)
3	04:21 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:36 15:37 (2)
4	04:22 22:18	05:15 21:28	06:21 20:09	07:25 18:45	07:34 16:25	08:38 15:38 (2)
5	04:24 22:17	05:17 21:26	06:23 20:06	07:27 18:42	07:37 16:23	08:40 15:40 (2)
6	04:25 22:16	05:19 21:24	06:25 20:03	07:29 18:39	07:39 16:20	08:41 15:43 (2)
7	04:26 22:16	05:21 21:22	06:27 20:01	07:31 18:37	07:41 16:18	08:43 15:44 (2)
8	04:27 22:15	05:23 21:19	06:29 19:58	07:33 18:34	07:43 16:16	08:44 15:31
9	04:28 22:14	05:26 21:17	06:32 19:55	07:36 18:31	07:46 16:14	08:46 15:11 (14)
10	04:30 22:12	05:28 21:14	06:34 19:52	07:38 18:28	07:48 16:12	08:47 15:08 (14)
11	04:31 22:11	05:30 21:12	06:36 19:49	07:40 18:26	07:50 16:10	08:49 15:08 (14)
12	04:33 22:10	05:32 21:10	06:38 19:47	07:42 18:23	07:53 16:07	08:50 15:07 (14)
13	04:34 22:09	05:34 21:07	06:40 19:44	07:44 18:20	07:55 16:05	08:51 15:23 (14)
14	04:36 22:08	05:36 21:05	06:42 19:41	07:47 18:18	07:57 16:03	08:52 15:07 (14)
15	04:37 22:06	05:38 21:02	06:44 19:38	07:49 18:15	07:59 16:02	08:53 15:24 (14)
16	04:39 22:05	05:40 21:00	06:46 19:35	07:51 18:12	08:02 16:00	08:54 15:06 (14)
17	04:40 22:03	05:43 20:57	06:48 19:33	07:53 18:10	08:04 15:58	08:55 15:21 (14)
18	04:42 22:02	05:45 20:55	06:51 19:30	07:55 18:07	08:06 17:14 (3)	08:56 15:07 (14)
19	04:44 22:00	05:47 20:52	06:53 19:27	07:58 18:04	08:08 17:17 (3)	08:57 15:16 (14)
20	04:46 21:58	05:49 20:49	06:55 19:24	08:00 18:02	08:10 17:21 (3)	08:58 15:07 (14)
21	04:47 21:57	05:51 20:47	06:57 19:21	08:02 17:59	08:13 17:22 (3)	08:58 15:10 (14)
22	04:49 21:55	05:53 20:44	06:59 19:18	08:04 18:30 (1)	08:15 17:37 (2)	08:59 14:18 (4)
23	04:51 21:53	05:55 20:41	07:01 19:16	08:07 18:28 (1)	08:17 17:20 (3)	08:59 14:30 (4)
24	04:53 21:51	05:58 20:39	07:03 19:13	08:09 18:26 (1)	08:19 17:17 (3)	09:00 14:16 (4)
25	04:55 21:49	06:00 20:36	07:05 19:10	08:11 18:25 (1)	08:21 17:15 (3)	09:00 14:31 (4)
26	04:57 21:47	06:02 20:33	07:08 19:07	08:14 18:24 (1)	08:23 17:14 (3)	09:00 14:15 (4)
27	04:59 21:45	06:04 20:31	07:10 19:04	08:16 18:33 (1)	08:25 17:13 (3)	09:01 14:32 (4)
28	05:01 21:43	06:06 20:28	07:12 19:02	08:18 18:30 (1)	08:27 17:12 (3)	09:01 14:15 (4)
29	05:03 21:41	06:08 20:25	07:14 18:59	08:20 18:27 (1)	08:29 17:11 (3)	09:01 14:36 (4)
30	05:05 21:39	06:10 20:23	07:16 18:56	08:22 18:24 (1)	08:31 17:10 (3)	09:01 14:15 (4)
31	05:07 21:37	06:13 20:20		08:24 16:34	08:32 15:59 (2)	09:00 14:37 (4)
Potential sun hours	538	474	386	321	241	207
Total, worst case			80	399	390	649
Sun reduction			0.46	0.28	0.08	0.06
Oper. time red.			1.00	1.00	1.00	1.00
Wind dir. red.			1.00	1.00	1.00	1.00
Total reduction			0.46	0.28	0.08	0.06
Total, real			37	113	31	40

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Last time (hh:mm) with flicker	(WTG causing flicker last time)
	Minutes with flicker		

Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

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Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Lauku iela 2 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (541)
Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:28 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
2	09:00 15:41	08:19 16:42	07:11 17:48	06:45 19:57	05:25 21:04	04:25 22:04	04:21 22:20	05:11 21:33	06:17 20:15	07:21 18:51	07:30 16:30	08:35 15:36
3	09:00 15:42	08:17 16:45	07:08 17:50	06:42 19:59	05:23 21:06	04:24 22:06	04:21 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:37 15:35
4	08:59 15:43	08:15 16:47	07:05 17:53	06:39 20:02	05:20 21:08	04:23 22:07	04:22 22:18	05:15 21:29	06:21 20:09	07:25 18:45	07:34 16:25	08:38 15:34
5	08:59 15:45	08:13 16:49	07:03 17:55	06:37 20:04	05:18 21:10	04:22 22:08	04:24 22:18	05:17 21:26	06:23 20:06	07:27 18:42	07:37 16:23	08:40 15:33
6	08:58 15:46	08:10 16:52	07:00 17:57	06:34 20:06	05:16 21:12	04:21 22:10	04:25 22:17	05:19 21:24	06:25 20:04	07:29 18:39	07:39 16:20	08:42 15:32
7	08:58 15:48	08:08 16:54	06:57 17:59	06:31 20:08	05:13 21:15	04:20 22:11	04:26 22:16	05:21 21:22	06:27 20:01	07:31 18:37	07:41 16:18	08:43 15:32
8	08:57 15:49	08:06 16:56	06:55 18:02	06:28 20:10	05:11 21:17	04:19 22:12	04:27 22:15	05:24 21:19	06:30 19:58	07:34 18:34	07:44 16:16	08:45 15:31
9	08:56 15:51	08:04 16:59	06:52 18:04	06:25 20:13	05:09 21:19	04:19 22:13	04:28 22:14	05:26 21:17	06:32 19:55	07:36 18:31	07:46 16:14	08:46 15:31
10	08:55 15:53	08:01 17:01	06:49 18:06	06:23 20:15	05:06 21:21	04:18 22:14	04:30 22:13	05:28 21:15	06:34 19:52	07:38 18:28	07:48 16:12	08:48 15:30
11	08:54 15:55	07:59 17:04	06:46 18:09	06:20 20:17	05:04 21:23	04:17 22:15	04:31 22:12	05:30 21:12	06:36 19:50	07:40 18:26	07:51 16:10	08:49 15:30
12	08:53 15:57	07:57 17:06	06:44 18:11	06:17 20:19	05:02 21:25	04:17 22:16	04:33 22:10	05:32 21:19	06:38 19:47	07:42 18:23	07:53 16:08	08:50 15:29
13	08:52 15:58	07:54 17:08	06:41 18:13	06:15 20:22	05:00 21:27	04:16 22:17	04:34 22:09	05:34 21:07	06:40 19:44	07:45 18:20	07:55 16:06	08:51 15:29
14	08:51 16:00	07:52 17:11	06:38 18:15	06:12 20:24	04:58 21:29	04:16 22:18	04:36 22:08	05:36 21:05	06:42 19:41	07:47 18:18	07:57 16:04	08:53 15:29
15	08:50 16:02	07:49 17:13	06:35 18:17	06:09 20:26	04:56 21:32	04:15 22:19	04:37 22:06	05:38 21:02	06:44 19:38	07:49 18:15	08:00 16:02	08:54 15:29
16	08:48 16:04	07:47 17:15	06:32 18:20	06:06 20:28	04:54 21:34	04:15 22:19	04:39 22:05	05:41 21:00	06:46 19:35	07:51 18:12	08:02 16:00	08:55 15:29
17	08:47 16:06	07:44 17:18	06:30 18:22	06:04 20:30	04:52 21:36	04:15 22:20	04:41 22:03	05:43 20:57	06:49 19:33	07:53 18:10	08:04 15:58	08:56 15:29
18	08:46 16:08	07:42 17:20	06:27 18:24	06:01 20:33	04:50 21:38	04:15 22:20	04:42 22:02	05:45 20:55	06:51 19:30	07:56 18:07	08:06 15:56	08:56 15:29
19	08:44 16:11	07:39 17:22	06:24 18:26	05:58 20:35	04:48 21:40	04:15 22:21	04:44 22:00	05:47 20:52	06:53 19:27	07:58 18:04	08:09 15:54	08:57 15:29
20	08:43 16:13	07:37 17:25	06:21 18:29	05:56 20:37	04:46 21:42	04:15 22:21	04:46 21:59	05:49 20:50	06:55 19:24	08:00 18:02	08:11 15:53	08:58 15:29
21	08:41 16:15	07:34 17:27	06:18 18:31	05:53 20:39	04:44 21:44	04:15 22:21	04:48 21:57	05:51 20:47	06:57 19:21	08:02 17:59	08:13 15:51	08:59 15:30
22	08:40 16:17	07:32 17:30	06:16 18:33	05:50 20:41	04:42 21:45	04:15 22:22	04:49 21:55	05:53 20:44	06:59 19:19	08:05 17:57	08:15 15:49	08:59 15:30
23	08:38 16:19	07:29 17:32	06:13 18:35	05:48 20:44	04:40 21:47	04:15 22:22	04:51 21:53	05:56 20:42	07:01 19:16	08:07 17:54	08:17 15:48	09:00 15:31
24	08:36 16:21	07:27 17:34	06:10 18:37	05:45 20:46	04:39 21:49	04:15 22:22	04:53 21:52	05:58 20:39	07:03 19:13	08:09 17:52	08:19 15:46	09:00 15:31
25	08:34 16:24	07:24 17:37	06:07 18:40	05:43 20:48	04:37 21:51	04:16 22:22	04:55 21:50	06:00 20:36	07:06 19:10	07:11 16:49	08:21 15:45	09:00 15:32
26	08:33 16:26	07:21 17:39	06:04 18:42	05:40 20:50	04:35 21:53	04:16 22:22	04:57 21:48	06:02 20:34	07:08 19:07	07:14 16:46	08:23 15:43	09:01 15:33
27	08:31 16:28	07:19 17:41	06:02 18:44	05:38 20:53	04:34 21:55	04:17 22:22	04:59 21:46	06:04 20:31	07:10 19:05	07:16 16:44	08:25 15:42	09:01 15:34
28	08:29 16:30	07:16 17:43	05:59 18:46	05:35 20:55	04:32 21:56	04:17 22:21	05:01 21:44	06:06 20:28	07:12 19:02	07:18 16:42	08:27 15:41	09:01 15:35
29	08:27 16:33		05:56 19:48	05:33 20:57	04:31 21:58	04:18 22:21	05:03 21:42	06:08 20:26	07:14 18:59	07:21 16:39	08:29 15:39	09:01 15:36
30	08:25 16:35		05:53 19:51	05:30 20:59	04:29 22:00	04:19 22:21	05:05 21:40	06:10 20:23	07:16 18:56	07:23 16:37	08:31 15:38	09:01 15:37
31	08:23 16:37		05:50 19:53		04:28 22:01		05:07 21:38	06:13 20:20		07:25 16:34		09:01 15:38
Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa
Assumptions for shadow calculations

Shadow receptor: Ledini - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (580)
Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:00 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:27 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:27 16:32	08:33 15:37
2	09:00 15:40	08:19 16:42	07:11 17:48	06:45 19:57	05:25 21:03	04:25 22:04	04:20 22:20	05:11 21:33	06:17 20:14	07:20 18:50	07:30 16:29	08:35 15:36
3	09:00 15:42	08:17 16:44	07:08 17:50	06:42 19:59	05:23 21:06	04:24 22:06	04:21 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:36 15:35
4	08:59 15:43	08:15 16:47	07:05 17:53	06:39 20:02	05:20 21:08	04:23 22:07	04:22 22:18	05:15 21:29	06:21 20:09	07:25 18:45	07:34 16:25	08:38 15:34
5	08:59 15:45	08:13 16:49	07:03 17:55	06:36 20:04	05:18 21:10	04:22 22:08	04:23 22:17	05:17 21:26	06:23 20:06	07:27 18:42	07:37 16:22	08:40 15:33
6	08:58 15:46	08:10 16:52	07:00 17:57	06:34 20:06	05:15 21:12	04:21 22:10	04:25 22:17	05:19 21:24	06:25 20:03	07:29 18:39	07:39 16:20	08:42 15:32
7	08:57 15:48	08:08 16:54	06:57 17:59	06:31 20:08	05:13 21:14	04:20 22:11	04:26 22:16	05:21 21:22	06:27 20:01	07:31 18:37	07:41 16:18	08:43 15:32
8	08:57 15:49	08:06 16:56	06:54 18:02	06:28 20:10	05:11 21:17	04:19 22:12	04:27 22:15	05:23 21:19	06:29 19:58	07:33 18:34	07:44 16:16	08:45 15:31
9	08:56 15:51	08:04 16:59	06:52 18:04	06:25 20:13	05:09 21:19	04:18 22:13	04:28 22:14	05:26 21:17	06:32 19:55	07:36 18:31	07:46 16:14	08:46 15:30
10	08:55 15:53	08:01 17:01	06:49 18:06	06:23 20:15	05:06 21:21	04:18 22:14	04:30 22:13	05:28 21:15	06:34 19:52	07:38 18:28	07:48 16:12	08:47 15:30
11	08:54 15:55	07:59 17:03	06:46 18:08	06:20 20:17	05:04 21:23	04:17 22:15	04:31 22:12	05:30 21:12	06:36 19:49	07:40 18:26	07:50 16:09	08:49 15:30
12	08:53 15:56	07:57 17:06	06:43 18:11	06:17 20:19	05:02 21:25	04:16 22:16	04:33 22:10	05:32 21:10	06:38 19:47	07:42 18:23	07:53 16:07	08:50 15:29
13	08:52 15:58	07:54 17:08	06:41 18:13	06:14 20:21	05:00 21:27	04:16 22:17	04:34 22:09	05:34 21:07	06:40 19:44	07:44 18:20	07:55 16:05	08:51 15:29
14	08:51 16:00	07:52 17:11	06:38 18:15	06:12 20:24	04:58 21:29	04:16 22:18	04:36 22:08	05:36 21:05	06:42 19:41	07:47 18:18	07:57 16:03	08:52 15:29
15	08:50 16:02	07:49 17:13	06:35 18:17	06:09 20:26	04:55 21:31	04:15 22:19	04:37 22:06	05:38 21:02	06:44 19:38	07:49 18:15	08:00 16:01	08:54 15:29
16	08:48 16:04	07:47 17:15	06:32 18:20	06:06 20:28	04:53 21:33	04:15 22:19	04:39 22:05	05:40 21:00	06:46 19:35	07:51 18:12	08:02 16:00	08:55 15:29
17	08:47 16:06	07:44 17:18	06:30 18:22	06:04 20:30	04:51 21:36	04:15 22:20	04:40 22:03	05:43 20:57	06:48 19:33	07:53 18:10	08:04 15:58	08:55 15:29
18	08:46 16:08	07:42 17:20	06:27 18:24	06:01 20:32	04:49 21:38	04:15 22:20	04:42 22:02	05:45 20:55	06:51 19:30	07:56 18:07	08:06 15:56	08:56 15:29
19	08:44 16:10	07:39 17:22	06:24 18:26	05:58 20:35	04:47 21:40	04:14 22:21	04:44 22:00	05:47 20:52	06:53 19:27	07:58 18:04	08:08 15:54	08:57 15:29
20	08:43 16:13	07:37 17:25	06:21 18:28	05:56 20:37	04:46 21:41	04:14 22:21	04:46 21:59	05:49 20:49	06:55 19:24	08:00 18:02	08:11 15:52	08:58 15:29
21	08:41 16:15	07:34 17:27	06:18 18:31	05:53 20:39	04:44 21:43	04:15 22:21	04:47 21:57	05:51 20:47	06:57 19:21	08:02 17:59	08:13 15:51	08:59 15:30
22	08:39 16:17	07:32 17:29	06:16 18:33	05:50 20:41	04:42 21:45	04:15 22:22	04:49 21:55	05:53 20:44	06:59 19:18	08:05 17:56	08:15 15:49	08:59 15:30
23	08:38 16:19	07:29 17:32	06:13 18:35	05:48 20:44	04:40 21:47	04:15 22:22	04:51 21:53	05:55 20:42	07:01 19:16	08:07 17:54	08:17 15:48	09:00 15:31
24	08:36 16:21	07:27 17:34	06:10 18:37	05:45 20:46	04:38 21:49	04:15 22:22	04:53 21:51	05:58 20:39	07:03 19:13	08:09 17:51	08:19 15:46	09:00 15:31
25	08:34 16:24	07:24 17:36	06:07 18:40	05:43 20:48	04:37 21:51	04:16 22:22	04:55 21:50	06:00 20:36	07:05 19:10	07:11 16:49	08:21 15:45	09:00 15:32
26	08:33 16:26	07:21 17:39	06:04 18:42	05:40 20:50	04:35 21:53	04:16 22:22	04:57 21:48	06:02 20:34	07:08 19:07	07:14 16:46	08:23 15:43	09:01 15:33
27	08:31 16:28	07:19 17:41	06:02 18:44	05:37 20:52	04:34 21:54	04:17 22:21	04:59 21:46	06:04 20:31	07:10 19:04	07:16 16:44	08:25 15:42	09:01 15:34
28	08:29 16:30	07:16 17:43	05:59 18:46	05:35 20:55	04:32 21:56	04:17 22:21	05:01 21:44	06:06 20:28	07:12 19:02	07:18 16:41	08:27 15:40	09:01 15:34
29	08:27 16:33		06:56 19:48	05:32 20:57	04:31 21:58	04:18 22:21	05:03 21:42	06:08 20:25	07:14 18:59	07:21 16:39	08:29 15:39	09:01 15:35
30	08:25 16:35		06:53 19:51	05:30 20:59	04:29 22:00	04:19 22:21	05:05 21:40	06:10 20:23	07:16 18:56	07:23 16:37	08:31 15:38	09:01 15:36
31	08:23 16:37		06:50 19:53		04:28 22:01		05:07 21:37	06:13 20:20		07:25 16:34		09:01 15:38
Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Lejas Gerki - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (783)
Sunshine probability S (Average daily sunshine hours) []

Assumptions for shadow calculations

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
0.80 1.82 4.75 6.09 9.67 10.05 8.16 7.72 5.94 2.93 0.63 0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March		April		May		June		
1	09:00	08:21	07:14		06:48	07:16 (8)	05:28	06:07 (6)	04:27	05:16 (5)	
	15:40	16:40	17:46		19:55	42 09:00 (7)	21:01	24 06:31 (6)	22:03	47 06:30 (6)	
2	09:00	08:19	07:11		06:45	07:13 (8)	05:25	06:06 (6)	04:26	05:17 (5)	
	15:41	16:42	17:48		19:57	40 08:56 (7)	21:04	27 06:33 (6)	22:04	45 06:30 (6)	
3	09:00	08:17	07:08		06:42	07:11 (8)	05:23	06:04 (6)	04:25	05:18 (5)	
	15:42	16:45	17:51		20:00	36 08:52 (7)	21:06	29 06:33 (6)	22:06	43 06:30 (6)	
4	08:59	08:15	07:06		06:39	07:11 (8)	05:21	06:03 (6)	04:23	05:18 (5)	
	15:44	16:47	17:53		20:02	24 07:35 (8)	21:08	31 06:34 (6)	22:07	41 06:29 (6)	
5	08:59	08:13	07:03		06:37	07:09 (8)	05:18	06:02 (6)	04:22	05:18 (5)	
	15:45	16:50	17:55		20:04	27 07:36 (8)	21:10	33 06:35 (6)	22:08	39 06:28 (6)	
6	08:58	08:10	07:00		06:34	07:08 (8)	05:16	06:02 (6)	04:21	05:18 (5)	
	15:47	16:52	17:57	14 08:02 (7)	20:06	28 07:36 (8)	21:12	34 06:36 (6)	22:10	37 06:27 (6)	
7	08:57	08:08	06:57		07:44 (7)	06:31	05:13	05:44 (1)	04:21	05:19 (5)	
	15:48	16:54	18:00	21 08:05 (7)	20:08	32 07:35 (8)	21:15	37 06:36 (6)	22:11	33 06:26 (6)	
8	08:57	08:06	06:55		07:41 (7)	06:28	05:11	05:42 (1)	04:20	05:20 (5)	
	15:50	16:57	18:02	27 08:08 (7)	20:11	35 07:36 (8)	21:17	41 06:37 (6)	22:12	30 06:25 (6)	
9	08:56	08:04	06:52		07:38 (7)	06:26	05:09	05:40 (1)	04:19	05:20 (5)	
	15:52	16:59	18:04	31 08:09 (7)	20:13	38 07:35 (8)	21:19	45 06:37 (6)	22:13	27 06:24 (6)	
10	08:55	08:01	06:49		07:37 (7)	06:23	05:07	05:37 (1)	04:18	05:21 (5)	
	15:53	17:01	18:06	34 08:11 (7)	20:15	41 07:35 (8)	21:21	47 06:36 (6)	22:14	21 06:22 (6)	
11	08:54	07:59	06:46		07:36 (7)	06:20	05:04	05:36 (1)	04:18	05:21 (5)	
	15:55	17:04	18:09	36 08:12 (7)	20:17	43 07:35 (8)	21:23	49 06:37 (6)	22:15	18 05:39 (5)	
12	08:53	07:57	06:44		07:34 (7)	06:17	05:02	05:34 (1)	04:17	05:21 (5)	
	15:57	17:06	18:11	39 08:13 (7)	20:19	42 07:34 (8)	21:25	52 06:37 (6)	22:16	19 05:40 (5)	
13	08:52	07:54	06:41		07:33 (7)	06:15	05:00	05:32 (1)	04:16	05:21 (5)	
	15:59	17:09	18:13	40 08:13 (7)	20:22	39 07:32 (8)	21:27	54 06:37 (6)	22:17	18 05:39 (5)	
14	08:51	07:52	06:38		07:31 (7)	06:12	04:58	05:31 (1)	04:16	05:22 (5)	
	16:01	17:11	18:15	43 08:14 (7)	20:24	35 07:32 (8)	21:29	55 06:37 (6)	22:18	17 05:39 (5)	
15	08:50	07:49	06:35		07:31 (7)	06:09	04:56	05:28 (5)	04:16	05:22 (5)	
	16:03	17:13	18:18	44 08:15 (7)	20:26	28 07:30 (8)	21:31	57 06:37 (6)	22:19	17 05:39 (5)	
16	08:48	07:47	06:33		06:59 (10)	06:07	04:54	05:26 (5)	04:15	05:23 (5)	
	16:05	17:16	18:20	48 08:15 (7)	20:28	18 07:28 (8)	21:34	59 06:37 (6)	22:19	16 05:39 (5)	
17	08:47	07:45	06:30		06:56 (10)	06:04	04:52	05:24 (5)	04:15	05:23 (5)	
	16:07	17:18	18:22	53 08:15 (7)	20:30	14 07:26 (8)	21:36	59 06:36 (6)	22:20	17 05:40 (5)	
18	08:46	07:42	06:27		06:53 (10)	06:01	04:50	05:23 (5)	04:15	05:24 (5)	
	16:09	17:20	18:24	57 08:15 (7)	20:33	6 07:21 (8)	21:38	60 06:37 (6)	22:20	16 05:40 (5)	
19	08:44	07:40	06:24		06:50 (10)	05:59	04:48	05:21 (5)	04:15	05:24 (5)	
	16:11	17:23	18:27	60 08:14 (7)	20:35		21:40	60 06:36 (6)	22:21	16 05:40 (5)	
20	08:43	07:37	06:21		06:47 (10)	05:56	06:23 (9)	04:46	05:19 (5)	04:15	05:24 (5)
	16:13	17:25	18:29	64 08:14 (7)	20:37	3 06:26 (9)	21:42	60 06:36 (6)	22:21	16 05:40 (5)	
21	08:41	07:34	06:19		06:46 (10)	05:53	06:21 (9)	04:44	05:18 (5)	04:15	05:24 (5)
	16:15	17:27	18:31	64 08:14 (7)	20:39	8 06:29 (9)	21:43	57 06:36 (6)	22:21	16 05:40 (5)	
22	08:40	07:32	06:16		06:46 (10)	05:51	06:18 (9)	04:42	05:16 (5)	04:15	05:24 (5)
	16:17	17:30	18:33	64 08:14 (7)	20:42	12 06:30 (9)	21:45	57 06:35 (6)	22:22	16 05:40 (5)	
23	08:38	07:29	06:13		06:45 (10)	05:48	06:16 (9)	04:41	05:16 (5)	04:16	05:25 (5)
	16:19	17:32	18:35	64 08:13 (7)	20:44	15 06:31 (9)	21:47	57 06:35 (6)	22:22	16 05:41 (5)	
24	08:36	07:27	06:10		06:46 (10)	05:45	06:13 (9)	04:39	05:15 (5)	04:16	05:25 (5)
	16:22	17:34	18:38	60 08:12 (7)	20:46	18 06:31 (9)	21:49	58 06:35 (6)	22:22	16 05:41 (5)	
25	08:34	07:24	06:07		06:47 (10)	05:43	06:11 (9)	04:37	05:16 (5)	04:16	05:24 (5)
	16:24	17:37	18:40	57 08:11 (7)	20:48	21 06:32 (9)	21:51	57 06:35 (6)	22:22	17 05:41 (5)	
26	08:33	07:22	06:05		06:49 (10)	05:40	06:09 (9)	04:36	05:15 (5)	04:17	05:25 (5)
	16:26	17:39	18:42	51 08:10 (7)	20:50	22 06:31 (9)	21:53	55 06:33 (6)	22:22	17 05:42 (5)	
27	08:31	07:19	06:02		07:29 (7)	05:38	06:09 (9)	04:34	05:16 (5)	04:17	05:25 (5)
	16:28	17:41	18:44	40 08:09 (7)	20:53	22 06:31 (9)	21:54	54 06:33 (6)	22:21	16 05:41 (5)	
28	08:29	07:16	05:59		07:29 (7)	05:35	06:09 (9)	04:33	05:16 (5)	04:18	05:25 (5)
	16:31	17:44	18:46	38 08:07 (7)	20:55	23 06:32 (9)	21:56	53 06:33 (6)	22:21	17 05:42 (5)	
29	08:27		06:56		08:30 (7)	05:33	06:09 (9)	04:31	05:16 (5)	04:19	05:25 (5)
	16:33		19:49	36 09:06 (7)	20:57	22 06:31 (9)	21:58	52 06:33 (6)	22:21	18 05:43 (5)	
30	08:25		06:53		08:30 (7)	05:30	06:09 (6)	04:30	05:17 (5)	04:19	05:25 (5)
	16:35		19:51	34 09:04 (7)	20:59	22 06:31 (9)	22:00	49 06:32 (6)	22:21	18 05:43 (5)	
31	08:23		06:51		07:19 (8)		04:28		05:16 (5)		
	16:38		19:53	41 09:02 (7)			22:01	48 06:31 (6)			
Potential sun hours	227	262	365		429		515		539		
Total, worst case			1160		756		1510		700		
Sun reduction			0.40		0.43		0.58		0.56		
Oper. time red.			1.00		1.00		1.00		1.00		
Wind dir. red.			1.00		1.00		1.00		1.00		
Total reduction			0.40		0.43		0.58		0.56		
Total, real			467		322		878		392		

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Last time (hh:mm) with flicker	(WTG causing flicker last time)
	Minutes with flicker		

Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Lejas Gerki - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (783)
 Sunshine probability S (Average daily sunshine hours) []

Assumptions for shadow calculations

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
 0.80 1.82 4.75 6.09 9.67 10.05 8.16 7.72 5.94 2.93 0.63 0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	July		August		September		October		November		December	
1	04:20	05:25 (5)	05:09	05:45 (1)	06:15	06:46 (3)	07:19	08:13 (7)	07:28	08:33		
	22:20	18 05:43 (5)	21:35	51 06:48 (6)	20:17	43 07:34 (8)	18:53	39 08:52 (7)	16:32	15:37		
2	04:21	05:25 (5)	05:11	05:47 (1)	06:17	06:48 (3)	07:21	08:13 (7)	07:30	08:35		
	22:20	19 05:44 (5)	21:33	49 06:48 (6)	20:15	42 07:34 (8)	18:51	38 08:51 (7)	16:30	15:36		
3	04:22	05:25 (5)	05:13	05:48 (1)	06:19	06:50 (3)	07:23	08:14 (7)	07:32	08:37		
	22:19	26 06:28 (6)	21:31	46 06:46 (6)	20:12	38 07:33 (8)	18:48	35 08:49 (7)	16:27	15:35		
4	04:23	05:25 (5)	05:15	05:50 (1)	06:21	06:52 (3)	07:25	08:16 (7)	07:35	08:38		
	22:18	29 06:30 (6)	21:29	43 06:46 (6)	20:09	35 07:33 (8)	18:45	32 08:48 (7)	16:25	15:34		
5	04:24	05:25 (5)	05:18	05:52 (1)	06:23	06:54 (3)	07:27	08:17 (7)	07:37	08:40		
	22:17	33 06:32 (6)	21:26	40 06:46 (6)	20:06	32 07:32 (8)	18:42	29 08:46 (7)	16:23	15:34		
6	04:25	05:25 (5)	05:20	05:54 (1)	06:26	06:56 (3)	07:29	08:19 (7)	07:39	08:42		
	22:17	35 06:33 (6)	21:24	35 06:45 (6)	20:04	29 07:32 (8)	18:40	24 08:43 (7)	16:21	15:33		
7	04:26	05:25 (5)	05:22	06:11 (6)	06:28	07:05 (8)	07:31	08:21 (7)	07:41	08:43		
	22:16	37 06:34 (6)	21:22	34 06:45 (6)	20:01	26 07:31 (8)	18:37	18 08:39 (7)	16:18	15:32		
8	04:28	05:25 (5)	05:24	06:12 (6)	06:30	07:05 (8)	07:34	08:27 (7)	07:44	08:45		
	22:15	40 06:35 (6)	21:19	32 06:44 (6)	19:58	25 07:30 (8)	18:34	8 08:35 (7)	16:16	15:31		
9	04:29	05:24 (5)	05:26	06:13 (6)	06:32	07:05 (8)	07:36		07:46	08:46		
	22:14	43 06:36 (6)	21:17	30 06:43 (6)	19:55	34 08:45 (7)	18:31		16:14	15:31		
10	04:30	05:24 (5)	05:28	06:13 (6)	06:34	07:06 (8)	07:38		07:48	08:47		
	22:13	45 06:37 (6)	21:15	29 06:42 (6)	19:52	41 08:49 (7)	18:29		16:12	15:30		
11	04:32	05:25 (5)	05:30	06:15 (6)	06:36	07:08 (8)	07:40		07:51	08:49		
	22:12	47 06:39 (6)	21:12	26 06:41 (6)	19:50	43 08:52 (7)	18:26		16:10	15:30		
12	04:33	05:25 (5)	05:32	06:16 (6)	06:38	07:10 (8)	07:42		07:53	08:50		
	22:10	47 06:39 (6)	21:10	23 06:39 (6)	19:47	41 08:53 (7)	18:23		16:08	15:30		
13	04:34	05:24 (5)	05:34	06:18 (6)	06:40	08:22 (7)	07:45		07:55	08:51		
	22:09	50 06:40 (6)	21:07	21 06:39 (9)	19:44	33 08:55 (7)	18:21		16:06	15:29		
14	04:36	05:25 (5)	05:37	06:17 (9)	06:42	08:20 (7)	07:47		07:57	08:52		
	22:08	51 06:41 (6)	21:05	22 06:39 (9)	19:41	36 08:56 (7)	18:18		16:04	15:29		
15	04:38	05:25 (5)	05:39	06:17 (9)	06:45	08:19 (7)	07:49		08:00	08:54		
	22:06	52 06:41 (6)	21:02	22 06:39 (9)	19:38	38 08:57 (7)	18:15		16:02	15:29		
16	04:39	05:25 (5)	05:41	06:17 (9)	06:47	08:17 (7)	07:51		08:02	08:55		
	22:05	54 06:43 (6)	21:00	22 06:39 (9)	19:36	40 08:57 (7)	18:13		16:00	15:29		
17	04:41	05:25 (5)	05:43	06:17 (9)	06:49	07:37 (10)	07:53		08:04	08:55		
	22:03	55 06:43 (6)	20:57	22 06:39 (9)	19:33	50 08:58 (7)	18:10		15:58	15:29		
18	04:43	05:25 (5)	05:45	06:18 (9)	06:51	07:34 (10)	07:56		08:06	08:56		
	22:02	56 06:44 (6)	20:55	20 06:38 (9)	19:30	56 08:58 (7)	18:07		15:56	15:29		
19	04:44	05:25 (5)	05:47	06:20 (9)	06:53	07:34 (10)	07:58		08:09	08:57		
	22:00	57 06:44 (6)	20:52	17 06:37 (9)	19:27	59 08:59 (7)	18:05		15:55	15:29		
20	04:46	05:26 (5)	05:49	06:22 (9)	06:55	07:32 (10)	08:00		08:11	08:58		
	21:59	57 06:45 (6)	20:50	14 06:36 (9)	19:24	62 08:59 (7)	18:02		15:53	15:30		
21	04:48	05:25 (5)	05:52	06:24 (9)	06:57	07:31 (10)	08:02		08:13	08:59		
	21:57	58 06:45 (6)	20:47	11 06:35 (9)	19:22	64 08:59 (7)	17:59		15:51	15:30		
22	04:50	05:27 (5)	05:54	06:26 (9)	06:59	07:31 (10)	08:05		08:15	08:59		
	21:55	57 06:46 (6)	20:44	7 06:33 (9)	19:19	64 08:59 (7)	17:57		15:50	15:31		
23	04:52	05:29 (5)	05:56	06:28 (9)	07:01	07:31 (10)	08:07		08:17	09:00		
	21:53	58 06:46 (6)	20:42	2 06:30 (9)	19:16	65 08:59 (7)	17:54		15:48	15:31		
24	04:53	05:30 (5)	05:58		07:04	07:33 (10)	08:09		08:19	09:00		
	21:51	60 06:46 (6)	20:39		19:13	61 08:58 (7)	17:52		15:46	15:32		
25	04:55	05:32 (5)	06:00	07:18 (8)	07:06	07:35 (10)	07:12		08:21	09:00		
	21:50	60 06:47 (6)	20:36	8 07:26 (8)	19:10	59 08:58 (7)	16:49		15:45	15:32		
26	04:57	05:34 (5)	06:02	07:14 (8)	07:08	07:37 (10)	07:14		08:23	09:01		
	21:48	59 06:47 (6)	20:34	15 07:29 (8)	19:07	54 08:57 (7)	16:47		15:44	15:33		
27	04:59	05:36 (5)	06:04	07:12 (8)	07:10	07:39 (10)	07:16		08:25	09:01		
	21:46	59 06:48 (6)	20:31	19 07:31 (8)	19:05	49 08:56 (7)	16:44		15:42	15:34		
28	05:01	05:37 (5)	06:06	06:51 (3)	07:12	08:12 (7)	07:18		08:27	09:01		
	21:44	58 06:47 (6)	20:28	29 07:32 (8)	19:02	44 08:56 (7)	16:42		15:41	15:35		
29	05:03	05:39 (5)	06:09	06:48 (3)	07:14	08:12 (7)	07:21		08:29	09:01		
	21:42	57 06:47 (6)	20:26	36 07:33 (8)	18:59	43 08:55 (7)	16:39		15:40	15:36		
30	05:05	05:41 (1)	06:11	06:47 (3)	07:16	08:12 (7)	07:23		08:31	09:01		
	21:40	56 06:48 (6)	20:23	38 07:33 (8)	18:56	42 08:54 (7)	16:37		15:39	15:37		
31	05:07	05:43 (1)	06:13	06:46 (3)			07:25			09:01		
	21:37	53 06:48 (6)	20:20	41 07:33 (8)			16:34			15:38		
Potential sun hours	538		474		386		321		241	207		
Total, worst case	1486		804		1348		223					
Sun reduction	0.47		0.50		0.46		0.28					
Oper. time red.	1.00		1.00		1.00		1.00					
Wind dir. red.	1.00		1.00		1.00		1.00					
Total reduction	0.47		0.50		0.46		0.28					
Total, real	698		406		623		63					

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Last time (hh:mm) with flicker	(WTG causing flicker last time)
	Minutes with flicker		

Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Lejasstaldoti - Shadow Receptor: 1.0×1.0 Azimuth: 3.1° Slope: 90.0° (772)
Sunshine probability S (Average daily sunshine hours) []

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
0.80 1.82 4.75 6.09 9.67 10.05 8.16 7.72 5.94 2.93 0.63 0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:40	08:21 16:40	08:56 (6) 17:46	07:14 19:55	06:48 21:02	05:28 22:03	04:27 22:20	05:09 21:36	06:15 20:18	07:19 18:54	07:28 16:32	08:33 15:37
2	09:00 15:41	08:19 16:42	08:56 (6) 17:48	07:11 19:57	06:45 21:04	05:25 22:04	04:26 22:20	05:11 21:33	06:17 20:15	07:21 18:51	07:30 16:30	08:35 15:36
3	09:00 15:42	08:17 16:45	08:57 (6) 17:51	07:08 20:00	06:42 21:06	05:23 22:06	04:25 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:37 15:35
4	08:59 15:44	08:15 16:47	08:58 (6) 17:53	07:06 20:02	06:40 21:08	05:21 22:07	04:23 22:18	05:15 21:29	06:21 20:09	07:25 18:45	07:35 16:25	08:38 15:34
5	08:59 15:45	08:13 16:50	08:59 (6) 17:55	07:03 20:04	06:37 21:10	05:18 22:09	04:24 22:18	05:17 21:27	06:23 20:06	07:27 18:42	07:37 16:23	08:40 15:34
6	08:58 15:47	08:11 16:52	09:01 (6) 17:57	07:00 20:06	06:34 21:13	05:16 22:10	04:21 22:17	05:20 21:24	06:26 20:04	07:29 18:40	07:39 16:21	8 08:31 (6) 08:40
7	08:58 15:48	08:08 16:54	09:09 (6) 17:58	06:57 20:06	06:31 21:13	05:13 22:10	04:20 22:17	05:22 21:22	06:28 20:01	07:32 18:37	07:42 16:18	12 08:39 (6) 08:40
8	08:57 15:50	08:06 16:57	09:09 (6) 17:58	06:55 20:08	06:28 21:15	05:11 22:11	04:20 22:16	05:24 21:22	06:30 20:01	07:34 18:37	07:44 16:18	14 08:42 (6) 08:43
9	08:56 15:51	08:04 16:59	09:09 (6) 17:58	06:52 20:11	06:26 21:17	05:09 22:12	04:19 22:15	05:26 21:20	06:32 19:58	07:36 18:34	07:46 16:16	15 08:43 (6) 08:44
10	08:55 15:53	08:02 17:01	09:09 (6) 17:58	06:49 20:15	06:23 21:21	05:07 22:14	04:18 22:13	05:28 21:15	06:34 19:53	07:38 18:29	07:48 16:12	16 08:43 (6) 08:44
11	08:54 15:55	07:59 17:04	09:09 (6) 17:58	06:46 20:17	06:20 21:23	05:04 22:15	04:17 22:12	05:30 21:12	06:36 19:50	07:40 18:26	07:51 16:10	17 08:44 (6) 08:45
12	08:53 15:57	07:57 17:06	09:09 (6) 17:58	06:44 20:19	06:17 21:25	05:02 22:16	04:17 22:11	05:32 21:10	06:38 19:47	07:42 18:23	07:53 16:08	16 08:43 (6) 08:44
13	08:52 15:59	07:54 17:09	09:09 (6) 17:58	06:41 20:22	06:15 21:27	05:00 22:17	04:16 22:09	05:34 21:08	06:40 19:44	07:45 18:21	07:55 16:06	14 08:44 (6) 08:45
14	08:51 16:01	07:52 17:11	09:09 (6) 17:58	06:38 20:24	06:12 21:30	04:58 22:18	04:16 22:08	05:37 21:05	06:42 19:41	07:47 18:18	07:58 16:04	11 08:43 (6) 08:44
15	08:50 16:03	07:50 17:13	09:09 (6) 17:58	06:35 20:26	06:09 21:32	04:56 22:19	04:16 22:07	05:39 21:03	06:45 19:39	07:49 18:15	08:00 16:02	8 08:43 (6) 08:44
16	08:49 16:05	07:47 17:16	09:09 (6) 17:58	06:33 20:28	06:07 21:34	04:54 22:19	04:15 22:05	05:41 21:00	06:47 19:36	07:51 18:13	08:02 16:00	5 08:43 (6) 08:44
17	08:47 16:07	07:45 17:18	09:09 (6) 17:58	06:30 20:31	06:04 21:36	04:52 22:20	04:15 22:04	05:41 20:57	06:49 19:33	07:54 18:10	08:04 15:58	2 08:42 (6) 08:43
18	08:46 16:09	07:42 17:20	09:09 (6) 17:58	06:27 20:33	06:01 21:38	04:50 22:21	04:15 22:02	05:45 20:55	06:51 19:30	07:56 18:07	08:06 15:56	08:57 15:29
19	08:44 16:11	07:40 17:23	09:09 (6) 17:58	06:24 20:35	05:59 21:40	04:48 22:21	04:15 22:00	05:47 20:52	06:53 19:27	07:58 18:05	08:09 15:55	08:57 15:29
20	08:43 16:13	07:37 17:25	09:09 (6) 17:58	06:21 20:37	05:56 21:42	04:46 22:21	04:15 21:59	05:49 20:50	06:55 19:24	08:00 18:02	08:11 15:53	08:58 15:30
21	08:41 16:15	07:35 17:27	09:09 (6) 17:58	06:19 20:39	05:53 21:44	04:44 22:22	04:15 21:57	05:48 20:47	06:57 19:22	08:03 17:59	08:13 15:51	08:59 15:30
22	08:40 16:17	07:32 17:30	09:09 (6) 17:58	06:16 20:42	05:51 21:46	04:42 22:22	04:15 21:55	05:54 20:44	06:59 19:19	08:05 17:57	08:15 15:50	08:59 15:30
23	08:38 16:19	07:29 17:32	09:09 (6) 17:58	06:13 20:44	05:48 21:47	04:41 22:22	04:15 21:53	05:56 20:42	07:02 19:16	08:07 17:54	08:17 15:48	09:00 15:31
24	08:36 16:22	07:27 17:34	09:09 (6) 17:58	06:10 20:46	05:45 21:49	04:39 22:22	04:16 21:52	05:58 20:39	07:04 19:13	08:09 17:52	08:19 15:46	09:00 15:32
25	08:35 16:24	07:24 17:37	09:09 (6) 17:58	06:07 20:48	05:43 21:51	04:37 22:22	04:16 21:50	06:00 20:36	07:06 19:10	08:12 16:49	08:21 15:45	09:01 15:32
26	08:33 16:26	07:22 17:39	09:09 (6) 17:58	06:05 20:50	05:40 21:53	04:36 22:22	04:17 21:48	06:02 20:34	07:08 19:08	08:14 16:47	08:23 15:44	09:01 15:33
27	08:31 16:28	07:19 17:41	09:09 (6) 17:58	06:02 20:53	05:38 21:55	04:34 22:22	04:17 21:46	06:04 20:31	07:10 19:05	08:16 16:44	08:25 15:42	09:01 15:34
28	08:29 16:31	07:16 17:44	09:09 (6) 17:58	05:59 20:55	05:35 21:56	04:32 22:21	04:18 21:44	06:06 20:28	07:12 19:02	08:19 16:42	08:27 15:41	09:01 15:35
29	08:27 16:33	07:11 17:41	09:09 (6) 17:58	06:56 20:57	05:33 21:58	04:31 22:21	04:18 21:42	06:09 20:26	07:14 18:59	08:29 16:39	08:31 15:40	09:01 15:36
30	08:25 16:35	07:06 17:41	09:09 (6) 17:58	06:53 20:59	05:30 22:00	04:30 22:21	04:19 21:40	06:11 20:23	07:16 18:56	08:23 16:37	08:31 15:38	09:01 15:37
31	08:23 16:38	07:00 17:41	09:09 (6) 17:58	06:51 20:59	05:28 22:01	04:28 22:21	05:07 21:38	06:13 20:20	07:25 16:34	08:31 15:38	08:31 15:38	09:01 15:38
Potential sun hours	227	262	365	429	515	539	538	474	386	321	241	207
Total, worst case	56	81									138	
Sun reduction	0.11	0.19									0.08	
Oper. time red.	1.00	1.00									1.00	
Wind dir. red.	1.00	1.00									1.00	
Total reduction	0.11	0.19									0.08	
Total, real	6	16									11	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Last time (hh:mm) with flicker	(WTG causing flicker last time)
	Minutes with flicker		

Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa
Assumptions for shadow calculations

Shadow receptor: Liepas - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (459)
Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:00 15:39	08:21 16:40	07:13 17:46	06:47 19:55	05:27 21:01	04:27 22:02	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:27 16:32	08:33 15:37
2	09:00 15:40	08:19 16:42	07:10 17:48	06:45 19:57	05:25 21:03	04:25 22:04	04:20 22:19	05:11 21:33	06:17 20:14	07:20 18:50	07:30 16:29	08:34 15:36
3	08:59 15:42	08:17 16:44	07:08 17:50	06:42 19:59	05:23 21:05	04:24 22:05	04:21 22:19	05:13 21:31	06:19 20:12	07:22 18:48	07:32 16:27	08:36 15:35
4	08:59 15:43	08:14 16:47	07:05 17:52	06:39 20:01	05:20 21:08	04:23 22:07	04:22 22:18	05:15 21:28	06:21 20:09	07:25 18:45	07:34 16:25	08:38 15:34
5	08:58 15:45	08:12 16:49	07:02 17:55	06:36 20:04	05:18 21:10	04:22 22:08	04:24 22:17	05:17 21:26	06:23 20:06	07:27 18:42	07:36 16:22	08:40 15:33
6	08:58 15:46	08:10 16:51	07:00 17:57	06:34 20:06	05:15 21:12	04:21 22:09	04:25 22:16	05:19 21:24	06:25 20:03	07:29 18:39	07:39 16:20	08:41 15:32
7	08:57 15:48	08:08 16:54	06:57 17:59	06:31 20:08	05:13 21:14	04:20 22:11	04:26 22:15	05:21 21:21	06:27 20:00	07:31 18:36	07:41 16:18	08:43 15:32
8	08:56 15:49	08:06 16:56	06:54 18:02	06:28 20:10	05:11 21:16	04:19 22:12	04:27 22:14	05:23 21:19	06:29 19:58	07:33 18:34	07:43 16:16	08:44 15:31
9	08:56 15:51	08:03 16:59	06:52 18:04	06:25 20:12	05:08 21:18	04:18 22:13	04:28 22:13	05:25 21:17	06:31 19:55	07:35 18:31	07:46 16:14	08:46 15:30
10	08:55 15:53	08:01 17:01	06:49 18:06	06:23 20:15	05:06 21:21	04:18 22:14	04:30 22:12	05:28 21:14	06:34 19:52	07:38 18:28	07:48 16:12	08:47 15:30
11	08:54 15:55	07:59 17:03	06:46 18:08	06:20 20:17	05:04 21:23	04:17 22:15	04:31 22:11	05:30 21:12	06:36 19:49	07:40 18:26	07:50 16:09	08:48 15:30
12	08:53 15:56	07:56 17:06	06:43 18:11	06:17 20:19	05:02 21:25	04:17 22:16	04:33 22:10	05:32 21:09	06:38 19:46	07:42 18:23	07:52 16:07	08:50 15:29
13	08:52 15:58	07:54 17:08	06:40 18:13	06:14 20:21	05:00 21:27	04:16 22:17	04:34 22:09	05:34 21:07	06:40 19:44	07:44 18:20	07:55 16:05	08:51 15:29
14	08:50 16:00	07:51 17:10	06:38 18:15	06:12 20:23	04:58 21:29	04:16 22:17	04:36 22:07	05:36 21:04	06:42 19:41	07:46 18:17	07:57 16:03	08:52 15:29
15	08:49 16:02	07:49 17:13	06:35 18:17	06:09 20:26	04:55 21:31	04:15 22:18	04:37 22:06	05:38 21:02	06:44 19:38	07:49 18:15	07:59 16:01	08:53 15:29
16	08:48 16:04	07:47 17:15	06:32 18:19	06:06 20:28	04:53 21:33	04:15 22:19	04:39 22:04	05:40 20:59	06:46 19:35	07:51 18:12	08:02 16:00	08:54 15:29
17	08:47 16:06	07:44 17:18	06:29 18:22	06:04 20:30	04:51 21:35	04:15 22:19	04:40 22:03	05:43 20:57	06:48 19:32	07:53 18:09	08:04 15:58	08:55 15:29
18	08:45 16:08	07:42 17:20	06:27 18:24	06:01 20:32	04:49 21:37	04:15 22:20	04:42 22:01	05:45 20:54	06:50 19:30	07:55 18:07	08:06 15:56	08:56 15:29
19	08:44 16:10	07:39 17:22	06:24 18:26	05:58 20:34	04:48 21:39	04:15 22:20	04:44 22:00	05:47 20:52	06:53 19:27	07:58 18:04	08:08 15:54	08:57 15:29
20	08:42 16:13	07:37 17:25	06:21 18:28	05:56 20:37	04:46 21:41	04:15 22:21	04:46 21:58	05:49 20:49	06:55 19:24	08:00 18:02	08:10 15:52	08:57 15:29
21	08:41 16:15	07:34 17:27	06:18 18:31	05:53 20:39	04:44 21:43	04:15 22:21	04:47 21:56	05:51 20:47	06:57 19:21	08:02 17:59	08:12 15:51	08:58 15:30
22	08:39 16:17	07:32 17:29	06:15 18:33	05:50 20:41	04:42 21:45	04:15 22:21	04:49 21:55	05:53 20:44	06:59 19:18	08:04 17:56	08:15 15:49	08:59 15:30
23	08:38 16:19	07:29 17:32	06:13 18:35	05:48 20:43	04:40 21:47	04:15 22:21	04:51 21:53	05:55 20:41	07:01 19:15	08:07 17:54	08:17 15:48	08:59 15:31
24	08:36 16:21	07:26 17:34	06:10 18:37	05:45 20:46	04:38 21:49	04:15 22:21	04:53 21:51	05:57 20:39	07:03 19:13	08:09 17:51	08:19 15:46	09:00 15:31
25	08:34 16:24	07:24 17:36	06:07 18:39	05:42 20:48	04:37 21:51	04:16 22:21	04:55 21:49	06:00 20:36	07:05 19:10	07:11 16:49	08:21 15:45	09:00 15:32
26	08:32 16:26	07:21 17:39	06:04 18:42	05:40 20:50	04:35 21:52	04:16 22:21	04:57 21:47	06:02 20:33	07:07 19:07	07:13 16:46	08:23 15:43	09:00 15:33
27	08:30 16:28	07:18 17:41	06:01 18:44	05:37 20:52	04:34 21:54	04:17 22:21	04:59 21:45	06:04 20:31	07:10 19:04	07:16 16:44	08:25 15:42	09:00 15:34
28	08:29 16:30	07:16 17:43	05:59 18:46	05:35 20:54	04:32 21:56	04:17 22:21	05:01 21:43	06:06 20:28	07:12 19:01	07:18 16:41	08:27 15:41	09:00 15:34
29	08:27 16:33		06:56 19:48	05:32 20:57	04:31 21:58	04:18 22:21	05:03 21:41	06:08 20:25	07:14 18:59	07:20 16:39	08:29 15:39	09:00 15:35
30	08:25 16:35		06:53 19:50	05:30 20:59	04:29 21:59	04:19 22:20	05:05 21:39	06:10 20:22	07:16 18:56	07:23 16:36	08:31 15:38	09:00 15:36
31	08:23 16:37		06:50 19:53		04:28 22:01		05:07 21:37	06:12 20:20		07:25 16:34		09:00 15:38
Potential sun hours	227	262	365	429	515	539	538	474	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Liepkalni - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (796)
 Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January		February		March		April		May		June	
1	09:00	08:21			07:14	09:36 (7)	06:48		10:38 (7)	05:28	07:11 (8)	04:27
	15:40	16:40			17:46	91 11:07 (7)	19:55	59	11:37 (7)	21:01	33 07:44 (8)	22:03
2	09:00	08:19			07:11	07:38 (13)	06:45		07:34 (8)	05:25	05:55 (9)	04:26
	15:41	16:42			17:48	93 11:07 (7)	19:57	57	11:34 (7)	21:04	41 07:41 (8)	22:04
3	09:00	08:17			07:08	07:35 (13)	06:42		07:26 (8)	05:23	05:52 (9)	04:25
	15:42	16:45			17:51	98 11:07 (7)	20:00	66	11:30 (7)	21:06	42 07:39 (8)	22:06
4	08:59	08:15			07:05	07:32 (13)	06:39		07:23 (8)	05:21	05:51 (9)	04:23
	15:44	16:47			17:53	103 11:07 (7)	20:02	67	11:27 (7)	21:08	41 07:37 (8)	22:07
5	08:59	08:13			07:03	07:30 (13)	06:37		07:20 (8)	05:18	05:50 (9)	04:22
	15:45	16:49			17:55	107 11:08 (7)	20:04	63	11:21 (7)	21:10	38 07:35 (8)	22:08
6	08:58	08:10			07:00	07:27 (13)	06:34		07:18 (8)	05:16	05:48 (9)	04:21
	15:47	16:52			17:57	109 11:07 (7)	20:06	56	11:15 (7)	21:12	33 07:30 (8)	22:10
7	08:57	08:08			06:57	07:24 (13)	06:31		07:16 (8)	05:13	05:48 (9)	04:20
	15:48	16:54	15	10:14 (7)	18:00	112 11:07 (7)	20:08	35	07:51 (8)	21:14	26 06:14 (9)	22:11
8	08:57	08:06			06:55	07:23 (13)	06:28		06:55 (3)	05:11	05:47 (9)	04:20
	15:50	17:06	27	10:36 (7)	18:02	114 11:07 (7)	20:11	39	07:53 (8)	21:17	28 06:15 (9)	22:12
9	08:56	08:04			06:52	07:23 (13)	06:26		06:52 (3)	05:09	05:45 (9)	04:19
	15:52	16:59	34	10:39 (7)	18:04	113 11:07 (7)	20:13	46	07:53 (8)	21:19	30 06:15 (9)	22:13
10	08:55	08:01			06:49	07:25 (13)	06:23		06:49 (3)	05:07	05:45 (9)	04:18
	15:53	17:01	41	10:43 (7)	18:06	111 11:07 (7)	20:15	52	07:53 (8)	21:21	30 06:15 (9)	22:14
11	08:54	07:59			06:46	07:13 (10)	06:20		06:47 (3)	05:04	05:44 (9)	04:18
	15:55	17:04	46	10:45 (7)	18:09	111 11:07 (7)	20:17	56	07:54 (8)	21:23	32 06:16 (9)	22:15
12	08:53	07:57			06:44	07:10 (10)	06:17		06:44 (3)	05:02	05:45 (9)	04:17
	15:57	17:06	51	10:47 (7)	18:11	113 11:06 (7)	20:19	60	07:54 (8)	21:25	32 06:17 (9)	22:16
13	08:52	07:54			06:41	07:07 (10)	06:15		06:41 (3)	05:00	05:45 (9)	04:16
	15:59	17:08	55	10:50 (7)	18:13	110 11:06 (7)	20:22	64	07:54 (8)	21:27	32 06:17 (9)	22:17
14	08:51	07:52			06:38	07:04 (10)	06:12		06:40 (3)	04:58	05:44 (9)	04:16
	16:01	17:11	58	10:51 (7)	18:15	114 11:05 (7)	20:24	67	07:55 (8)	21:29	33 06:17 (9)	22:18
15	08:50	07:49			06:35	07:02 (10)	06:09		06:39 (3)	04:56	05:44 (9)	04:16
	16:03	17:13	63	10:54 (7)	18:18	117 11:05 (7)	20:26	68	07:55 (8)	21:31	33 06:17 (9)	22:19
16	08:48	07:47			06:33	07:01 (10)	06:07		06:38 (3)	04:54	05:44 (9)	04:15
	16:05	17:16	66	10:55 (7)	18:20	117 11:04 (7)	20:28	68	07:54 (8)	21:34	33 06:17 (9)	22:19
17	08:47	07:45			06:30	07:00 (10)	06:04		06:39 (3)	04:52	05:44 (9)	04:15
	16:07	17:18	68	10:56 (7)	18:22	117 11:03 (7)	20:30	68	07:55 (8)	21:36	32 06:16 (9)	22:20
18	08:46	07:42			06:27	06:59 (10)	06:01		06:39 (3)	04:50	05:45 (9)	04:15
	16:09	17:20	71	10:58 (7)	18:24	118 11:02 (7)	20:33	67	07:54 (8)	21:38	32 06:17 (9)	22:20
19	08:44	07:40			06:24	06:50 (14)	05:59		06:40 (3)	04:48	05:45 (9)	04:15
	16:11	17:23	74	10:59 (7)	18:26	118 11:01 (7)	20:35	65	07:54 (8)	21:40	31 06:16 (9)	22:21
20	08:43	07:37			06:21	06:47 (14)	05:56		06:41 (3)	04:46	05:44 (9)	04:15
	16:13	17:25	76	11:00 (7)	18:29	121 11:00 (7)	20:37	61	07:53 (8)	21:42	32 06:16 (9)	22:21
21	08:41	07:34			06:19	06:45 (14)	05:53		06:43 (3)	04:44	05:18 (1)	04:15
	16:15	17:27	78	11:01 (7)	18:31	122 10:59 (7)	20:39	57	07:53 (8)	21:43	33 06:16 (9)	22:21
22	08:40	07:32			06:16	06:42 (14)	05:51		07:06 (8)	04:42	05:16 (1)	04:15
	16:17	17:30	80	11:02 (7)	18:33	123 10:58 (7)	20:41	46	07:52 (8)	21:45	35 06:15 (9)	22:22
23	08:38	07:29			06:13	06:39 (14)	05:48		07:06 (8)	04:41	05:15 (1)	04:15
	16:19	17:32	83	11:03 (7)	18:35	121 10:56 (7)	20:44	46	07:52 (8)	21:47	38 06:16 (9)	22:22
24	08:36	07:27			06:10	06:36 (14)	05:45		07:06 (8)	04:39	05:13 (1)	04:16
	16:22	17:34	84	11:04 (7)	18:38	120 10:55 (7)	20:46	45	07:51 (8)	21:49	39 06:15 (9)	22:22
25	08:34	07:24			06:07	06:35 (14)	05:43		07:07 (8)	04:37	05:12 (1)	04:16
	16:24	17:37	85	11:04 (7)	18:40	115 10:53 (7)	20:48	44	07:51 (8)	21:51	40 06:15 (9)	22:22
26	08:33	07:21			06:05	06:36 (14)	05:40		07:07 (8)	04:36	05:10 (1)	04:17
	16:26	17:39	87	11:05 (7)	18:42	106 10:51 (7)	20:50	42	07:49 (8)	21:53	41 06:14 (9)	22:22
27	08:31	07:19			06:02	06:37 (14)	05:38		07:08 (8)	04:34	05:09 (1)	04:17
	16:28	17:41	88	11:05 (7)	18:44	90 10:50 (7)	20:53	40	07:48 (8)	21:54	42 06:14 (9)	22:21
28	08:29	07:16			05:59	06:38 (14)	05:35		07:09 (8)	04:32	05:08 (1)	04:18
	16:31	17:44	89	11:06 (7)	18:46	85 10:48 (7)	20:55	39	07:48 (8)	21:56	41 06:13 (9)	22:21
29	08:27				06:56	10:34 (7)	05:33		07:09 (8)	04:31	05:07 (1)	04:18
	16:33				19:49	71 11:45 (7)	20:57	37	07:46 (8)	21:58	42 06:13 (9)	22:21
30	08:25				06:53	10:35 (7)	05:30		07:10 (8)	04:30	05:06 (1)	04:19
	16:35				19:51	67 11:42 (7)	20:59	35	07:45 (8)	21:59	42 06:13 (9)	22:20
31	08:23				06:51	10:37 (7)				04:28	05:04 (1)	
	16:38				19:53	64 11:41 (7)				22:01	42 06:11 (9)	
Potential sun hours	227	262			365		429		515		539	
Total, worst case		1419			3291		1615		1099		715	
Sun reduction		0.19			0.40		0.43		0.58		0.56	
Oper. time red.		1.00			1.00		1.00		1.00		1.00	
Wind dir. red.		1.00			1.00		1.00		1.00		1.00	
Total reduction		0.19			0.40		0.43		0.58		0.56	
Total, real		276			1326		687		639		400	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Liepkalni - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (796)
 Sunshine probability S (Average daily sunshine hours) []

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
 0.80 1.82 4.75 6.09 9.67 10.05 8.16 7.72 5.94 2.93 0.63 0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	July		August		September		October		November		December	
1	04:20	05:11 (1)	05:09	05:55 (9)	06:15	06:46 (3)	07:18	07:48 (10)	07:28	09:31 (7)	08:33	
2	22:20	21 05:32 (1)	21:35	32 06:27 (9)	20:17	56 07:53 (8)	18:53	110 11:45 (7)	16:32	40 10:11 (7)	15:37	
3	04:21	05:11 (1)	05:11	05:56 (9)	06:17	06:48 (3)	07:21	07:50 (10)	07:30	09:35 (7)	08:35	
4	22:19	21 05:32 (1)	21:33	31 06:27 (9)	20:15	52 07:52 (8)	18:51	113 11:45 (7)	16:30	33 10:08 (7)	15:36	
5	04:22	05:11 (1)	05:13	05:55 (9)	06:19	06:50 (3)	07:23	08:02 (13)	07:32	09:39 (7)	08:37	
6	22:19	22 05:33 (1)	21:31	30 06:25 (9)	20:12	46 07:51 (8)	18:48	110 11:44 (7)	16:27	26 10:05 (7)	15:35	
7	04:23	05:11 (1)	05:15	05:56 (9)	06:21	06:52 (3)	07:25	08:02 (13)	07:34	09:45 (7)	08:38	
8	22:18	22 05:33 (1)	21:29	29 06:25 (9)	20:09	39 07:50 (8)	18:45	112 11:45 (7)	16:25	13 09:58 (7)	15:34	
9	04:24	05:11 (1)	05:17	05:56 (9)	06:23	07:13 (8)	07:27	08:01 (13)	07:37		08:40	
10	22:17	22 05:33 (1)	21:26	28 06:24 (9)	20:06	35 07:48 (8)	18:42	113 11:44 (7)	16:23		15:34	
11	04:25	05:11 (1)	05:20	05:57 (9)	06:26	07:14 (8)	07:29	08:00 (13)	07:39		08:42	
12	22:17	28 06:11 (9)	21:24	27 06:24 (9)	20:04	54 11:10 (7)	18:40	114 11:44 (7)	16:21		15:33	
13	04:26	05:12 (1)	05:22	05:58 (9)	06:28	07:15 (8)	07:31	08:01 (13)	07:41		08:43	
14	22:16	31 06:13 (9)	21:22	35 07:41 (8)	20:01	63 11:16 (7)	18:37	111 11:43 (7)	16:18		15:32	
15	04:27	05:12 (1)	05:24	05:59 (9)	06:30	07:17 (8)	07:34	08:04 (13)	07:44		08:45	
16	22:15	34 06:15 (9)	21:19	40 07:45 (8)	19:58	66 11:20 (7)	18:34	108 11:43 (7)	16:16		15:31	
17	04:29	05:12 (1)	05:26	06:01 (9)	06:32	07:20 (8)	07:36	08:06 (13)	07:46		08:46	
18	22:14	36 06:16 (9)	21:17	42 07:47 (8)	19:55	67 11:24 (7)	18:31	104 11:42 (7)	16:14		15:31	
19	04:30	05:11 (1)	05:28	06:02 (9)	06:34	07:25 (8)	07:38	08:08 (13)	07:48		08:47	
20	22:13	39 06:17 (9)	21:15	42 07:49 (8)	19:52	60 11:27 (7)	18:29	100 11:41 (7)	16:12		15:30	
21	04:32	05:12 (1)	05:30	06:05 (9)	06:36	07:26 (8)	07:40	08:10 (13)	07:51		08:49	
22	22:11	41 06:19 (9)	21:12	40 07:51 (8)	19:50	59 11:29 (7)	18:26	95 11:40 (7)	16:10		15:30	
23	04:33	05:12 (1)	05:32	07:19 (8)	06:38	07:28 (8)	07:42	10:09 (7)	07:53		08:50	
24	22:10	41 06:19 (9)	21:10	33 07:52 (8)	19:47	64 11:32 (7)	18:23	91 11:40 (7)	16:08		15:30	
25	04:34	05:13 (1)	05:34	07:18 (8)	06:40	07:26 (8)	07:45	10:09 (7)	07:55		08:51	
26	22:09	42 06:20 (9)	21:07	36 07:54 (8)	19:44	67 11:33 (7)	18:21	90 11:39 (7)	16:06		15:29	
27	04:36	05:15 (1)	05:37	07:17 (8)	06:42	07:24 (7)	07:47	10:09 (7)	07:57		08:52	
28	22:08	42 06:21 (9)	21:05	38 07:55 (8)	19:41	71 11:35 (7)	18:18	89 11:38 (7)	16:04		15:29	
29	04:38	05:16 (1)	05:39	07:16 (8)	06:45	07:28 (14)	07:49	10:10 (7)	08:00		08:54	
30	22:06	42 06:22 (9)	21:02	39 07:55 (8)	19:38	82 11:37 (7)	18:15	88 11:38 (7)	16:02		15:29	
31	04:39	05:18 (1)	05:41	07:15 (8)	06:47	07:26 (14)	07:51	10:10 (7)	08:02		08:55	
32	22:05	42 06:23 (9)	21:00	41 07:56 (8)	19:36	89 11:38 (7)	18:12	87 11:37 (7)	16:00		15:29	
33	04:41	05:19 (1)	05:43	07:14 (8)	06:49	07:24 (14)	07:53	10:10 (7)	08:04		08:55	
34	22:03	41 06:23 (9)	20:57	43 07:57 (8)	19:33	102 11:39 (7)	18:10	85 11:35 (7)	15:58		15:29	
35	04:43	05:21 (1)	05:45	07:13 (8)	06:51	07:23 (14)	07:56	10:12 (7)	08:06		08:56	
36	22:02	40 06:24 (9)	20:55	44 07:57 (8)	19:30	112 11:40 (7)	18:07	83 11:35 (7)	15:56		15:29	
37	04:44	05:22 (1)	05:47	07:13 (8)	06:53	07:22 (14)	07:58	10:12 (7)	08:08		08:57	
38	22:00	39 06:24 (9)	20:52	45 07:58 (8)	19:27	119 11:41 (7)	18:05	81 11:33 (7)	15:55		15:29	
39	04:46	05:24 (1)	05:49	07:12 (8)	06:55	07:25 (14)	08:00	10:13 (7)	08:11		08:58	
40	21:59	38 06:25 (9)	20:50	46 07:58 (8)	19:24	122 11:43 (7)	18:02	80 11:33 (7)	15:53		15:30	
41	04:48	05:25 (1)	05:51	06:51 (3)	06:57	07:27 (14)	08:02	10:14 (7)	08:13		08:58	
42	21:57	36 06:25 (9)	20:47	51 07:58 (8)	19:22	121 11:43 (7)	17:59	77 11:31 (7)	15:51		15:30	
43	04:50	05:27 (1)	05:54	06:47 (3)	06:59	07:29 (14)	08:05	10:14 (7)	08:15		08:59	
44	21:55	35 06:26 (9)	20:44	58 07:58 (8)	19:19	122 11:44 (7)	17:57	75 11:29 (7)	15:50		15:31	
45	04:52	05:29 (1)	05:56	06:45 (3)	07:01	07:31 (14)	08:07	10:16 (7)	08:17		09:00	
46	21:53	32 06:27 (9)	20:42	63 07:58 (8)	19:16	121 11:44 (7)	17:54	73 11:29 (7)	15:48		15:31	
47	04:53	05:55 (9)	05:58	06:44 (3)	07:04	07:33 (14)	08:09	10:16 (7)	08:19		09:00	
48	21:51	31 06:26 (9)	20:39	65 07:58 (8)	19:13	119 11:45 (7)	17:52	71 11:27 (7)	15:46		15:32	
49	04:55	05:55 (9)	06:00	06:43 (3)	07:06	07:42 (10)	07:11	09:18 (7)	08:21		09:00	
50	21:50	32 06:27 (9)	20:36	67 07:58 (8)	19:10	118 11:45 (7)	16:49	68 10:26 (7)	15:45		15:32	
51	04:57	05:55 (9)	06:02	06:42 (3)	07:08	07:42 (10)	07:14	09:19 (7)	08:23		09:01	
52	21:48	32 06:27 (9)	20:34	67 07:57 (8)	19:07	118 11:45 (7)	16:47	65 10:24 (7)	15:44		15:33	
53	04:59	05:55 (9)	06:04	06:41 (3)	07:10	07:41 (10)	07:16	09:21 (7)	08:25		09:01	
54	21:46	32 06:27 (9)	20:31	69 07:57 (8)	19:05	118 11:45 (7)	16:44	62 10:23 (7)	15:42		15:34	
55	05:01	05:54 (9)	06:06	06:41 (3)	07:12	07:43 (10)	07:18	09:22 (7)	08:27		09:01	
56	21:44	33 06:27 (9)	20:28	69 07:57 (8)	19:02	117 11:46 (7)	16:42	58 10:20 (7)	15:41		15:35	
57	05:03	05:54 (9)	06:09	06:40 (3)	07:14	07:44 (10)	07:21	09:25 (7)	08:29		09:01	
58	21:42	33 06:27 (9)	20:26	68 07:56 (8)	18:59	116 11:46 (7)	16:39	54 10:19 (7)	15:40		15:36	
59	05:05	05:55 (9)	06:11	06:42 (3)	07:16	07:46 (10)	07:23	09:26 (7)	08:31		09:01	
60	21:40	32 06:27 (9)	20:23	64 07:55 (8)	18:56	111 11:45 (7)	16:37	50 10:16 (7)	15:38		15:37	
61	05:07	05:55 (9)	06:13	06:44 (3)			07:25	09:29 (7)			09:01	
62	21:37	32 06:27 (9)	20:20	60 07:54 (8)			16:34	45 10:14 (7)			15:38	
Potential sun hours	538		474		386		321		241		207	
Total, worst case	1044		1442		2606		2662		112			
Sun reduction	0.47		0.50		0.46		0.28		0.08			
Oper. time red.	1.00		1.00		1.00		1.00		1.00			
Wind dir. red.	1.00		1.00		1.00		1.00		1.00			
Total reduction	0.47		0.50		0.46		0.28		0.08			
Total, real	491		727		1204		753		9			

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Last time (hh:mm) with flicker	(WTG causing flicker last time)

Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Lukstini (94880090014001) - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (775)

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January			February			March			April			May			June		
1	09:01		09:43 (7)	08:21		09:53 (7)	07:14		08:08 (6)	06:48		07:14 (1)	05:28		04:27			
	15:40	6	09:49 (7)	16:40	5	09:58 (7)	17:46	29	08:37 (6)	19:55	33	07:51 (5)	21:01		22:03			
2	09:00		09:43 (7)	08:19			07:11		08:09 (6)	06:45		07:11 (1)	05:25		04:26			
	15:41	8	09:51 (7)	16:42			17:48	27	08:36 (6)	19:57	34	07:49 (5)	21:04		22:04			
3	09:00		09:42 (7)	08:17			07:08		08:09 (6)	06:42		07:08 (1)	05:23		04:25			
	15:42	10	09:52 (7)	16:45			17:51	25	08:34 (6)	20:00	33	07:47 (5)	21:06		22:06			
4	08:59		09:41 (7)	08:15			07:06		08:11 (6)	06:39		07:07 (1)	05:21		04:23			
	15:44	12	09:53 (7)	16:47			17:53	23	08:34 (6)	20:02	31	07:46 (5)	21:08		22:07			
5	08:59		09:40 (7)	08:13			07:03		08:12 (6)	06:37		07:07 (1)	05:18		04:22			
	15:45	14	09:54 (7)	16:49			17:55	20	08:32 (6)	20:04	25	07:43 (5)	21:10		22:08			
6	08:58		09:39 (7)	08:10			07:00		08:13 (6)	06:34		07:08 (1)	05:16		04:21			
	15:47	16	09:55 (7)	16:52			17:57	16	08:29 (6)	20:06	14	07:22 (1)	21:12		22:10			
7	08:58		09:38 (7)	08:08			06:57		07:24 (9)	06:31		07:08 (1)	05:13		04:20			
	15:48	18	09:56 (7)	16:54			18:00	13	08:25 (6)	20:08	11	07:19 (1)	21:15		22:11			
8	08:57		09:38 (7)	08:06			06:55		07:21 (9)	06:28		07:11 (1)	05:11		04:20			
	15:50	19	09:57 (7)	16:57			18:02	9	07:30 (9)	20:11	6	07:17 (1)	21:17		22:12			
9	08:56		09:38 (7)	08:04			06:52		07:18 (9)	06:26			05:09		04:19			
	15:51	20	09:58 (7)	16:59			18:04	12	07:30 (9)	20:13			21:19		22:13			
10	08:55		09:38 (7)	08:01			06:49		07:16 (9)	06:23			05:07		04:18			
	15:53	21	09:59 (7)	17:01	1	08:33 (8)	18:06	16	07:32 (9)	20:15			21:21		22:14			
11	08:54		09:38 (7)	07:59			06:46		07:13 (9)	06:20			05:04		04:17			
	15:55	22	10:00 (7)	17:04	7	08:36 (8)	18:09	19	07:32 (9)	20:17			21:23		22:15			
12	08:53		09:38 (7)	07:57			06:44		07:11 (9)	06:17			05:02		04:17			
	15:57	22	10:00 (7)	17:06	11	08:38 (8)	18:11	20	07:31 (9)	20:19			21:25		22:16			
13	08:52		09:38 (7)	07:54			06:41		07:11 (9)	06:15			05:00		04:16			
	15:59	24	10:02 (7)	17:09	15	08:39 (8)	18:13	20	07:31 (9)	20:22			21:27		22:17			
14	08:51		09:38 (7)	07:52			06:38		07:10 (9)	06:12			04:58		04:16			
	16:01	24	10:02 (7)	17:11	18	08:39 (8)	18:15	20	07:30 (9)	20:24			21:29		22:18			
15	08:50		09:38 (7)	07:50			06:35		07:12 (9)	06:09			04:56		04:16			
	16:03	25	10:03 (7)	17:13	20	08:40 (8)	18:18	18	07:30 (9)	20:26			21:32		22:19			
16	08:48		09:38 (7)	07:47			06:33		07:12 (9)	06:07			04:54		04:15			
	16:05	25	10:03 (7)	17:16	21	08:40 (8)	18:20	17	07:29 (9)	20:28			21:34		22:19			
17	08:47		09:38 (7)	07:45			06:30		07:13 (9)	06:04			04:52		04:15			
	16:07	26	10:04 (7)	17:18	24	08:40 (8)	18:22	14	07:27 (9)	20:30			21:36		22:20			
18	08:46		09:39 (7)	07:42			06:27		07:15 (9)	06:01			04:50		04:15			
	16:09	26	10:05 (7)	17:20	27	08:41 (8)	18:24	9	07:24 (9)	20:33			21:38		22:20			
19	08:44		09:39 (7)	07:40			06:24			05:59			04:48		04:15			
	16:11	26	10:05 (7)	17:23	28	08:40 (8)	18:27			20:35			21:40		22:21			
20	08:43		09:39 (7)	07:37			06:21			05:56			04:46		04:15			
	16:13	26	10:05 (7)	17:25	29	08:40 (8)	18:29			20:37			21:42		22:21			
21	08:41		09:39 (7)	07:35			06:19			05:53			04:44		04:15			
	16:15	26	10:05 (7)	17:27	30	08:40 (8)	18:31			20:39			21:44		22:21			
22	08:40		09:40 (7)	07:32			06:16		06:42 (5)	05:51			04:42		04:15			
	16:17	26	10:06 (7)	17:30	29	08:38 (8)	18:33	7	06:49 (5)	20:42			21:45		22:22			
23	08:38		09:40 (7)	07:29			06:13		06:39 (5)	05:48			04:41		04:15			
	16:19	26	10:06 (7)	17:32	29	08:37 (6)	18:35	11	06:50 (5)	20:44			21:47		22:22			
24	08:36		09:41 (7)	07:27			06:10		06:36 (5)	05:45			04:39		04:16			
	16:22	25	10:06 (7)	17:34	29	08:38 (6)	18:38	15	06:51 (5)	20:46			21:49		22:22			
25	08:35		09:41 (7)	07:24			06:07		06:33 (5)	05:43			04:37		04:16			
	16:24	25	10:06 (7)	17:37	30	08:38 (6)	18:40	19	06:52 (5)	20:48			21:51		22:22			
26	08:33		09:42 (7)	07:22			06:05		06:31 (5)	05:40			04:36		04:17			
	16:26	23	10:05 (7)	17:39	30	08:38 (6)	18:42	22	06:53 (5)	20:50			21:53		22:22			
27	08:31		09:43 (7)	07:19			06:02		06:30 (5)	05:38			04:34		04:17			
	16:28	22	10:05 (7)	17:41	30	08:37 (6)	18:44	23	06:53 (5)	20:53			21:55		22:22			
28	08:29		09:44 (7)	07:16			05:59		06:29 (5)	05:35			04:32		04:18			
	16:31	21	10:05 (7)	17:44	30	08:38 (6)	18:46	24	06:53 (5)	20:55			21:56		22:21			
29	08:27		09:45 (7)				06:56		07:28 (5)	05:33			04:31		04:18			
	16:33	18	10:03 (7)				19:49	24	07:52 (5)	20:57			21:58		22:21			
30	08:25		09:47 (7)				06:53		07:19 (1)	05:30			04:30		04:19			
	16:35	15	10:02 (7)				19:51	28	07:52 (5)	20:59			22:00		22:21			
31	08:23		09:49 (7)				06:51		07:17 (1)				04:28					
	16:38	12	10:01 (7)				19:53	31	07:52 (5)				22:01					
Potential sun hours	227			262			365			429			515		539			
Total, worst case		629			443		531			187								
Sun reduction		0.11			0.19		0.40			0.43								
Oper. time red.		1.00			1.00		1.00			1.00								
Wind dir. red.		1.00			1.00		1.00			1.00								
Total reduction		0.11			0.19		0.40			0.43								
Total, real		69			86		214			80								

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Lukstini (94880090014001) - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (775)

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	July	August	September	October	November	December
1	04:20	05:09	06:15	07:19	07:50 (9)	07:28
	22:20	21:35	20:17	18:54	20 08:10 (9)	16:32
2	04:21	05:11	06:17	07:21	07:50 (9)	07:30
	22:20	21:33	20:15	18:51	20 08:10 (9)	16:30
3	04:22	05:13	06:19	07:23	07:52 (9)	07:32
	22:19	21:31	20:12	18:48	17 08:09 (9)	16:27
4	04:23	05:15	06:21	07:25	07:55 (9)	07:35
	22:18	21:29	20:09	5 07:14 (1)	18:45	14 08:09 (9)
5	04:24	05:17	06:23	07:06 (1)	07:27	07:57 (9)
	22:18	21:27	20:06	11 07:17 (1)	18:42	10 08:07 (9)
6	04:25	05:20	06:26	07:04 (1)	07:29	07:59 (9)
	22:17	21:24	20:04	14 07:18 (1)	18:40	6 08:05 (9)
7	04:26	05:22	06:28	07:02 (1)	07:31	08:01 (9)
	22:16	21:22	20:01	25 07:38 (5)	18:37	15 09:03 (6)
8	04:27	05:24	06:30	07:01 (1)	07:34	08:48 (6)
	22:15	21:20	19:58	31 07:40 (5)	18:34	18 09:06 (6)
9	04:29	05:26	06:32	07:02 (1)	07:36	08:46 (6)
	22:14	21:17	19:55	34 07:42 (5)	18:31	21 09:07 (6)
10	04:30	05:28	06:34	07:04 (1)	07:38	08:44 (6)
	22:13	21:15	19:52	34 07:42 (5)	18:29	24 09:08 (6)
11	04:31	05:30	06:36	07:06 (1)	07:40	08:43 (6)
	22:12	21:12	19:50	33 07:43 (5)	18:26	27 09:10 (6)
12	04:33	05:32	06:38	07:08 (1)	07:42	08:42 (6)
	22:10	21:10	19:47	31 07:43 (5)	18:23	28 09:10 (6)
13	04:34	05:34	06:40	07:10 (1)	07:45	08:41 (6)
	22:09	21:07	19:44	29 07:43 (5)	18:21	29 09:10 (6)
14	04:36	05:37	06:42	07:12 (1)	07:47	08:40 (6)
	22:08	21:05	19:41	25 07:43 (5)	18:18	30 09:10 (6)
15	04:38	05:39	06:45	07:18 (5)	07:49	08:40 (6)
	22:06	21:02	19:38	24 07:42 (5)	18:15	30 09:10 (6)
16	04:39	05:41	06:47	07:18 (5)	07:51	08:40 (6)
	22:05	21:00	19:36	24 07:42 (5)	18:13	30 09:10 (6)
17	04:41	05:43	06:49	07:18 (5)	07:54	08:40 (6)
	22:03	20:57	19:33	23 07:41 (5)	18:10	30 09:10 (6)
18	04:43	05:45	06:51	07:20 (5)	07:56	08:40 (6)
	22:02	20:55	19:30	20 07:40 (5)	18:07	29 09:09 (6)
19	04:44	05:47	06:53	07:23 (5)	07:58	08:40 (6)
	22:00	20:52	19:27	16 07:39 (5)	18:05	28 09:08 (6)
20	04:46	05:49	06:55	07:25 (5)	08:00	08:41 (6)
	21:59	20:50	19:24	12 07:37 (5)	18:02	29 09:10 (8)
21	04:48	05:51	06:57	07:27 (5)	08:02	08:41 (6)
	21:57	20:47	19:22	8 07:35 (5)	17:59	29 09:10 (8)
22	04:50	05:54	06:59	07:29 (5)	08:05	08:42 (6)
	21:55	20:44	19:19	2 07:31 (5)	17:57	29 09:11 (8)
23	04:51	05:56	07:01		08:07	08:43 (6)
	21:53	20:42	19:16		17:54	28 09:11 (8)
24	04:53	05:58	07:04		08:09	08:44 (6)
	21:52	20:39	19:13		17:52	26 09:10 (8)
25	04:55	06:00	07:06	07:58 (9)	07:12	07:47 (6)
	21:50	20:36	19:10	8 08:06 (9)	16:49	24 08:11 (8)
26	04:57	06:02	07:08	07:55 (9)	07:14	07:48 (8)
	21:48	20:34	19:07	13 08:08 (9)	16:47	22 08:10 (8)
27	04:59	06:04	07:10	07:53 (9)	07:16	07:49 (8)
	21:46	20:31	19:05	16 08:09 (9)	16:44	21 08:10 (8)
28	05:01	06:06	07:12	07:53 (9)	07:18	07:51 (8)
	21:44	20:28	19:02	18 08:11 (9)	16:42	17 08:08 (8)
29	05:03	06:09	07:14	07:52 (9)	07:21	07:54 (8)
	21:42	20:26	18:59	19 08:11 (9)	16:39	14 08:08 (8)
30	05:05	06:11	07:16	07:51 (9)	07:23	07:56 (8)
	21:40	20:23	18:56	20 08:11 (9)	16:37	10 08:06 (8)
31	05:07	06:13			07:25	07:59 (8)
	21:38	20:20			16:34	6 08:05 (8)
Potential sun hours	538	474	386	321	241	207
Total, worst case			495	681	472	173
Sun reduction			0.46	0.28	0.08	0.06
Oper. time red.			1.00	1.00	1.00	1.00
Wind dir. red.			1.00	1.00	1.00	1.00
Total reduction			0.46	0.28	0.08	0.06
Total, real			229	193	37	11

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Lukstini (94880090014002) - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (778)

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January			February			March			April			May			June		
1	09:01		09:46 (7)	08:21			07:14		08:22 (6)	06:48		07:14 (1)	05:28			04:27		
	15:40	19	10:05 (7)	16:40			17:46	23	08:45 (6)	19:55	35	07:56 (5)	21:01			22:03		
2	09:00		09:46 (7)	08:19			07:11		08:23 (6)	06:45		07:11 (1)	05:25			04:26		
	15:41	21	10:07 (7)	16:42			17:48	20	08:43 (6)	19:57	35	07:54 (5)	21:04			22:04		
3	09:00		09:46 (7)	08:17			07:08		08:25 (6)	06:42		07:11 (1)	05:23			04:25		
	15:42	21	10:07 (7)	16:45			17:51	16	08:41 (6)	20:00	29	07:51 (5)	21:06			22:06		
4	08:59		09:46 (7)	08:15			07:06		07:33 (9)	06:39		07:12 (1)	05:21			04:23		
	15:44	22	10:08 (7)	16:47			17:53	10	08:38 (6)	20:02	16	07:28 (1)	21:08			22:07		
5	08:59		09:46 (7)	08:13			07:03		07:30 (9)	06:37		07:12 (1)	05:18			04:22		
	15:45	22	10:08 (7)	16:49			17:55	6	07:36 (9)	20:04	14	07:26 (1)	21:10			22:08		
6	08:58		09:46 (7)	08:10			07:00		07:27 (9)	06:34		07:13 (1)	05:16			04:21		
	15:47	23	10:09 (7)	16:52			17:57	10	07:37 (9)	20:06	11	07:24 (1)	21:12			22:10		
7	08:58		09:46 (7)	08:08			06:57		07:24 (9)	06:31		07:15 (1)	05:13			04:20		
	15:48	24	10:10 (7)	16:54	2	08:41 (8)	18:00	14	07:38 (9)	20:08	5	07:20 (1)	21:15			22:11		
8	08:57		09:47 (7)	08:06			08:37 (8)		06:55				05:11			04:20		
	15:50	24	10:11 (7)	16:57	8	08:45 (8)	18:02	17	07:38 (9)	20:11			21:17			22:12		
9	08:56		09:47 (7)	08:04			08:34 (8)		06:52				05:09			04:19		
	15:51	24	10:11 (7)	16:59	12	08:46 (8)	18:04	20	07:38 (9)	20:13			21:19			22:13		
10	08:55		09:47 (7)	08:01			08:32 (8)		06:49				05:07			04:18		
	15:53	25	10:12 (7)	17:01	16	08:48 (8)	18:06	21	07:39 (9)	20:15			21:21			22:14		
11	08:54		09:48 (7)	07:59			08:29 (8)		06:46				05:04			04:17		
	15:55	25	10:13 (7)	17:04	19	08:48 (8)	18:09	20	07:38 (9)	20:17			21:23			22:15		
12	08:53		09:47 (7)	07:57			08:28 (8)		06:44				05:02			04:17		
	15:57	26	10:13 (7)	17:06	21	08:49 (8)	18:11	21	07:38 (9)	20:19			21:25			22:16		
13	08:52		09:48 (7)	07:54			08:27 (8)		06:41				05:00			04:16		
	15:59	26	10:14 (7)	17:09	22	08:49 (8)	18:13	19	07:37 (9)	20:22			21:27			22:17		
14	08:51		09:48 (7)	07:52			08:25 (6)		06:38				04:58			04:16		
	16:01	26	10:14 (7)	17:11	24	08:49 (8)	18:15	17	07:35 (9)	20:24			21:29			22:18		
15	08:50		09:49 (7)	07:50			08:24 (6)		06:35				04:56			04:16		
	16:03	26	10:15 (7)	17:13	26	08:50 (8)	18:18	15	07:35 (9)	20:26			21:32			22:19		
16	08:48		09:49 (7)	07:47			08:23 (6)		06:33				04:54			04:15		
	16:05	26	10:15 (7)	17:16	26	08:49 (8)	18:20	11	07:32 (9)	20:28			21:34			22:19		
17	08:47		09:49 (7)	07:45			08:21 (6)		06:30				04:52			04:15		
	16:07	26	10:15 (7)	17:18	28	08:49 (8)	18:22			20:30			21:36			22:20		
18	08:46		09:50 (7)	07:42			08:21 (6)		06:27				04:50			04:15		
	16:09	26	10:16 (7)	17:20	28	08:49 (6)	18:24			20:33			21:38			22:20		
19	08:44		09:50 (7)	07:40			08:20 (6)		06:24		06:50 (5)		05:59			04:15		
	16:11	26	10:16 (7)	17:23	30	08:50 (6)	18:27	1	06:51 (5)	20:35			21:40			22:21		
20	08:43		09:51 (7)	07:37			08:19 (6)		06:21				04:46			04:15		
	16:13	25	10:16 (7)	17:25	31	08:50 (6)	18:29	8	06:55 (5)	20:37			21:42			22:21		
21	08:41		09:51 (7)	07:35			08:20 (6)		06:19				04:44			04:15		
	16:15	25	10:16 (7)	17:27	30	08:50 (6)	18:31	13	06:58 (5)	20:39			21:44			22:21		
22	08:40		09:52 (7)	07:32			08:19 (6)		06:16				04:42			04:15		
	16:17	24	10:16 (7)	17:30	31	08:50 (6)	18:33	17	06:59 (5)	20:42			21:45			22:22		
23	08:38		09:53 (7)	07:29			08:19 (6)		06:13				04:41			04:15		
	16:19	22	10:15 (7)	17:32	31	08:50 (6)	18:35	21	07:00 (5)	20:44			21:47			22:22		
24	08:36		09:54 (7)	07:27			08:20 (6)		06:10				04:39			04:16		
	16:22	21	10:15 (7)	17:34	30	08:50 (6)	18:38	23	07:00 (5)	20:46			21:49			22:22		
25	08:35		09:55 (7)	07:24			08:20 (6)		06:07				04:37			04:16		
	16:24	19	10:14 (7)	17:37	29	08:49 (6)	18:40	24	07:00 (5)	20:48			21:51			22:22		
26	08:33		09:56 (7)	07:22			08:20 (6)		06:05				04:36			04:17		
	16:26	18	10:14 (7)	17:39	29	08:49 (6)	18:42	25	07:01 (5)	20:50			21:53			22:22		
27	08:31		09:58 (7)	07:19			08:20 (6)		06:02				04:34			04:17		
	16:28	15	10:13 (7)	17:41	27	08:47 (6)	18:44	25	07:00 (5)	20:53			21:55			22:22		
28	08:29		10:00 (7)	07:16			08:21 (6)		05:59				04:32			04:18		
	16:31	11	10:11 (7)	17:44	26	08:47 (6)	18:46	27	07:00 (5)	20:55			21:56			22:21		
29	08:27		10:03 (7)				06:56		07:22 (1)	05:33			04:31			04:18		
	16:33	4	10:07 (7)				19:49	30	07:59 (5)	20:57			21:58			22:21		
30	08:25						06:53		07:19 (1)	05:30			04:30			04:19		
	16:35						19:51	33	07:58 (5)	20:59			22:00			22:21		
31	08:23						06:51		07:17 (1)				04:28					
	16:38						19:53	34	07:57 (5)				22:01					
Potential sun hours	227			262			365			429			515			539		
Total, worst case		642			526			541			145							
Sun reduction		0.11			0.19			0.40			0.43							
Oper. time red.		1.00			1.00			1.00			1.00							
Wind dir. red.		1.00			1.00			1.00			1.00							
Total reduction		0.11			0.19			0.40			0.43							
Total, real		70			102			218			62							

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Lukstini (94880090014002) - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (778)

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	July	August	September	October	November	December
1	04:20	05:09	06:15	07:19	07:57 (9)	08:02 (8)
	22:20	21:35	20:17	18:53	16:32	15:37
2	04:21	05:11	06:17	07:21	07:56 (9)	08:04 (8)
	22:20	21:33	20:15	18:51	16:30	15:36
3	04:22	05:13	06:19	07:23	07:55 (9)	08:07 (8)
	22:19	21:31	20:12	18:48	16:27	15:35
4	04:23	05:15	06:21	07:25	07:56 (9)	08:09 (8)
	22:18	21:29	20:09	18:45	16:25	15:34
5	04:24	05:17	06:23	07:27	07:57 (9)	08:10 (8)
	22:18	21:27	20:06	18:42	16:23	15:34
6	04:25	05:20	06:26	07:29	07:59 (9)	08:12 (8)
	22:17	21:24	20:04	18:40	16:21	15:33
7	04:26	05:22	06:28	07:31	08:01 (9)	08:14 (8)
	22:16	21:22	20:01	18:37	16:18	15:32
8	04:27	05:24	06:30	07:34	08:04 (9)	08:17 (8)
	22:15	21:20	19:58	18:34	16:16	15:31
9	04:29	05:26	06:32	07:36	08:06 (9)	08:19 (8)
	22:14	21:17	19:55	18:31	16:14	15:31
10	04:30	05:28	06:34	07:38	08:08 (9)	08:21 (8)
	22:13	21:15	19:52	18:29	16:12	15:30
11	04:31	05:30	06:36	07:40	08:08 (9)	08:21 (8)
	22:12	21:12	19:50	18:26	16:10	15:30
12	04:33	05:32	06:38	07:42	08:10 (9)	08:23 (8)
	22:10	21:10	19:47	18:23	16:08	15:30
13	04:34	05:34	06:40	07:45	08:11 (9)	08:24 (8)
	22:09	21:07	19:44	18:21	16:06	15:29
14	04:36	05:37	06:42	07:47	08:13 (9)	08:26 (8)
	22:08	21:05	19:41	18:18	16:04	15:29
15	04:38	05:39	06:45	07:49	08:14 (9)	08:27 (8)
	22:06	21:02	19:38	18:15	16:02	15:29
16	04:39	05:41	06:47	07:51	08:16 (9)	08:29 (8)
	22:05	21:00	19:36	18:13	16:00	15:29
17	04:41	05:43	06:49	07:53	08:17 (9)	08:31 (8)
	22:03	20:57	19:33	18:10	15:58	15:29
18	04:43	05:45	06:51	07:55	08:18 (9)	08:32 (8)
	22:02	20:55	19:30	18:07	15:56	15:29
19	04:44	05:47	06:53	07:57	08:19 (9)	08:33 (8)
	22:00	20:52	19:27	18:05	15:55	15:29
20	04:46	05:49	06:55	07:59	08:20 (9)	08:34 (8)
	21:59	20:50	19:24	18:02	15:53	15:30
21	04:48	05:51	06:57	08:02	08:21 (9)	08:35 (8)
	21:57	20:47	19:22	17:59	15:51	15:30
22	04:50	05:54	07:00	08:05	08:22 (9)	08:36 (8)
	21:55	20:44	19:19	17:57	15:50	15:31
23	04:51	05:56	07:01	08:07	08:23 (9)	08:37 (8)
	21:53	20:42	19:16	17:54	15:48	15:31
24	04:53	05:58	07:04	08:09	08:24 (9)	08:38 (8)
	21:52	20:39	19:13	17:52	15:46	15:32
25	04:55	06:00	07:06	08:12	08:25 (9)	08:39 (8)
	21:50	20:36	19:10	17:49	15:45	15:32
26	04:57	06:02	07:08	08:14	08:26 (9)	08:40 (8)
	21:48	20:34	19:07	17:47	15:44	15:33
27	04:59	06:04	07:10	08:16	08:27 (9)	08:41 (8)
	21:46	20:31	19:05	17:44	15:42	15:34
28	05:01	06:06	07:12	08:18	08:28 (9)	08:42 (8)
	21:44	20:28	19:02	17:42	15:41	15:35
29	05:03	06:09	07:14	08:21	08:29 (9)	08:43 (8)
	21:42	20:26	18:59	17:39	15:40	15:36
30	05:05	06:11	07:16	08:23	08:31 (9)	08:44 (8)
	21:40	20:23	18:56	17:37	15:38	15:37
31	05:07	06:13		08:25	08:33 (9)	08:45 (8)
	21:38	20:20		16:34	15:38	15:38
Potential sun hours	538	474	386	321	241	207
Total, worst case			496	704	426	586
Sun reduction			0.46	0.28	0.08	0.06
Oper. time red.			1.00	1.00	1.00	1.00
Wind dir. red.			1.00	1.00	1.00	1.00
Total reduction			0.46	0.28	0.08	0.06
Total, real			229	199	33	36

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Flickering_Valka_Siemens_Gamesa

SIA Estonian, Latvian & Lithuanian environment
Vilandes 3-6
LV-1010 Riga
0037167242411
Baiba / baiba.ozolina@environment.lv
Calculated:
15/01/2026 18:42/4.1.254

Calculation: Flickering_Valka_Siemens_Gamesa
Assumptions for shadow calculations

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:00 15:39	08:21 16:40	15:43 (4) 16:03 (4)	07:13 17:46	16:59 (2) 17:16 (2)	06:48 19:55	05:27 21:01	04:27 22:02	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53
2	09:00 15:40	08:19 16:42	15:43 (4) 16:03 (4)	07:11 17:48	16:59 (2) 17:18 (2)	06:45 19:57	05:25 21:03	04:25 22:04	04:21 22:19	05:11 21:33	06:17 20:14	07:20 18:50
3	09:00 15:42	08:17 16:44	15:43 (4) 16:03 (4)	07:08 17:50	16:58 (2) 17:19 (2)	06:42 19:59	05:23 21:06	04:24 22:05	04:21 22:19	05:13 21:31	06:19 20:12	07:22 18:48
4	08:59 15:43	08:15 16:47	15:44 (4) 16:03 (4)	07:05 17:52	16:58 (2) 17:19 (2)	06:39 20:01	05:20 21:08	04:23 22:07	04:22 22:18	05:15 21:28	06:21 20:09	07:25 18:45
5	08:59 15:45	08:12 16:49	15:45 (4) 16:03 (4)	07:02 17:55	16:58 (2) 17:18 (2)	06:36 20:04	05:18 21:10	04:22 22:08	04:24 22:17	05:17 21:26	06:23 20:06	07:27 18:42
6	08:58 15:46	08:10 16:52	15:45 (4) 16:02 (4)	07:00 17:57	16:59 (2) 17:18 (2)	06:34 20:06	05:15 21:12	04:21 22:09	04:25 22:16	05:19 21:24	06:25 20:03	07:29 18:39
7	08:57 15:48	08:08 16:54	15:46 (4) 16:01 (4)	06:57 17:59	17:00 (2) 17:16 (2)	06:31 20:08	05:13 21:14	04:20 22:11	04:26 22:16	05:21 21:22	06:27 20:01	07:31 18:37
8	08:56 15:49	08:06 16:56	15:48 (4) 15:59 (4)	06:54 18:02	17:01 (2) 17:14 (2)	06:28 20:10	05:11 21:16	04:19 22:12	04:27 22:15	05:23 21:19	06:29 19:58	07:33 18:34
9	08:56 15:51	08:03 16:59	15:51 (4) 15:57 (4)	06:52 18:04	17:03 (2) 17:11 (2)	06:25 20:12	05:09 21:19	04:18 22:13	04:28 22:14	05:26 21:17	06:32 19:55	07:36 18:31
10	08:55 15:53	08:01 17:01	15:53 (4) 16:06	06:49 18:06	17:02 (2) 17:15 (2)	06:23 20:15	05:06 21:21	04:18 22:14	04:30 22:12	05:28 21:14	06:34 19:52	07:38 18:28
11	08:54 15:55	07:59 17:03	15:54 (4) 16:08	06:46 18:03	17:03 (2) 17:17 (2)	06:20 20:17	05:04 21:23	04:17 22:15	04:31 22:11	05:30 21:12	06:36 19:49	07:40 18:26
12	08:53 15:56	07:56 17:06	15:55 (4) 16:11	06:43 18:11	17:04 (2) 17:19 (2)	06:17 20:19	05:02 21:25	04:17 22:16	04:33 22:10	05:32 21:10	06:38 19:47	07:42 18:23
13	08:53 15:58	07:54 17:08	15:56 (4) 16:13	06:40 18:13	17:05 (2) 17:21 (2)	06:14 20:21	05:00 21:27	04:16 22:17	04:34 22:09	05:40 21:07	06:40 19:44	07:43 18:20
14	08:51 16:00	07:52 17:11	15:57 (4) 16:18	06:38 18:15	17:06 (2) 17:24 (2)	06:12 20:24	04:58 21:29	04:16 22:07	04:36 22:01	05:36 21:05	06:42 19:41	07:47 18:18
15	08:49 16:02	07:49 17:13	15:59 (4) 16:20	06:35 18:17	17:07 (2) 17:26 (2)	06:09 20:26	04:56 21:31	04:15 22:06	04:37 22:02	05:38 21:02	06:44 19:38	07:49 18:15
16	08:48 16:04	07:47 17:15	15:59 (4) 16:20	06:32 18:20	17:08 (2) 17:27 (2)	06:06 20:28	04:53 21:33	04:15 22:19	04:39 22:05	05:40 21:00	06:46 19:35	07:51 18:12
17	08:47 16:06	07:44 17:18	15:59 (4) 16:22	06:29 18:22	17:09 (2) 17:28 (2)	06:04 20:30	04:51 21:35	04:15 22:20	04:40 22:03	05:43 20:57	06:48 19:32	07:53 18:10
18	08:45 16:08	07:42 17:20	15:59 (4) 16:24	06:27 18:24	17:10 (2) 17:29 (2)	06:01 20:32	04:49 21:37	04:15 22:20	04:42 22:02	05:45 20:54	06:51 19:30	07:55 1

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Last time (hh:mm) with flicker	(WTG causing flicker last time)
	Minutes with flicker		

Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Mazdzintari - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (458)
Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:00 15:39	08:21 16:40	07:13 17:46	16:54 (4) 17:09 (4)	06:47 19:55	05:27 21:01	04:27 22:02	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:27 16:32
2	09:00 15:40	08:19 16:42	07:11 17:48	16:55 (4) 17:09 (4)	06:45 19:57	05:25 21:03	04:25 22:04	04:21 22:19	05:11 21:33	06:17 20:14	07:20 18:50	07:30 16:29
3	08:59 15:42	08:17 16:44	07:08 17:50	16:57 (4) 17:06 (4)	06:42 19:59	05:23 21:05	04:24 22:05	04:21 22:19	05:13 21:31	06:19 20:12	07:22 18:48	07:32 16:27
4	08:59 15:43	08:14 16:47	07:05 17:52		06:39 20:01	05:20 21:08	04:23 22:07	04:22 22:18	05:15 21:28	06:21 20:09	07:25 18:45	07:34 16:25
5	08:58 15:45	08:12 16:49	07:02 17:55		06:36 20:04	05:18 21:10	04:22 22:08	04:24 22:17	05:17 21:26	06:23 20:06	07:27 18:42	07:36 16:22
6	08:58 15:46	08:10 16:51	07:00 17:57		06:34 20:06	05:15 21:12	04:21 22:09	04:25 22:16	05:19 21:24	06:25 20:03	07:29 18:39	07:39 16:20
7	08:57 15:48	08:08 16:54	06:57 17:59		06:31 20:08	05:13 21:14	04:20 22:11	04:26 22:15	05:21 21:22	06:27 20:00	07:31 18:37	07:41 16:18
8	08:56 15:49	08:06 16:56	06:54 18:02		06:28 20:10	05:11 21:16	04:19 22:12	05:23 22:14	06:29 21:19	07:33 19:58	07:43 18:34	07:43 16:16
9	08:56 15:51	08:03 16:59	06:52 18:04		06:25 20:12	05:09 21:19	04:18 22:13	05:26 21:17	06:32 19:55	07:35 18:31	07:46 16:14	07:46 15:30
10	08:55 15:53	08:01 17:01	06:49 18:06		06:23 20:15	05:06 21:21	04:18 22:14	05:28 21:14	06:34 19:52	07:38 18:28	17:33 (4) 17:39 (4)	07:48 16:12
11	08:54 15:55	07:59 17:03	06:46 18:08		06:20 20:17	05:04 21:23	04:17 22:15	05:30 21:12	06:36 19:49	07:40 18:26	17:30 (4) 17:41 (4)	07:50 16:09
12	08:53 15:56	07:56 17:06	06:43 18:11		06:17 20:19	05:02 21:25	04:17 22:16	05:32 21:10	06:38 19:46	07:42 18:23	17:28 (4) 17:42 (4)	07:53 16:07
13	08:52 15:58	07:54 17:08	06:41 18:13		06:14 20:21	05:00 21:27	04:16 22:17	05:34 21:07	06:40 19:44	07:44 18:20	17:27 (4) 17:43 (4)	07:55 16:05
14	08:50 16:00	07:52 17:11	06:38 18:15		06:12 20:23	04:58 21:29	04:16 22:18	05:36 21:05	06:42 19:41	07:46 18:17	17:26 (4) 17:43 (4)	07:57 16:03
15	08:49 16:02	07:49 17:13	06:35 18:17		06:09 20:26	04:56 21:31	04:15 22:18	05:38 21:02	06:44 19:38	07:49 18:15	17:25 (4) 17:41 (4)	07:59 16:01
16	08:48 16:04	07:47 17:15	06:32 18:19		06:06 20:28	04:53 21:33	04:15 22:19	05:40 21:00	06:46 19:35	07:51 18:50 (2)	17:26 (4) 18:12 (2)	08:02 16:00
17	08:47 16:06	07:44 17:18	06:29 18:22		06:04 20:30	04:51 21:35	04:15 22:19	05:43 22:03	06:48 19:32	18:42 (2) 18:52 (2)	17:39 (4) 18:09 (2)	08:04 15:58
18	08:45 16:08	07:42 17:20	06:27 18:24		06:01 20:32	04:49 21:37	04:15 22:20	05:45 22:02	06:51 19:30	18:40 (2) 18:53 (2)	17:37 (4) 18:07 (2)	08:06 15:56
19	08:44 16:10	07:39 17:22	06:24 18:26	17:54 (2)	05:58 20:35	04:48 21:39	04:15 22:20	05:47 22:00	06:53 19:27	18:38 (2) 18:54 (2)	17:34 (4) 18:04 (2)	08:08 15:54
20	08:42 16:13	07:37 17:25	06:21 18:28	17:53 (2)	05:56 20:37	04:46 21:41	04:15 22:21	05:49 22:58	06:55 19:24	18:37 (2) 18:53 (2)	17:31 (4) 18:02 (2)	08:10 15:52
21	08:41 16:15	07:34 17:27	06:18 18:31	17:52 (2)	05:53 20:39	04:44 21:43	04:15 22:21	05:51 22:57	06:57 19:21	18:37 (2) 18:50 (2)	17:27 (4) 17:59 (2)	08:13 15:50
22	08:39 16:17	07:32 17:29	06:15 18:33	17:51 (2)	05:50 20:41	04:42 21:45	04:15 22:21	05:53 22:55	06:59 19:18	18:36 (2) 18:47 (2)	17:26 (4) 17:56 (2)	08:15 15:49
23	08:38 16:19	07:29 17:32	06:13 18:35	17:52 (2)	05:48 20:43	04:40 21:47	04:15 22:21	05:55 22:55	07:01 19:16	18:37 (2) 18:45 (2)	17:26 (4) 17:54 (2)	08:17 15:48
24	08:36 16:21	07:26 17:34	06:10 18:37	17:52 (2)	05:45 20:46	04:38 21:49	04:15 22:21	05:58 23:03	07:03 19:13	18:37 (2) 18:42 (2)	17:26 (4) 17:51 (2)	08:19 15:46
25	08:34 16:24	07:24 17:36	06:07 18:39	17:52 (2)	05:43 20:48	04:37 21:51	04:16 22:21	06:00 23:09	07:05 19:10	18:38 (2) 18:39 (2)	17:11 16:49	08:21 15:45
26	08:32 16:26	07:21 17:39	06:04 18:42	17:53 (2)	05:40 20:50	04:35 21:52	04:16 22:21	06:02 23:17	07:07 19:07	18:39 (2) 19:07	17:13 16:46	08:23 15:43
27	08:31 16:28	07:19 17:41	06:01 18:44	17:55 (2)	05:37 20:52	04:34 21:54	04:17 22:21	06:04 23:15	07:10 19:04	18:39 (2) 19:04	17:16 16:44	08:25 15:42
28	08:29 16:30	07:16 17:43	05:59 18:46	18:01 (2)	05:35 20:54	04:32 21:56	04:17 22:21	06:06 23:14	07:12 19:02	18:39 (2) 19:02	17:18 16:41	08:27 15:41
29	08:27 16:33		06:56 19:48		05:32 20:57	04:31 21:58	04:18 22:21	06:08 23:14	07:14 18:59	18:39 (2) 19:02	17:20 16:39	08:29 15:39
30	08:25 16:35		06:53 19:50		05:30 20:59	04:29 21:59	04:19 22:20	06:10 23:19	07:16 19:04	18:39 (2) 19:04	17:23 16:42	08:31 15:37
31	08:23 16:37		06:50 19:53			04:28 22:01		06:12 23:20	07:25 19:04	18:36 16:34	17:25 16:34	08:31 15:38
Potential sun hours	227	262	365	429	515	539	538	474	386	321	241	207
Total, worst case												
Sun reduction		76	128						98		114	
Oper. time red.		0.19	0.40						0.46		0.28	
Wind dir. red.		1.00	1.00						1.00		1.00	
Total reduction		0.19	0.40						0.46		0.28	
Total, real		15	52						45		32	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Last time (hh:mm) with flicker	(WTG causing flicker last time)

Flickering_Valka_Siemens_Gamesa

SIA Estonian, Latvian & Lithuanian environment
Vilandes 3-6
LV-1010 Riga
0037167242411
Baiba / baiba.ozolina@environment.lv
Calculated:
15/01/2026 18:42/4.1.254

Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Merkela iela 10 (94010010901001) - Shadow Receptor: 1.0 x 1.0 Azimuth: 3.1° Slope: 90.0° (625)

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:27 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
2	09:00 15:40	08:19 16:42	07:11 17:48	06:45 19:57	05:25 21:04	04:25 22:04	04:20 22:20	05:11 21:33	06:17 20:15	07:21 18:51	07:30 16:29	08:35 15:36
3	09:00 15:42	08:17 16:44	07:08 17:50	06:42 19:59	05:23 21:06	04:24 22:06	04:21 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:37 15:35
4	08:59 15:43	08:15 16:47	07:05 17:53	06:39 20:02	05:20 21:08	04:23 22:07	04:22 22:18	05:15 21:29	06:21 20:09	07:25 18:45	07:34 16:25	08:38 15:34
5	08:59 15:45	08:13 16:49	07:03 17:55	06:36 20:04	05:18 21:10	04:22 22:09	04:23 22:18	05:17 21:26	06:23 20:06	07:27 18:42	07:37 16:23	08:40 15:33
6	08:58 15:46	08:10 16:52	07:00 17:57	06:34 20:06	05:15 21:12	04:21 22:10	04:25 22:17	05:19 21:24	06:25 20:04	07:29 18:39	07:39 16:20	08:42 15:32
7	08:58 15:48	08:08 16:54	06:57 17:59	06:31 20:08	05:13 21:15	04:20 22:11	04:26 22:16	05:21 21:22	06:27 20:01	07:31 18:37	07:41 16:18	08:43 15:32
8	08:57 15:49	08:06 16:56	06:55 18:02	06:28 20:10	05:11 21:17	04:19 22:12	04:27 22:15	05:23 21:19	06:30 19:58	07:34 18:34	07:44 16:16	08:45 15:31
9	08:56 15:51	08:04 16:59	06:52 18:04	06:25 20:13	05:09 21:19	04:18 22:13	04:28 22:14	05:26 21:17	06:32 19:55	07:36 18:31	07:46 16:14	08:46 15:30
10	08:55 15:53	08:01 17:01	06:49 18:06	06:23 20:15	05:06 21:21	04:18 22:14	04:30 22:13	05:28 21:15	06:34 19:52	07:38 18:28	07:48 16:12	08:48 15:30
11	08:54 15:55	07:59 17:03	06:46 18:08	06:20 20:17	05:04 21:23	04:17 22:15	04:31 22:12	05:30 21:12	06:36 19:50	07:40 18:26	07:51 16:10	08:49 15:30
12	08:53 15:56	07:57 17:06	06:44 18:11	06:17 20:19	05:02 21:25	04:16 22:16	04:33 22:10	05:32 21:19	06:38 19:47	07:42 18:23	07:53 16:07	08:50 15:29
13	08:52 15:58	07:54 17:08	06:41 18:13	06:14 20:22	05:00 21:27	04:16 22:17	04:34 22:09	05:34 21:07	06:40 19:44	07:44 18:20	07:55 16:05	08:51 15:29
14	08:51 16:00	07:52 17:11	06:38 18:15	06:12 20:24	04:58 21:29	04:16 22:18	04:36 22:08	05:36 21:05	06:42 19:41	07:47 18:18	07:57 16:03	08:53 15:29
15	08:50 16:02	07:49 17:13	06:35 18:17	06:09 20:26	04:56 21:32	04:15 22:19	04:37 22:06	05:38 21:02	06:44 19:38	07:49 18:15	08:00 16:02	08:54 15:29
16	08:48 16:04	07:47 17:15	06:32 18:20	06:06 20:28	04:53 21:34	04:15 22:19	04:39 22:05	05:40 21:00	06:46 19:35	07:51 18:12	08:02 16:00	08:55 15:29
17	08:47 16:06	07:44 17:18	06:30 18:22	06:04 20:30	04:51 21:36	04:15 22:20	04:40 22:03	05:43 20:57	06:49 19:33	07:53 18:10	08:04 15:58	08:56 15:29
18	08:46 16:08	07:42 17:20	06:27 18:24	06:01 20:33	04:49 21:38	04:15 22:20	04:42 22:02	05:45 20:55	06:51 19:30	07:56 18:07	08:06 15:56	08:56 15:29
19	08:44 16:10	07:39 17:22	06:24 18:26	05:58 20:35	04:48 21:40	04:14 22:21	04:44 22:00	05:47 20:52	06:53 19:27	07:58 18:04	08:09 15:54	08:57 15:29
20	08:43 16:13	07:37 17:25	06:21 18:29	05:56 20:37	04:46 21:42	04:15 22:21	04:46 21:59	05:49 20:50	06:55 19:24	08:00 18:02	08:11 15:52	08:58 15:29
21	08:41 16:15	07:34 17:27	06:18 18:31	05:53 20:39	04:44 21:44	04:15 22:22	04:47 21:57	05:51 20:47	06:57 19:21	08:02 17:59	08:13 15:51	08:59 15:30
22	08:40 16:17	07:32 17:29	06:16 18:33	05:50 20:41	04:42 21:45	04:15 22:22	04:49 21:55	05:53 20:44	06:59 19:19	08:05 17:57	08:15 15:49	08:59 15:30
23	08:38 16:19	07:29 17:32	06:13 18:35	05:48 20:44	04:40 21:47	04:15 22:22	04:51 21:53	05:55 20:42	07:01 19:16	08:07 17:54	08:17 15:48	09:00 15:31
24	08:36 16:21	07:27 17:34	06:10 18:37	05:45 20:46	04:38 21:49	04:15 22:22	04:53 21:52	05:58 20:39	07:03 19:13	08:09 17:51	08:19 15:46	09:00 15:31
25	08:34 16:24	07:24 17:36	06:07 18:40	05:43 20:48	04:37 21:51	04:16 22:22	04:55 21:50	06:00 20:36	07:06 19:10	07:11 16:49	08:21 15:45	09:00 15:32
26	08:33 16:26	07:21 17:39	06:04 18:42	05:40 20:50	04:35 21:53	04:16 22:22	04:57 21:48	06:02 20:34	07:08 19:07	07:14 16:46	08:23 15:43	09:01 15:33
27	08:31 16:28	07:19 17:41	06:02 18:44	05:37 20:53	04:34 21:55	04:17 22:22	04:59 21:46	06:04 20:31	07:10 19:04	07:16 16:44	08:25 15:42	09:01 15:34
28	08:29 16:30	07:16 17:43	05:59 18:46	05:35 20:55	04:32 21:56	04:17 22:21	05:01 21:44	06:06 20:28	07:12 19:02	07:18 16:41	08:27 15:41	09:01 15:34
29	08:27 16:33		05:56 19:48	05:32 20:57	04:31 21:58	04:18 22:21	05:03 21:42	06:08 20:26	07:14 18:59	07:21 16:39	08:29 15:39	09:01 15:35
30	08:25 16:35		05:53 19:51	05:30 20:59	04:29 22:00	04:19 22:21	05:05 21:40	06:10 20:23	07:16 18:56	07:23 16:37	08:31 15:38	09:01 15:36
31	08:23 16:37		05:50 19:53		04:28 22:01		05:07 21:38	06:13 20:20		07:25 16:34		09:01 15:38
Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Merkela iela 10 (94010010901002) - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (624) Sunshine probability S (Average daily sunshine hours) []

Assumptions for shadow calculations

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
0.80 1.82 4.75 6.09 9.67 10.05 8.16 7.72 5.94 2.93 0.63 0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:27 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
2	09:00 15:40	08:19 16:42	07:11 17:48	06:45 19:57	05:25 21:04	04:25 22:04	04:20 22:20	05:11 21:33	06:17 20:15	07:21 18:51	07:30 16:29	08:35 15:36
3	09:00 15:42	08:17 16:44	07:08 17:50	06:42 19:59	05:23 21:06	04:24 22:06	04:21 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:37 15:35
4	08:59 15:43	08:15 16:47	07:05 17:53	06:39 20:02	05:20 21:08	04:23 22:07	04:22 22:18	05:15 21:29	06:21 20:09	07:25 18:45	07:34 16:25	08:38 15:34
5	08:59 15:45	08:13 16:49	07:03 17:55	06:36 20:04	05:18 21:10	04:22 22:09	04:23 22:18	05:17 21:26	06:23 20:06	07:27 18:42	07:37 16:23	08:40 15:33
6	08:58 15:46	08:10 16:52	07:00 17:57	06:34 20:06	05:15 21:12	04:21 22:10	04:25 22:17	05:19 21:24	06:25 20:04	07:29 18:39	07:39 16:20	08:42 15:32
7	08:58 15:48	08:08 16:54	06:57 17:59	06:31 20:08	05:13 21:15	04:20 22:11	04:26 22:16	05:21 21:22	06:27 20:01	07:31 18:37	07:41 16:18	08:43 15:32
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11	08:54 15:55	07:59 17:03	06:46 18:08	06:20 20:17	05:04 21:23	04:17 22:15	04:31 22:12	05:30 21:12	06:36 19:50	07:40 18:26	07:51 16:10	08:49 15:30
12	08:53 15:56	07:57 17:06	06:44 18:11	06:17 20:19	05:02 21:25	04:16 22:16	04:33 22:10	05:32 21:19	06:38 19:47	07:42 18:23	07:53 16:07	08:50 15:29
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15	08:50 16:02	07:49 17:13	06:35 18:17	06:09 20:26	04:56 21:32	04:15 22:19	04:37 22:06	05:38 21:02	06:44 19:38	07:49 18:15	08:00 16:02	08:54 15:29
16	08:48 16:04	07:47 17:15	06:32 18:20	06:06 20:28	04:53 21:34	04:15 22:19	04:39 22:05	05:40 21:00	06:46 19:35	07:51 18:12	08:02 16:00	08:55 15:29
17	08:47 16:06	07:44 17:18	06:30 18:22	06:04 20:30	04:51 21:36	04:15 22:20	04:40 22:03	05:43 20:57	06:49 19:33	07:53 18:10	08:04 15:58	08:56 15:29
18	08:46 16:08	07:42 17:20	06:27 18:24	06:01 20:33	04:49 21:38	04:15 22:20	04:42 22:02	05:45 20:55	06:51 19:30	07:56 18:07	08:06 15:56	08:56 15:29
19	08:44 16:10	07:39 17:22	06:24 18:26	05:58 20:35	04:48 21:40	04:14 22:21	04:44 22:00	05:47 20:52	06:53 19:27	07:58 18:04	08:09 15:54	08:57 15:29
20	08:43 16:13	07:37 17:25	06:21 18:29	05:56 20:37	04:46 21:42	04:15 22:21	04:46 21:59	05:49 20:50	06:55 19:24	08:00 18:02	08:11 15:52	08:58 15:29
21	08:41 16:15	07:34 17:27	06:18 18:31	05:53 20:39	04:44 21:44	04:15 22:22	04:47 21:57	05:51 20:47	06:57 19:21	08:02 17:59	08:13 15:51	08:59 15:30
22	08:40 16:17	07:32 17:29	06:16 18:33	05:50 20:41	04:42 21:45	04:15 22:22	04:49 21:55	05:53 20:44	06:59 19:19	08:05 17:57	08:15 15:49	08:59 15:30
23	08:38 16:19	07:29 17:32	06:13 18:35	05:48 20:44	04:40 21:47	04:15 22:22	04:51 21:53	05:55 20:42	07:01 19:16	08:07 17:54	08:17 15:48	09:00 15:31
24	08:36 16:21	07:27 17:34	06:10 18:37	05:45 20:46	04:38 21:49	04:15 22:22	04:53 21:52	05:58 20:39	07:03 19:13	08:09 17:51	08:19 15:46	09:00 15:31
25	08:34 16:24	07:24 17:36	06:07 18:40	05:43 20:48	04:37 21:51	04:16 22:22	04:55 21:50	06:00 20:36	07:06 19:10	07:11 16:49	08:21 15:45	09:00 15:32
26	08:33 16:26	07:21 17:39	06:04 18:42	05:40 20:50	04:35 21:53	04:16 22:22	04:57 21:48	06:02 20:34	07:08 19:07	07:14 16:46	08:23 15:43	09:01 15:33
27	08:31 16:28	07:19 17:41	06:02 18:44	05:37 20:53	04:34 21:55	04:17 22:22	04:59 21:46	06:04 20:31	07:10 19:04	07:16 16:44	08:25 15:42	09:01 15:34
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Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
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Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Last time (hh:mm) with flicker	(WTG causing flicker last time)
	Minutes with flicker		

Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Merkela iela 12 - Shadow Receptor: 1.0×1.0 Azimuth: 3.1° Slope: 90.0° (619)
 Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

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2	09:00 15:40	08:19 16:42	07:11 17:48	06:45 19:57	05:25 21:04	04:25 22:04	04:20 22:20	05:11 21:33	06:17 20:15	07:21 18:51	07:30 16:29	08:35 15:36
3	09:00 15:42	08:17 16:44	07:08 17:50	06:42 19:59	05:23 21:06	04:24 22:06	04:21 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:37 15:35
4	08:59 15:43	08:15 16:47	07:05 17:53	06:39 20:02	05:20 21:08	04:23 22:07	04:22 22:18	05:15 21:29	06:21 20:09	07:25 18:45	07:34 16:25	08:38 15:34
5	08:59 15:45	08:13 16:49	07:03 17:55	06:36 20:04	05:18 21:10	04:22 22:09	04:23 22:18	05:17 21:26	06:23 20:06	07:27 18:42	07:37 16:23	08:40 15:33
6	08:58 15:46	08:10 16:52	07:00 17:57	06:34 20:06	05:15 21:12	04:21 22:10	04:25 22:17	05:19 21:24	06:25 20:04	07:29 18:39	07:39 16:20	08:42 15:32
7	08:58 15:48	08:08 16:54	06:57 17:59	06:31 20:08	05:13 21:15	04:20 22:11	04:26 22:16	05:21 21:22	06:27 20:01	07:31 18:37	07:41 16:18	08:43 15:32
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10	08:55 15:53	08:01 17:01	06:49 18:06	06:23 20:15	05:06 21:21	04:18 22:14	04:30 22:13	05:28 21:15	06:34 19:52	07:38 18:28	07:48 16:12	08:48 15:30
11	08:54 15:55	07:59 17:03	06:46 18:08	06:20 20:17	05:04 21:23	04:17 22:15	04:31 22:12	05:30 21:12	06:36 19:50	07:40 18:26	07:51 16:10	08:49 15:30
12	08:53 15:56	07:57 17:06	06:44 18:11	06:17 20:19	05:02 21:25	04:16 22:16	04:33 22:10	05:32 21:19	06:38 19:47	07:42 18:23	07:53 16:07	08:50 15:29
13	08:52 15:58	07:54 17:08	06:41 18:13	06:14 20:22	05:00 21:27	04:16 22:17	04:34 22:09	05:34 21:07	06:40 19:44	07:44 18:20	07:55 16:05	08:51 15:29
14	08:51 16:00	07:52 17:11	06:38 18:15	06:12 20:24	04:58 21:29	04:16 22:18	04:36 22:08	05:36 21:05	06:42 19:41	07:47 18:18	07:57 16:03	08:53 15:29
15	08:50 16:02	07:49 17:13	06:35 18:17	06:09 20:26	04:56 21:32	04:15 22:19	04:37 22:06	05:38 21:02	06:44 19:38	07:49 18:15	08:00 16:02	08:54 15:29
16	08:48 16:04	07:47 17:15	06:32 18:20	06:06 20:28	04:53 21:34	04:15 22:19	04:39 22:05	05:40 21:00	06:46 19:35	07:51 18:12	08:02 16:00	08:55 15:29
17	08:47 16:06	07:44 17:18	06:30 18:22	06:04 20:30	04:51 21:36	04:15 22:20	04:40 22:03	05:43 20:57	06:49 19:33	07:53 18:10	08:04 15:58	08:56 15:29
18	08:46 16:08	07:42 17:20	06:27 18:24	06:01 20:33	04:49 21:38	04:15 22:20	04:42 22:02	05:45 20:55	06:51 19:30	07:56 18:07	08:06 15:56	08:56 15:29
19	08:44 16:10	07:39 17:22	06:24 18:26	05:58 20:35	04:48 21:40	04:14 22:21	04:44 22:00	05:47 20:52	06:53 19:27	07:58 18:04	08:09 15:54	08:57 15:29
20	08:43 16:13	07:37 17:25	06:21 18:29	05:56 20:37	04:46 21:42	04:15 22:21	04:46 21:59	05:49 20:50	06:55 19:24	08:00 18:02	08:11 15:52	08:58 15:29
21	08:41 16:15	07:34 17:27	06:18 18:31	05:53 20:39	04:44 21:44	04:15 22:22	04:47 21:57	05:51 20:47	06:57 19:21	08:02 17:59	08:13 15:51	08:59 15:30
22	08:40 16:17	07:32 17:29	06:16 18:33	05:50 20:41	04:42 21:45	04:15 22:22	04:49 21:55	05:53 20:44	06:59 19:19	08:05 17:57	08:15 15:49	08:59 15:30
23	08:38 16:19	07:29 17:32	06:13 18:35	05:48 20:44	04:40 21:47	04:15 22:22	04:51 21:53	05:55 20:42	07:01 19:16	08:07 17:54	08:17 15:48	09:00 15:31
24	08:36 16:21	07:27 17:34	06:10 18:37	05:45 20:46	04:38 21:49	04:15 22:22	04:53 21:52	05:58 20:39	07:03 19:13	08:09 17:51	08:19 15:46	09:00 15:31
25	08:34 16:24	07:24 17:36	06:07 18:40	05:43 20:48	04:37 21:51	04:16 22:22	04:55 21:50	06:00 20:36	07:06 19:10	07:11 16:49	08:21 15:45	09:00 15:32
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29	08:27 16:33		05:56 19:48	05:32 20:57	04:31 21:58	04:18 22:21	05:03 21:42	06:08 20:26	07:14 18:59	07:21 16:39	08:29 15:39	09:01 15:35
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31	08:23 16:37		05:50 19:53		04:28 22:01		05:07 21:38	06:13 20:20		07:25 16:34		09:01 15:38
Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Merkela iela 13 - Shadow Receptor: 1.0×1.0 Azimuth: 3.1° Slope: 90.0° (629)
 Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:27 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
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Total, worst case												
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Merkela iela 13A - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (640)
 Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

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2	09:00 15:40	08:19 16:42	07:11 17:48	06:45 19:57	05:25 21:04	04:25 22:04	04:20 22:20	05:11 21:33	06:17 20:15	07:20 18:51	07:30 16:29	08:35 15:36
3	09:00 15:42	08:17 16:44	07:08 17:50	06:42 19:59	05:23 21:06	04:24 22:06	04:21 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:37 15:35
4	08:59 15:43	08:15 16:47	07:05 17:53	06:39 20:02	05:20 21:08	04:23 22:07	04:22 22:18	05:15 21:29	06:21 20:09	07:25 18:45	07:34 16:25	08:38 15:34
5	08:59 15:45	08:13 16:49	07:03 17:55	06:36 20:04	05:18 21:10	04:22 22:08	04:23 22:18	05:17 21:26	06:23 20:06	07:27 18:42	07:37 16:23	08:40 15:33
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31	08:23 16:37		06:50 19:53		04:28 22:01		05:07 21:38	06:13 20:20		07:25 16:34		09:01 15:38
Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Merkela iela 14 - Shadow Receptor: 1.0×1.0 Azimuth: 3.1° Slope: 90.0° (598)
 Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:27 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
2	09:00 15:40	08:19 16:42	07:11 17:48	06:45 19:57	05:25 21:04	04:25 22:04	04:20 22:20	05:11 21:33	06:17 20:15	07:21 18:51	07:30 16:29	08:35 15:36
3	09:00 15:42	08:17 16:44	07:08 17:50	06:42 19:59	05:23 21:06	04:24 22:06	04:21 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:37 15:35
4	08:59 15:43	08:15 16:47	07:05 17:53	06:39 20:02	05:20 21:08	04:23 22:07	04:22 22:18	05:15 21:29	06:21 20:09	07:25 18:45	07:34 16:25	08:38 15:34
5	08:59 15:45	08:13 16:49	07:03 17:55	06:36 20:04	05:18 21:10	04:22 22:09	04:23 22:18	05:17 21:26	06:23 20:06	07:27 18:42	07:37 16:23	08:40 15:33
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31	08:23 16:37		05:50 19:53		04:28 22:01		05:07 21:38	06:13 20:20		07:25 16:34		09:01 15:38
Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Merkela iela 15 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (612)
Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:27 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
2	09:00 15:40	08:19 16:42	07:11 17:48	06:45 19:57	05:25 21:04	04:25 22:04	04:20 22:20	05:11 21:33	06:17 20:15	07:21 18:51	07:30 16:29	08:35 15:36
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22	08:40 16:17	07:32 17:29	06:16 18:33	05:50 20:41	04:42 21:45	04:15 22:22	04:49 21:55	05:53 20:44	06:59 19:19	08:05 17:57	08:15 15:49	08:59 15:30
23	08:38 16:19	07:29 17:32	06:13 18:35	05:48 20:44	04:40 21:47	04:15 22:22	04:51 21:53	05:55 20:42	07:01 19:16	08:07 17:54	08:17 15:48	09:00 15:31
24	08:36 16:21	07:27 17:34	06:10 18:37	05:45 20:46	04:38 21:49	04:15 22:22	04:53 21:52	05:58 20:39	07:03 19:13	08:09 17:51	08:19 15:46	09:00 15:31
25	08:34 16:24	07:24 17:36	06:07 18:40	05:43 20:48	04:37 21:51	04:16 22:22	04:55 21:50	06:00 20:36	07:06 19:10	07:11 16:49	08:21 15:45	09:00 15:32
26	08:33 16:26	07:21 17:39	06:04 18:42	05:40 20:50	04:35 21:53	04:16 22:22	04:57 21:48	06:02 20:34	07:08 19:07	07:14 16:46	08:23 15:43	09:01 15:33
27	08:31 16:28	07:19 17:41	06:02 18:44	05:37 20:53	04:34 21:55	04:17 22:22	04:59 21:46	06:04 20:31	07:10 19:04	07:16 16:44	08:25 15:42	09:01 15:34
28	08:29 16:30	07:16 17:43	05:59 18:46	05:35 20:55	04:32 21:56	04:17 22:21	05:01 21:44	06:06 20:28	07:12 19:02	07:18 16:41	08:27 15:41	09:01 15:34
29	08:27 16:33		06:56 19:48	05:32 20:57	04:31 21:58	04:18 22:21	05:03 21:42	06:08 20:26	07:14 18:59	07:21 16:39	08:29 15:39	09:01 15:35
30	08:25 16:35		06:53 19:51	05:30 20:59	04:29 22:00	04:19 22:21	05:05 21:40	06:10 20:23	07:16 18:56	07:23 16:37	08:31 15:38	09:01 15:36
31	08:23 16:37		06:50 19:53		04:28 22:01		05:07 21:38	06:13 20:20		07:25 16:34		09:01 15:38
Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
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Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Merkela iela 16 - Shadow Receptor: 1.0×1.0 Azimuth: 3.1° Slope: 90.0° (637)
 Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:27 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
2	09:00 15:40	08:19 16:42	07:11 17:48	06:45 19:57	05:25 21:04	04:25 22:04	04:20 22:20	05:11 21:33	06:17 20:15	07:21 18:51	07:30 16:29	08:35 15:36
3	09:00 15:42	08:17 16:44	07:08 17:50	06:42 19:59	05:23 21:06	04:24 22:06	04:21 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:37 15:35
4	08:59 15:43	08:15 16:47	07:05 17:53	06:39 20:02	05:20 21:08	04:23 22:07	04:22 22:18	05:15 21:29	06:21 20:09	07:25 18:45	07:34 16:25	08:38 15:34
5	08:59 15:45	08:13 16:49	07:03 17:55	06:36 20:04	05:18 21:10	04:22 22:09	04:23 22:18	05:17 21:26	06:23 20:06	07:27 18:42	07:37 16:23	08:40 15:33
6	08:58 15:46	08:10 16:52	07:00 17:57	06:34 20:06	05:15 21:12	04:21 22:10	04:25 22:17	05:19 21:24	06:25 20:04	07:29 18:39	07:39 16:20	08:42 15:32
7	08:58 15:48	08:08 16:54	06:57 17:59	06:31 20:08	05:13 21:15	04:20 22:11	04:26 22:16	05:21 21:22	06:27 20:01	07:31 18:37	07:41 16:18	08:43 15:32
8	08:57 15:49	08:06 16:56	06:55 18:02	06:28 20:10	05:11 21:17	04:19 22:12	04:27 22:15	05:23 21:19	06:30 19:58	07:34 18:34	07:44 16:16	08:45 15:31
9	08:56 15:51	08:04 16:59	06:52 18:04	06:25 20:13	05:09 21:19	04:18 22:13	04:28 22:14	05:26 21:17	06:32 19:55	07:36 18:31	07:46 16:14	08:46 15:30
10	08:55 15:53	08:01 17:01	06:49 18:06	06:23 20:15	05:06 21:21	04:18 22:14	04:30 22:13	05:28 21:15	06:34 19:52	07:38 18:28	07:48 16:12	08:48 15:30
11	08:54 15:55	07:59 17:03	06:46 18:08	06:20 20:17	05:04 21:23	04:17 22:15	04:31 22:12	05:30 21:12	06:36 19:50	07:40 18:26	07:51 16:10	08:49 15:30
12	08:53 15:56	07:57 17:06	06:44 18:11	06:17 20:19	05:02 21:25	04:16 22:16	04:33 22:10	05:32 21:19	06:38 19:47	07:42 18:23	07:53 16:07	08:50 15:29
13	08:52 15:58	07:54 17:08	06:41 18:13	06:14 20:22	05:00 21:27	04:16 22:17	04:34 22:09	05:34 21:07	06:40 19:44	07:44 18:20	07:55 16:05	08:51 15:29
14	08:51 16:00	07:52 17:11	06:38 18:15	06:12 20:24	04:58 21:29	04:16 22:18	04:36 22:08	05:36 21:05	06:42 19:41	07:47 18:18	07:57 16:03	08:53 15:29
15	08:50 16:02	07:49 17:13	06:35 18:17	06:09 20:26	04:56 21:32	04:15 22:19	04:37 22:06	05:38 21:02	06:44 19:38	07:49 18:15	08:00 16:02	08:54 15:29
16	08:48 16:04	07:47 17:15	06:32 18:20	06:06 20:28	04:53 21:34	04:15 22:19	04:39 22:05	05:40 21:00	06:46 19:35	07:51 18:12	08:02 16:00	08:55 15:29
17	08:47 16:06	07:44 17:18	06:30 18:22	06:04 20:30	04:51 21:36	04:15 22:20	04:40 22:03	05:43 20:57	06:49 19:33	07:53 18:10	08:04 15:58	08:56 15:29
18	08:46 16:08	07:42 17:20	06:27 18:24	06:01 20:33	04:49 21:38	04:15 22:20	04:42 22:02	05:45 20:55	06:51 19:30	07:56 18:07	08:06 15:56	08:56 15:29
19	08:44 16:10	07:39 17:22	06:24 18:26	05:58 20:35	04:48 21:40	04:15 22:21	04:44 22:00	05:47 20:52	06:53 19:27	07:58 18:04	08:09 15:54	08:57 15:29
20	08:43 16:13	07:37 17:25	06:21 18:29	05:56 20:37	04:46 21:42	04:15 22:21	04:46 21:59	05:49 20:50	06:55 19:24	08:00 18:02	08:11 15:52	08:58 15:29
21	08:41 16:15	07:34 17:27	06:18 18:31	05:53 20:39	04:44 21:44	04:15 22:22	04:47 21:57	05:51 20:47	06:57 19:21	08:02 17:59	08:13 15:51	08:59 15:30
22	08:40 16:17	07:32 17:29	06:16 18:33	05:50 20:41	04:42 21:45	04:15 22:22	04:49 21:55	05:53 20:44	06:59 19:19	08:05 17:57	08:15 15:49	08:59 15:30
23	08:38 16:19	07:29 17:32	06:13 18:35	05:48 20:44	04:40 21:47	04:15 22:22	04:51 21:53	05:55 20:42	07:01 19:16	08:07 17:54	08:17 15:48	09:00 15:31
24	08:36 16:21	07:27 17:34	06:10 18:37	05:45 20:46	04:38 21:49	04:15 22:22	04:53 21:52	05:58 20:39	07:03 19:13	08:09 17:51	08:19 15:46	09:00 15:31
25	08:34 16:24	07:24 17:36	06:07 18:40	05:43 20:48	04:37 21:51	04:16 22:22	04:55 21:50	06:00 20:36	07:06 19:10	07:11 16:49	08:21 15:45	09:00 15:32
26	08:33 16:26	07:21 17:39	06:04 18:42	05:40 20:50	04:35 21:53	04:16 22:22	04:57 21:48	06:02 20:34	07:08 19:07	07:14 16:46	08:23 15:43	09:01 15:33
27	08:31 16:28	07:19 17:41	06:02 18:44	05:37 20:53	04:34 21:55	04:17 22:22	04:59 21:46	06:04 20:31	07:10 19:04	07:16 16:44	08:25 15:42	09:01 15:34
28	08:29 16:30	07:16 17:43	05:59 18:46	05:35 20:55	04:32 21:56	04:17 22:21	05:01 21:44	06:06 20:28	07:12 19:02	07:18 16:41	08:27 15:41	09:01 15:34
29	08:27 16:33		05:56 19:48	05:32 20:57	04:31 21:58	04:18 22:21	05:03 21:42	06:08 20:26	07:14 18:59	07:21 16:39	08:29 15:39	09:01 15:35
30	08:25 16:35		05:53 19:51	05:30 20:59	04:29 22:00	04:19 22:21	05:05 21:40	06:10 20:23	07:16 18:56	07:23 16:37	08:31 15:38	09:01 15:36
31	08:23 16:37		05:50 19:53		04:28 22:01		05:07 21:38	06:13 20:20		07:25 16:34		09:01 15:38
Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Merkela iela 16A - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (597)
 Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:27 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
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3	09:00 15:42	08:17 16:44	07:08 17:50	06:42 19:59	05:23 21:06	04:24 22:06	04:21 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:37 15:35
4	08:59 15:43	08:15 16:47	07:05 17:53	06:39 20:02	05:20 21:08	04:23 22:07	04:22 22:18	05:15 21:29	06:21 20:09	07:25 18:45	07:34 16:25	08:38 15:34
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7	08:58 15:48	08:08 16:54	06:57 17:59	06:31 20:08	05:13 21:15	04:20 22:11	04:26 22:16	05:21 21:22	06:27 20:01	07:31 18:37	07:41 16:18	08:43 15:32
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10	08:55 15:53	08:01 17:01	06:49 18:06	06:23 20:15	05:06 21:21	04:18 22:14	04:30 22:13	05:28 21:15	06:34 19:52	07:38 18:28	07:48 16:12	08:48 15:30
11	08:54 15:55	07:59 17:03	06:46 18:08	06:20 20:17	05:04 21:23	04:17 22:15	04:31 22:12	05:30 21:12	06:36 19:50	07:40 18:26	07:51 16:10	08:49 15:30
12	08:53 15:56	07:57 17:06	06:44 18:11	06:17 20:19	05:02 21:25	04:16 22:16	04:33 22:10	05:32 21:19	06:38 19:47	07:42 18:23	07:53 16:07	08:50 15:29
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19	08:44 16:10	07:39 17:22	06:24 18:26	05:58 20:35	04:48 21:40	04:15 22:21	04:44 22:00	05:47 20:52	06:53 19:27	07:58 18:04	08:09 15:54	08:57 15:29
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22	08:40 16:17	07:32 17:29	06:16 18:33	05:50 20:41	04:42 21:45	04:15 22:22	04:49 21:55	05:53 20:44	06:59 19:19	08:05 17:57	08:15 15:49	08:59 15:30
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24	08:36 16:21	07:27 17:34	06:10 18:37	05:45 20:46	04:38 21:49	04:15 22:22	04:53 21:52	05:58 20:39	07:03 19:13	08:09 17:51	08:19 15:46	09:00 15:31
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Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Merkela iela 17 - Shadow Receptor: 1.0×1.0 Azimuth: 3.1° Slope: 90.0° (639)
 Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
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6	08:58 15:46	08:10 16:52	07:00 17:57	06:34 20:06	05:15 21:12	04:21 22:10	04:25 22:17	05:19 21:24	06:25 20:04	07:29 18:39	07:39 16:20	08:42 15:32
7	08:58 15:48	08:08 16:54	06:57 17:59	06:31 20:08	05:13 21:15	04:20 22:11	04:26 22:16	05:21 21:22	06:27 20:01	07:31 18:37	07:41 16:18	08:43 15:32
8	08:57 15:49	08:06 16:56	06:55 18:02	06:28 20:10	05:11 21:17	04:19 22:12	04:27 22:15	05:23 21:19	06:30 19:58	07:34 18:34	07:44 16:16	08:45 15:31
9	08:56 15:51	08:04 16:59	06:52 18:04	06:25 20:13	05:09 21:19	04:18 22:13	04:28 22:14	05:26 21:17	06:32 19:55	07:36 18:31	07:46 16:14	08:46 15:30
10	08:55 15:53	08:01 17:01	06:49 18:06	06:23 20:15	05:06 21:21	04:18 22:14	04:30 22:13	05:28 21:15	06:34 19:52	07:38 18:28	07:48 16:12	08:48 15:30
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31	08:23 16:37		06:50 19:53		04:28 22:01		05:07 21:38	06:13 20:20		07:25 16:34		09:01 15:38
Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Merkela iela 18 - Shadow Receptor: 1.0×1.0 Azimuth: 3.1° Slope: 90.0° (599)
 Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:27 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
2	09:00 15:40	08:19 16:42	07:11 17:48	06:45 19:57	05:25 21:04	04:25 22:04	04:20 22:20	05:11 21:33	06:17 20:15	07:21 18:51	07:30 16:29	08:35 15:36
3	09:00 15:42	08:17 16:44	07:08 17:50	06:42 19:59	05:23 21:06	04:24 22:06	04:21 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:37 15:35
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31	08:23 16:37		05:50 19:53		04:28 22:01		05:07 21:38	06:13 20:20		07:25 16:34		09:01 15:38
Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Merkela iela 19 - Shadow Receptor: 1.0×1.0 Azimuth: 3.1° Slope: 90.0° (627)
 Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:27 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
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26	08:33 16:26	07:21 17:39	06:04 18:42	05:40 20:50	04:35 21:53	04:16 22:22	04:57 21:48	06:02 20:34	07:08 19:07	07:14 16:46	08:23 15:43	09:01 15:33
27	08:31 16:28	07:19 17:41	06:02 18:44	05:37 20:53	04:34 21:55	04:17 22:22	04:59 21:46	06:04 20:31	07:10 19:04	07:16 16:44	08:25 15:42	09:01 15:34
28	08:29 16:30	07:16 17:43	05:59 18:46	05:35 20:55	04:32 21:56	04:17 22:21	05:01 21:44	06:06 20:28	07:12 19:02	07:18 16:41	08:27 15:41	09:01 15:34
29	08:27 16:33		05:56 19:48	05:32 20:57	04:31 21:58	04:18 22:21	05:03 21:42	06:08 20:26	07:14 18:59	07:21 16:39	08:29 15:39	09:01 15:35
30	08:25 16:35		05:53 19:51	05:30 20:59	04:29 22:00	04:19 22:21	05:05 21:40	06:10 20:23	07:16 18:56	07:23 16:37	08:31 15:38	09:01 15:36
31	08:23 16:37		05:50 19:53		04:28 22:01		05:07 21:38	06:13 20:20		07:25 16:34		09:01 15:38
Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Merkela iela 20 - Shadow Receptor: 1.0×1.0 Azimuth: 3.1° Slope: 90.0° (623)
 Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:27 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
2	09:00 15:40	08:19 16:42	07:11 17:48	06:45 19:57	05:25 21:04	04:25 22:04	04:20 22:20	05:11 21:33	06:17 20:15	07:21 18:51	07:30 16:29	08:35 15:36
3	09:00 15:42	08:17 16:44	07:08 17:50	06:42 19:59	05:23 21:06	04:24 22:06	04:21 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:37 15:35
4	08:59 15:43	08:15 16:47	07:05 17:53	06:39 20:02	05:20 21:08	04:23 22:07	04:22 22:18	05:15 21:29	06:21 20:09	07:25 18:45	07:34 16:25	08:38 15:34
5	08:59 15:45	08:13 16:49	07:03 17:55	06:36 20:04	05:18 21:10	04:22 22:09	04:23 22:18	05:17 21:26	06:23 20:06	07:27 18:42	07:37 16:23	08:40 15:33
6	08:58 15:46	08:10 16:52	07:00 17:57	06:34 20:06	05:15 21:12	04:21 22:10	04:25 22:17	05:19 21:24	06:25 20:04	07:29 18:39	07:39 16:20	08:42 15:32
7	08:58 15:48	08:08 16:54	06:57 17:59	06:31 20:08	05:13 21:15	04:20 22:11	04:26 22:16	05:21 21:22	06:27 20:01	07:31 18:37	07:41 16:18	08:43 15:32
8	08:57 15:49	08:06 16:56	06:55 18:02	06:28 20:10	05:11 21:17	04:19 22:12	04:27 22:15	05:23 21:19	06:30 19:58	07:34 18:34	07:44 16:16	08:45 15:31
9	08:56 15:51	08:04 16:59	06:52 18:04	06:25 20:13	05:09 21:19	04:18 22:13	04:28 22:14	05:26 21:17	06:32 19:55	07:36 18:31	07:46 16:14	08:46 15:30
10	08:55 15:53	08:01 17:01	06:49 18:06	06:23 20:15	05:06 21:21	04:18 22:14	04:30 22:13	05:28 21:15	06:34 19:52	07:38 18:28	07:48 16:12	08:48 15:30
11	08:54 15:55	07:59 17:03	06:46 18:08	06:20 20:17	05:04 21:23	04:17 22:15	04:31 22:12	05:30 21:12	06:36 19:50	07:40 18:26	07:51 16:10	08:49 15:30
12	08:53 15:56	07:57 17:06	06:44 18:11	06:17 20:19	05:02 21:25	04:16 22:16	04:33 22:10	05:32 21:19	06:38 19:47	07:42 18:23	07:53 16:07	08:50 15:29
13	08:52 15:58	07:54 17:08	06:41 18:13	06:14 20:22	05:00 21:27	04:16 22:17	04:34 22:09	05:34 21:07	06:40 19:44	07:44 18:20	07:55 16:05	08:51 15:29
14	08:51 16:00	07:52 17:11	06:38 18:15	06:12 20:24	04:58 21:29	04:16 22:18	04:36 22:08	05:36 21:05	06:42 19:41	07:47 18:18	07:57 16:03	08:53 15:29
15	08:50 16:02	07:49 17:13	06:35 18:17	06:09 20:26	04:56 21:32	04:15 22:19	04:37 22:06	05:38 21:02	06:44 19:38	07:49 18:15	08:00 16:02	08:54 15:29
16	08:48 16:04	07:47 17:15	06:32 18:20	06:06 20:28	04:53 21:34	04:15 22:19	04:39 22:05	05:40 21:00	06:46 19:35	07:51 18:12	08:02 16:00	08:55 15:29
17	08:47 16:06	07:44 17:18	06:30 18:22	06:04 20:30	04:51 21:36	04:15 22:20	04:40 22:03	05:43 20:57	06:49 19:33	07:53 18:10	08:04 15:58	08:56 15:29
18	08:46 16:08	07:42 17:20	06:27 18:24	06:01 20:33	04:49 21:38	04:15 22:20	04:42 22:02	05:45 20:55	06:51 19:30	07:56 18:07	08:06 15:56	08:56 15:29
19	08:44 16:10	07:39 17:22	06:24 18:26	05:58 20:35	04:48 21:40	04:15 22:21	04:44 22:00	05:47 20:52	06:53 19:27	07:58 18:04	08:09 15:54	08:57 15:29
20	08:43 16:13	07:37 17:25	06:21 18:29	05:56 20:37	04:46 21:42	04:15 22:21	04:46 21:59	05:49 20:50	06:55 19:24	08:00 18:02	08:11 15:52	08:58 15:29
21	08:41 16:15	07:34 17:27	06:18 18:31	05:53 20:39	04:44 21:44	04:15 22:22	04:47 21:57	05:51 20:47	06:57 19:21	08:02 17:59	08:13 15:51	08:59 15:30
22	08:40 16:17	07:32 17:29	06:16 18:33	05:50 20:41	04:42 21:45	04:15 22:22	04:49 21:55	05:53 20:44	06:59 19:19	08:05 17:57	08:15 15:49	08:59 15:30
23	08:38 16:19	07:29 17:32	06:13 18:35	05:48 20:44	04:40 21:47	04:15 22:22	04:51 21:53	05:55 20:42	07:01 19:16	08:07 17:54	08:17 15:48	09:00 15:31
24	08:36 16:21	07:27 17:34	06:10 18:37	05:45 20:46	04:38 21:49	04:15 22:22	04:53 21:52	05:58 20:39	07:03 19:13	08:09 17:51	08:19 15:46	09:00 15:31
25	08:34 16:24	07:24 17:36	06:07 18:40	05:43 20:48	04:37 21:51	04:16 22:22	04:55 21:50	06:00 20:36	07:06 19:10	07:11 16:49	08:21 15:45	09:00 15:32
26	08:33 16:26	07:21 17:39	06:04 18:42	05:40 20:50	04:35 21:53	04:16 22:22	04:57 21:48	06:02 20:34	07:08 19:07	07:14 16:46	08:23 15:43	09:01 15:33
27	08:31 16:28	07:19 17:41	06:02 18:44	05:37 20:53	04:34 21:55	04:17 22:22	04:59 21:46	06:04 20:31	07:10 19:04	07:16 16:44	08:25 15:42	09:01 15:34
28	08:29 16:30	07:16 17:43	05:59 18:46	05:35 20:55	04:32 21:56	04:17 22:21	05:01 21:44	06:06 20:28	07:12 19:02	07:18 16:41	08:27 15:41	09:01 15:34
29	08:27 16:33		05:56 19:48	05:32 20:57	04:31 21:58	04:18 22:21	05:03 21:42	06:08 20:26	07:14 18:59	07:21 16:39	08:29 15:39	09:01 15:35
30	08:25 16:35		05:53 19:51	05:30 20:59	04:29 22:00	04:19 22:21	05:05 21:40	06:10 20:23	07:16 18:56	07:23 16:37	08:31 15:38	09:01 15:36
31	08:23 16:37		05:50 19:53		04:28 22:01		05:07 21:38	06:13 20:20		07:25 16:34		09:01 15:38
Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Merkela iela 21 - Shadow Receptor: 1.0×1.0 Azimuth: 3.1° Slope: 90.0° (628)
 Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:27 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
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3	09:00 15:42	08:17 16:44	07:08 17:50	06:42 19:59	05:23 21:06	04:24 22:06	04:21 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:37 15:35
4	08:59 15:43	08:15 16:47	07:05 17:53	06:39 20:02	05:20 21:08	04:23 22:07	04:22 22:18	05:15 21:29	06:21 20:09	07:25 18:45	07:34 16:25	08:38 15:34
5	08:59 15:45	08:13 16:49	07:03 17:55	06:36 20:04	05:18 21:10	04:22 22:09	04:23 22:18	05:17 21:26	06:23 20:06	07:27 18:42	07:37 16:23	08:40 15:33
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7	08:58 15:48	08:08 16:54	06:57 17:59	06:31 20:08	05:13 21:15	04:20 22:11	04:26 22:16	05:21 21:22	06:27 20:01	07:31 18:37	07:41 16:18	08:43 15:32
8	08:57 15:49	08:06 16:56	06:55 18:02	06:28 20:10	05:11 21:17	04:19 22:12	04:27 22:15	05:23 21:19	06:30 19:58	07:34 18:34	07:44 16:16	08:45 15:31
9	08:56 15:51	08:04 16:59	06:52 18:04	06:25 20:13	05:09 21:19	04:18 22:13	04:28 22:14	05:26 21:17	06:32 19:55	07:36 18:31	07:46 16:14	08:46 15:30
10	08:55 15:53	08:01 17:01	06:49 18:06	06:23 20:15	05:06 21:21	04:18 22:14	04:30 22:13	05:28 21:15	06:34 19:52	07:38 18:28	07:48 16:12	08:48 15:30
11	08:54 15:55	07:59 17:03	06:46 18:08	06:20 20:17	05:04 21:23	04:17 22:15	04:31 22:12	05:30 21:12	06:36 19:50	07:40 18:26	07:51 16:10	08:49 15:30
12	08:53 15:56	07:57 17:06	06:44 18:11	06:17 20:19	05:02 21:25	04:16 22:16	04:33 22:10	05:32 21:19	06:38 19:47	07:42 18:23	07:53 16:07	08:50 15:29
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14	08:51 16:00	07:52 17:11	06:38 18:15	06:12 20:24	04:58 21:29	04:16 22:18	04:36 22:08	05:36 21:05	06:42 19:41	07:47 18:18	07:57 16:03	08:53 15:29
15	08:50 16:02	07:49 17:13	06:35 18:17	06:09 20:26	04:56 21:32	04:15 22:19	04:37 22:06	05:38 21:02	06:44 19:38	07:49 18:15	08:00 16:02	08:54 15:29
16	08:48 16:04	07:47 17:15	06:32 18:20	06:06 20:28	04:53 21:34	04:15 22:19	04:39 22:05	05:40 21:00	06:46 19:35	07:51 18:12	08:02 16:00	08:55 15:29
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19	08:44 16:10	07:39 17:22	06:24 18:26	05:58 20:35	04:48 21:40	04:15 22:21	04:44 22:00	05:47 20:52	06:53 19:27	07:58 18:04	08:09 15:54	08:57 15:29
20	08:43 16:13	07:37 17:25	06:21 18:29	05:56 20:37	04:46 21:42	04:15 22:21	04:46 21:59	05:49 20:50	06:55 19:24	08:00 18:02	08:11 15:52	08:58 15:29
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22	08:40 16:17	07:32 17:29	06:16 18:33	05:50 20:41	04:42 21:45	04:15 22:22	04:49 21:55	05:53 20:44	06:59 19:19	08:05 17:57	08:15 15:49	08:59 15:30
23	08:38 16:19	07:29 17:32	06:13 18:35	05:48 20:44	04:40 21:47	04:15 22:22	04:51 21:53	05:55 20:42	07:01 19:16	08:07 17:54	08:17 15:48	09:00 15:31
24	08:36 16:21	07:27 17:34	06:10 18:37	05:45 20:46	04:38 21:49	04:15 22:22	04:53 21:52	05:58 20:39	07:03 19:13	08:09 17:51	08:19 15:46	09:00 15:31
25	08:34 16:24	07:24 17:36	06:07 18:40	05:43 20:48	04:37 21:51	04:16 22:22	04:55 21:50	06:00 20:36	07:06 19:10	07:11 16:49	08:21 15:45	09:00 15:32
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29	08:27 16:33		05:56 19:48	05:32 20:57	04:31 21:58	04:18 22:21	05:03 21:42	06:08 20:26	07:14 18:59	07:21 16:39	08:29 15:39	09:01 15:35
30	08:25 16:35		05:53 19:51	05:30 20:59	04:29 22:00	04:19 22:21	05:05 21:40	06:10 20:23	07:16 18:56	07:23 16:37	08:31 15:38	09:01 15:36
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Total, worst case												
Sun reduction												
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Table layout: For each day in each month the following matrix apply

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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Merkela iela 23 - Shadow Receptor: 1.0×1.0 Azimuth: 3.1° Slope: 90.0° (602)
 Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
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2	09:00 15:40	08:19 16:42	07:11 17:48	06:45 19:57	05:25 21:04	04:25 22:04	04:20 22:20	05:11 21:33	06:17 20:15	07:21 18:51	07:30 16:29	08:35 15:36
3	09:00 15:42	08:17 16:44	07:08 17:50	06:42 19:59	05:23 21:06	04:24 22:06	04:21 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:37 15:35
4	08:59 15:43	08:15 16:47	07:05 17:53	06:39 20:02	05:20 21:08	04:23 22:07	04:22 22:18	05:15 21:29	06:21 20:09	07:25 18:45	07:34 16:25	08:38 15:34
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8	08:57 15:49	08:06 16:56	06:55 18:02	06:28 20:10	05:11 21:17	04:19 22:12	04:27 22:15	05:23 21:19	06:30 19:58	07:34 18:34	07:44 16:16	08:45 15:31
9	08:56 15:51	08:04 16:59	06:52 18:04	06:25 20:13	05:09 21:19	04:18 22:13	04:28 22:14	05:26 21:17	06:32 19:55	07:36 18:31	07:46 16:14	08:46 15:30
10	08:55 15:53	08:01 17:01	06:49 18:06	06:23 20:15	05:06 21:21	04:18 22:14	04:30 22:13	05:28 21:15	06:34 19:52	07:38 18:28	07:48 16:12	08:48 15:30
11	08:54 15:55	07:59 17:03	06:46 18:08	06:20 20:17	05:04 21:23	04:17 22:15	04:31 22:12	05:30 21:12	06:36 19:50	07:40 18:26	07:51 16:10	08:49 15:30
12	08:53 15:56	07:57 17:06	06:44 18:11	06:17 20:19	05:02 21:25	04:16 22:16	04:33 22:10	05:32 21:19	06:38 19:47	07:42 18:23	07:53 16:07	08:50 15:29
13	08:52 15:58	07:54 17:08	06:41 18:13	06:14 20:22	05:00 21:27	04:16 22:17	04:34 22:09	05:34 21:07	06:40 19:44	07:44 18:20	07:55 16:05	08:51 15:29
14	08:51 16:00	07:52 17:11	06:38 18:15	06:12 20:24	04:58 21:29	04:16 22:18	04:36 22:08	05:36 21:05	06:42 19:41	07:47 18:18	07:57 16:03	08:53 15:29
15	08:50 16:02	07:49 17:13	06:35 18:17	06:09 20:26	04:56 21:32	04:15 22:19	04:37 22:06	05:38 21:02	06:44 19:38	07:49 18:15	08:00 16:02	08:54 15:29
16	08:48 16:04	07:47 17:15	06:32 18:20	06:06 20:28	04:53 21:34	04:15 22:19	04:39 22:05	05:40 21:00	06:46 19:35	07:51 18:12	08:02 16:00	08:55 15:29
17	08:47 16:06	07:44 17:18	06:30 18:22	06:04 20:30	04:51 21:36	04:15 22:20	04:40 22:03	05:43 20:57	06:49 19:33	07:53 18:10	08:04 15:58	08:56 15:29
18	08:46 16:08	07:42 17:20	06:27 18:24	06:01 20:33	04:49 21:38	04:15 22:20	04:42 22:02	05:45 20:55	06:51 19:30	07:56 18:07	08:06 15:56	08:56 15:29
19	08:44 16:10	07:39 17:22	06:24 18:26	05:58 20:35	04:48 21:40	04:15 22:21	04:44 22:00	05:47 20:52	06:53 19:27	07:58 18:04	08:09 15:54	08:57 15:29
20	08:43 16:13	07:37 17:25	06:21 18:29	05:56 20:37	04:46 21:42	04:15 22:21	04:46 21:59	05:49 20:50	06:55 19:24	08:00 18:02	08:11 15:52	08:58 15:29
21	08:41 16:15	07:34 17:27	06:18 18:31	05:53 20:39	04:44 21:44	04:15 22:21	04:47 21:57	05:51 20:47	06:57 19:21	08:02 17:59	08:13 15:51	08:59 15:30
22	08:40 16:17	07:32 17:29	06:16 18:33	05:50 20:41	04:42 21:45	04:15 22:22	04:49 21:55	05:53 20:44	06:59 19:19	08:05 17:57	08:15 15:49	08:59 15:30
23	08:38 16:19	07:29 17:32	06:13 18:35	05:48 20:44	04:40 21:47	04:15 22:22	04:51 21:53	05:55 20:42	07:01 19:16	08:07 17:54	08:17 15:48	09:00 15:31
24	08:36 16:21	07:27 17:34	06:10 18:37	05:45 20:46	04:38 21:49	04:15 22:22	04:53 21:52	05:58 20:39	07:03 19:13	08:09 17:51	08:19 15:46	09:00 15:31
25	08:34 16:24	07:24 17:36	06:07 18:40	05:43 20:48	04:37 21:51	04:16 22:22	04:55 21:50	06:00 20:36	07:06 19:10	07:11 16:49	08:21 15:45	09:00 15:32
26	08:33 16:26	07:21 17:39	06:04 18:42	05:40 20:50	04:35 21:53	04:16 22:22	04:57 21:48	06:02 20:34	07:08 19:07	07:14 16:46	08:23 15:43	09:01 15:33
27	08:31 16:28	07:19 17:41	06:02 18:44	05:37 20:53	04:34 21:55	04:17 22:22	04:59 21:46	06:04 20:31	07:10 19:04	07:16 16:44	08:25 15:42	09:01 15:34
28	08:29 16:30	07:16 17:43	05:59 18:46	05:35 20:55	04:32 21:56	04:17 22:21	05:01 21:44	06:06 20:28	07:12 19:02	07:18 16:41	08:27 15:41	09:01 15:34
29	08:27 16:33		06:56 19:48	05:32 20:57	04:31 21:58	04:18 22:21	05:03 21:42	06:08 20:26	07:14 18:59	07:21 16:39	08:29 15:39	09:01 15:35
30	08:25 16:35		06:53 19:51	05:30 20:59	04:29 22:00	04:19 22:21	05:05 21:40	06:10 20:23	07:16 18:56	07:23 16:37	08:31 15:38	09:01 15:36
31	08:23 16:37		06:50 19:53		04:28 22:01		05:07 21:38	06:13 20:20		07:25 16:34		09:01 15:38
Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Mež males - Shadow Receptor: 1.0×1.0 Azimuth: 3.1° Slope: 90.0° (769)
 Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:14 17:46	06:48 19:55	05:28 21:02	04:27 22:03	04:20 22:20	05:09 21:36	06:15 20:18	07:19 18:54	07:28 16:32	08:33 15:37
2	09:00 15:41	08:19 16:42	07:11 17:48	06:45 19:57	05:25 21:04	04:26 22:04	04:21 22:20	05:11 21:33	06:17 20:15	07:21 18:51	07:30 16:30	08:35 15:36
3	09:00 15:42	08:17 16:45	07:08 17:51	06:42 20:00	05:23 21:06	04:24 22:06	04:22 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:37 15:35
4	09:00 15:43	08:15 16:47	07:06 17:53	06:40 20:02	05:20 21:08	04:23 22:07	04:23 22:18	05:15 21:29	06:21 20:09	07:25 18:45	07:35 16:25	08:38 15:34
5	08:59 15:45	08:13 16:49	07:03 17:55	06:37 20:04	05:18 21:10	04:22 22:09	04:24 22:18	05:17 21:27	06:23 20:06	07:27 18:42	07:37 16:23	08:40 15:33
6	08:58 15:46	08:11 16:52	07:00 17:57	06:34 20:06	05:16 21:13	04:21 22:10	04:25 22:17	05:20 21:24	06:26 20:04	07:29 18:40	07:39 16:21	08:42 15:33
7	08:58 15:48	08:08 16:54	06:57 18:00	06:31 20:08	05:13 21:15	04:20 22:11	04:26 22:16	05:22 21:22	06:28 20:01	07:32 18:37	07:42 16:18	08:43 15:32
8	08:57 15:50	08:06 16:57	06:55 18:02	06:28 20:11	05:11 21:17	04:20 22:12	04:27 22:15	05:24 21:20	06:30 19:58	07:34 18:34	07:44 16:16	08:45 15:31
9	08:56 15:51	08:04 16:59	06:52 18:04	06:26 20:13	05:09 21:19	04:19 22:13	04:29 22:14	05:26 21:17	06:32 19:55	07:36 18:31	07:46 16:14	08:46 15:31
10	08:55 15:53	08:02 17:01	06:49 18:06	06:23 20:15	05:07 21:21	04:18 22:15	04:30 22:13	05:28 21:15	06:34 19:53	07:38 18:29	07:48 16:12	08:48 15:30
11	08:54 15:55	07:59 17:04	06:46 18:09	06:20 20:17	05:04 21:23	04:17 22:16	04:31 22:12	05:30 21:12	06:36 19:50	07:40 18:26	07:51 16:10	08:49 15:30
12	08:53 15:57	07:57 17:06	06:44 18:11	06:17 20:20	05:02 21:25	04:17 22:16	04:33 22:11	05:32 21:10	06:38 19:47	07:42 18:23	07:53 16:08	08:50 15:30
13	08:52 15:59	07:54 17:08	06:41 18:13	06:15 20:22	05:00 21:28	04:16 22:17	04:34 22:09	05:34 21:08	06:40 19:44	07:45 18:21	07:55 16:06	08:52 15:29
14	08:51 16:01	07:52 17:11	06:38 18:15	06:12 20:24	04:58 21:30	04:16 22:18	04:36 22:08	05:36 21:05	06:42 19:41	07:47 18:18	07:58 16:04	08:53 15:29
15	08:50 16:03	07:50 17:13	06:35 18:18	06:09 20:26	04:56 21:32	04:15 22:19	04:37 22:07	05:39 21:03	06:45 19:39	07:49 18:15	08:00 16:02	08:54 15:29
16	08:49 16:05	07:47 17:16	06:33 18:20	06:07 20:28	04:54 21:34	04:15 22:19	04:39 22:05	05:41 21:00	06:47 19:36	07:51 18:13	08:02 16:00	08:55 15:29
17	08:47 16:07	07:45 17:18	06:30 18:22	06:04 20:31	04:52 21:36	04:15 22:20	04:41 22:04	05:43 20:57	06:49 19:33	07:54 18:10	08:04 15:58	08:56 15:29
18	08:46 16:09	07:42 17:20	06:27 18:24	06:01 20:33	04:50 21:38	04:15 22:21	04:42 22:02	05:45 20:55	06:51 19:30	07:56 18:07	08:07 15:56	08:57 15:29
19	08:44 16:11	07:40 17:23	06:24 18:27	05:59 20:35	04:48 21:40	04:15 22:21	04:44 22:00	05:47 20:52	06:53 19:27	07:58 18:05	08:09 15:54	08:57 15:29
20	08:43 16:13	07:37 17:25	06:21 18:29	05:56 20:37	04:46 21:42	04:15 22:21	04:46 21:59	05:49 20:50	06:55 19:24	08:00 18:02	08:11 15:53	08:58 15:30
21	08:41 16:15	07:35 17:27	06:19 18:31	05:53 20:39	04:44 21:44	04:15 22:22	04:48 21:57	05:51 20:47	06:57 19:22	08:03 17:59	08:13 15:51	08:59 15:30
22	08:40 16:17	07:32 17:30	06:16 18:33	05:51 20:42	04:42 21:46	04:15 22:22	04:50 21:55	05:54 20:44	06:59 19:19	08:05 17:57	08:15 15:49	08:59 15:30
23	08:38 16:19	07:29 17:32	06:13 18:35	05:48 20:44	04:40 21:48	04:15 22:22	04:51 21:54	05:56 20:42	07:01 19:16	08:07 17:54	08:17 15:48	09:00 15:31
24	08:36 16:22	07:27 17:34	06:10 18:38	05:45 20:46	04:39 21:49	04:16 22:22	04:53 21:52	05:58 20:39	07:04 19:13	08:09 17:52	08:19 15:46	09:00 15:32
25	08:35 16:24	07:24 17:37	06:07 18:40	05:43 20:48	04:37 21:51	04:16 22:22	04:55 21:50	06:00 20:37	07:06 19:10	07:12 16:49	08:21 15:45	09:01 15:32
26	08:33 16:26	07:22 17:39	06:05 18:42	05:40 20:51	04:35 21:53	04:17 22:22	04:57 21:48	06:02 20:34	07:08 19:08	07:14 16:47	08:24 15:43	09:01 15:33
27	08:31 16:28	07:19 17:41	06:02 18:44	05:38 20:53	04:34 21:55	04:17 22:22	04:59 21:46	06:04 20:31	07:10 19:05	07:16 16:44	08:26 15:42	09:01 15:34
28	08:29 16:31	07:16 17:44	05:59 18:46	05:35 20:55	04:32 21:56	04:18 22:22	05:01 21:44	06:06 20:28	07:12 19:02	07:19 16:42	08:27 15:41	09:01 15:35
29	08:27 16:33		06:56 19:49	05:33 20:57	04:31 21:58	04:18 22:21	05:03 21:42	06:09 20:26	07:14 18:59	07:21 16:39	08:29 15:40	09:01 15:36
30	08:25 16:35		06:53 19:51	05:30 20:59	04:30 22:00	04:19 22:21	05:05 21:40	06:11 20:23	07:16 18:56	07:23 16:37	08:31 15:38	09:01 15:37
31	08:23 16:38		06:51 19:53		04:28 22:01		05:07 21:38	06:13 20:20		07:25 16:34		09:01 15:38
Potential sun hours	227	262	365	429	515	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Flickering_Valka_Siemens_Gamesa

SIA Estonian, Latvian & Lithuanian environment
Vilandes 3-6
LV-1010 Riga
0037167242411
Baiba / baiba.ozolina@environment.lv
Calculated:
15/01/2026 18:42/4.1.254

Calculation: Flickering_Valka_Siemens_Gameasa Shadow receptor: Mež vini 1 - Shadow Receptor: 1.0 x 1.0 Azimuth: 3.1° Slope: 90.0° (468)
Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) []
Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec.

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

		January	February	March	April	May	June	July	August	September	October	November	December
1	09:00	08:21		07:13		06:47	05:27	04:27	04:20	05:09	06:15		
	15:39	16:40		17:46		19:55	21:01	22:02	22:20	21:35	20:17	17:56 (2)	07:27
2	09:00	08:19		07:11		06:45	05:25	04:25	04:21	05:11	06:17	18:53	17
	15:40	16:42		17:48		19:57	21:03	22:04	22:19	21:33	20:14	18:13 (2)	16:32
3	08:59	08:17		07:08		06:42	05:23	04:24	04:21	05:13	06:19	17:55 (2)	07:30
	15:42	16:44		17:50		19:59	21:06	22:05	22:19	21:31	20:12	18:13 (2)	16:29
4	08:59	08:15		07:05	17:21 (2)	06:39	05:20	04:23	04:22	05:15	06:21	17:54 (2)	07:32
	15:43	16:47	3	16:11 (4)	17:52	1	21:08	22:07	22:18	21:28	20:09	18:13 (2)	16:27
5	08:59	08:12		07:02	17:19 (2)	06:36	05:18	04:22	04:24	05:17	06:23	17:53 (2)	07:34
	15:45	16:49	6	16:14 (4)	17:55	6	21:25 (2)	22:04	22:17	21:26	20:06	18:13 (2)	16:25
6	08:58	08:10		07:00	17:18 (2)	06:34	05:10	04:21	04:25	05:19	06:25	17:53 (2)	07:39
	15:46	16:52	10	16:16 (4)	17:57	10	21:28 (2)	22:06	22:16	21:24	20:03	18:07 (2)	16:20
7	08:57	08:08		06:57	17:17 (2)	06:31	05:13	04:20	04:26	05:21	06:27	17:53 (2)	07:41
	15:48	16:54	13	16:19 (4)	17:59	13	21:30 (2)	22:08	22:14	22:15	21:22	18:04 (2)	16:18
8	08:56	08:06		06:54	17:16 (2)	06:28	05:11	04:19	04:27	05:23	06:29	17:54 (2)	07:43
	15:49	16:56	16	16:22 (4)	18:02	16	21:32 (2)	22:10	22:16	22:15	21:19	18:01 (2)	16:16
9	08:56	08:03		06:52	17:16 (2)	06:25	05:09	04:18	04:28	05:26	06:32	17:55 (2)	07:46
	15:51	16:59	19	16:25 (4)	18:04	18	21:34 (2)	22:12	22:14	22:14	21:17	17:59 (2)	16:14
10	08:55	08:01		06:49	17:16 (2)	06:23	05:06	04:18	04:30	05:28	06:34	17:53 (2)	07:48
	15:53	17:01	19	16:25 (4)	18:06	19	21:35 (2)	22:15	22:14	22:12	21:14	18:02	16:12
11	08:54	07:59		06:46	17:16 (2)	06:20	05:04	04:17	04:31	05:30	06:36	17:50	16:12
	15:55	17:03	20	16:26 (4)	18:08	19	21:35 (2)	22:15	22:11	22:12	21:12	18:26	16:09
12	08:53	07:56		06:43	17:17 (2)	06:17	05:02	04:17	04:33	05:32	06:38	17:54 (2)	07:53
	15:56	17:06	19	16:25 (4)	18:11	17	21:34 (2)	22:19	22:16	22:10	21:10	18:23	16:07
13	08:51	07:54		06:41	17:17 (2)	06:11	05:00	04:16	04:34	05:30	06:40	18:23	16:07
	15:58	17:08	17	16:25 (4)	18:13	16	21:33 (2)	22:21	22:17	22:09	21:07	18:20	16:05
14	08:51	07:52		06:38	17:18 (2)	06:12	04:58	04:16	04:36	05:36	06:42	18:20	16:05
	16:00	17:11	15	16:23 (4)	18:15	13	21:31 (2)	22:23	22:18	22:07	21:05	18:17	16:03
15	08:49	07:49		06:35	17:21 (2)	06:09	04:56	04:15	04:37	05:38	06:44	18:17	16:02
	16:02	17:13	12	16:21 (4)	18:17	6	21:27 (2)	22:26	22:06	21:0			

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Minutes with flicker	Last time (hh:mm) with flicker
			(WTG causing flicker last time)

Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Mež ares - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (773)
 Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01	08:21	07:14	06:48	05:28	04:27	04:20	05:09	06:15	07:19	07:28	08:33
	15:40	16:40	17:46	19:55	21:02	22:03	22:20	21:36	20:18	18:54	16:32	15:37
2	09:00	08:19	07:11	06:45	05:25	04:26	04:21	05:11	06:17	07:21	07:30	08:35
	15:41	16:42	17:48	19:57	21:04	22:04	22:20	21:33	20:15	18:51	16:30	15:36
3	09:00	08:17	07:08	06:42	05:23	04:25	04:22	05:13	06:19	07:23	07:32	08:37
	15:42	16:45	17:51	20:00	21:06	22:06	22:19	21:31	20:12	18:48	16:27	15:35
4	09:00	08:15	07:06	06:40	05:21	04:23	04:23	05:15	06:21	07:25	07:35	08:38
	15:44	16:47	17:53	20:02	21:08	22:07	22:18	21:29	20:09	18:45	16:25	15:34
5	08:59	08:13	07:03	06:37	05:18	04:22	04:24	05:18	06:24	07:27	07:37	08:40
	15:45	16:50	17:55	20:04	21:10	22:09	22:18	21:27	20:07	18:42	16:23	15:34
6	08:58	08:11	07:00	06:34	05:16	04:21	04:25	05:20	06:26	07:29	07:39	08:42
	15:47	16:52	17:57	20:06	21:13	22:10	22:17	21:24	20:04	18:40	16:21	15:33
7	08:58	08:08	06:57	06:31	05:14	04:21	04:26	05:22	06:28	07:32	07:42	08:43
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	16:24	17:37	18:40	20:48	21:51	22:22	21:50	20:37	19:10	16:49	15:45	15:32
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	16:33		19:49	20:57	21:58	22:21	21:42	20:26	18:59	16:39	15:40	15:36
30	08:25		06:54	05:30	04:30	04:19	05:05	06:11	07:16	07:23	08:31	09:01
	16:35		19:51	20:59	22:00	22:21	21:40	20:23	18:56	16:37	15:39	15:37
31	08:23		06:51		04:28		05:07	06:13		07:25		09:01
	16:38		19:53		22:01		21:38	20:20		16:35		15:38
Potential sun hours	227	262	365	429	515	539	538	474	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Miera iela 2 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (608)
 Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:27 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
2	09:00 15:40	08:19 16:42	07:11 17:48	06:45 19:57	05:25 21:04	04:25 22:04	04:20 22:20	05:11 21:33	06:17 20:15	07:20 18:50	07:30 16:29	08:35 15:36
3	09:00 15:42	08:17 16:44	07:08 17:50	06:42 19:59	05:23 21:06	04:24 22:06	04:21 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:37 15:35
4	08:59 15:43	08:15 16:47	07:05 17:53	06:39 20:02	05:20 21:08	04:23 22:07	04:22 22:18	05:15 21:29	06:21 20:09	07:25 18:45	07:34 16:25	08:38 15:34
5	08:59 15:45	08:13 16:49	07:03 17:55	06:36 20:04	05:18 21:10	04:22 22:08	04:23 22:18	05:17 21:26	06:23 20:06	07:27 18:42	07:37 16:23	08:40 15:33
6	08:58 15:46	08:10 16:52	07:00 17:57	06:34 20:06	05:15 21:12	04:21 22:10	04:25 22:17	05:19 21:24	06:25 20:03	07:29 18:39	07:39 16:20	08:42 15:32
7	08:58 15:48	08:08 16:54	06:57 17:59	06:31 20:08	05:13 21:14	04:20 22:11	04:26 22:16	05:21 21:22	06:27 20:01	07:31 18:37	07:41 16:18	08:43 15:32
8	08:57 15:49	08:06 16:56	06:54 18:02	06:28 20:10	05:11 21:17	04:19 22:12	04:27 22:15	05:23 21:19	06:30 19:58	07:33 18:34	07:44 16:16	08:45 15:31
9	08:56 15:51	08:04 16:59	06:52 18:04	06:25 20:13	05:09 21:19	04:18 22:13	04:28 22:14	05:26 21:17	06:32 19:55	07:36 18:31	07:46 16:14	08:46 15:30
10	08:55 15:53	08:01 17:01	06:49 18:06	06:23 20:15	05:06 21:21	04:18 22:14	04:30 22:13	05:28 21:15	06:34 19:52	07:38 18:28	07:48 16:12	08:48 15:30
11	08:54 15:55	07:59 17:03	06:46 18:08	06:20 20:17	05:04 21:23	04:17 22:15	04:31 22:12	05:30 21:12	06:36 19:49	07:40 18:26	07:51 16:09	08:49 15:30
12	08:53 15:56	07:57 17:06	06:43 18:11	06:17 20:19	05:02 21:25	04:16 22:16	04:33 22:10	05:32 21:10	06:38 19:47	07:42 18:23	07:53 16:07	08:50 15:29
13	08:52 15:58	07:54 17:08	06:41 18:13	06:14 20:21	05:00 21:27	04:16 22:17	04:34 22:09	05:34 21:07	06:40 19:44	07:44 18:20	07:55 16:05	08:51 15:29
14	08:51 16:00	07:52 17:11	06:38 18:15	06:12 20:24	04:58 21:29	04:16 22:18	04:36 22:08	05:36 21:05	06:42 19:41	07:47 18:18	07:57 16:03	08:53 15:29
15	08:50 16:02	07:49 17:13	06:35 18:17	06:09 20:26	04:56 21:31	04:15 22:19	04:37 22:06	05:38 21:02	06:44 19:38	07:49 18:15	08:00 16:02	08:54 15:29
16	08:48 16:04	07:47 17:15	06:32 18:20	06:06 20:28	04:53 21:34	04:15 22:19	04:39 22:05	05:40 21:00	06:46 19:35	07:51 18:12	08:02 16:00	08:55 15:29
17	08:47 16:06	07:44 17:18	06:30 18:22	06:04 20:30	04:51 21:36	04:15 22:20	04:40 22:03	05:43 20:57	06:49 19:33	07:53 18:10	08:04 15:58	08:56 15:29
18	08:46 16:08	07:42 17:20	06:27 18:24	06:01 20:33	04:49 21:38	04:15 22:20	04:42 22:02	05:45 20:55	06:51 19:30	07:56 18:07	08:06 15:56	08:56 15:29
19	08:44 16:10	07:39 17:22	06:24 18:26	05:58 20:35	04:48 21:40	04:14 22:21	04:44 22:00	05:47 20:52	06:53 19:27	07:58 18:04	08:09 15:54	08:57 15:29
20	08:43 16:13	07:37 17:25	06:21 18:29	05:56 20:37	04:46 21:42	04:14 22:21	04:46 21:59	05:49 20:49	06:55 19:24	08:00 18:02	08:11 15:52	08:58 15:29
21	08:41 16:15	07:34 17:27	06:18 18:31	05:53 20:39	04:44 21:43	04:15 22:21	04:47 21:57	05:51 20:47	06:57 19:21	08:02 17:59	08:13 15:51	08:59 15:30
22	08:40 16:17	07:32 17:29	06:16 18:33	05:50 20:41	04:42 21:45	04:15 22:22	04:49 21:55	05:53 20:44	06:59 19:19	08:05 17:57	08:15 15:49	08:59 15:30
23	08:38 16:19	07:29 17:32	06:13 18:35	05:48 20:44	04:40 21:47	04:15 22:22	04:51 21:53	05:55 20:42	07:01 19:16	08:07 17:54	08:17 15:48	09:00 15:31
24	08:36 16:21	07:27 17:34	06:10 18:37	05:45 20:46	04:38 21:49	04:15 22:22	04:53 21:51	05:58 20:39	07:03 19:13	08:09 17:51	08:19 15:46	09:00 15:31
25	08:34 16:24	07:24 17:36	06:07 18:40	05:43 20:48	04:37 21:51	04:16 22:22	04:55 21:50	06:00 20:36	07:05 19:10	07:11 16:49	08:21 15:45	09:00 15:32
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27	08:31 16:28	07:19 17:41	06:02 18:44	05:37 20:52	04:34 21:55	04:17 22:22	04:59 21:46	06:04 20:31	07:10 19:04	07:16 16:44	08:25 15:42	09:01 15:34
28	08:29 16:30	07:16 17:43	05:59 18:46	05:35 20:55	04:32 21:56	04:17 22:21	05:01 21:44	06:06 20:28	07:12 19:02	07:18 16:41	08:27 15:41	09:01 15:34
29	08:27 16:33		06:56 19:48	05:32 20:57	04:31 21:58	04:18 22:21	05:03 21:42	06:08 20:25	07:14 18:59	07:21 16:39	08:29 15:39	09:01 15:35
30	08:25 16:35		06:53 19:51	05:30 20:59	04:29 22:00	04:19 22:21	05:05 21:40	06:10 20:23	07:16 18:56	07:23 16:37	08:31 15:38	09:01 15:36
31	08:23 16:37		06:50 19:53		04:28 22:01		05:07 21:37	06:13 20:20		07:25 16:34		09:01 15:38
Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Miera iela 5 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (738)
 Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:27 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
2	09:00 15:40	08:19 16:42	07:11 17:48	06:45 19:57	05:25 21:04	04:25 22:04	04:20 22:20	05:11 21:33	06:17 20:15	07:20 18:50	07:30 16:29	08:35 15:36
3	09:00 15:42	08:17 16:44	07:08 17:50	06:42 19:59	05:23 21:06	04:24 22:06	04:21 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:37 15:35
4	08:59 15:43	08:15 16:47	07:05 17:53	06:39 20:02	05:20 21:08	04:23 22:07	04:22 22:18	05:15 21:29	06:21 20:09	07:25 18:45	07:34 16:25	08:38 15:34
5	08:59 15:45	08:13 16:49	07:03 17:55	06:36 20:04	05:18 21:10	04:22 22:08	04:23 22:18	05:17 21:26	06:23 20:06	07:27 18:42	07:37 16:23	08:40 15:33
6	08:58 15:46	08:10 16:52	07:00 17:57	06:34 20:06	05:15 21:12	04:21 22:10	04:25 22:17	05:19 21:24	06:25 20:03	07:29 18:39	07:39 16:20	08:42 15:32
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10	08:55 15:53	08:01 17:01	06:49 18:06	06:23 20:15	05:06 21:21	04:18 22:14	04:30 22:13	05:28 21:15	06:34 19:52	07:38 18:28	07:48 16:12	08:48 15:30
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12	08:53 15:56	07:57 17:06	06:43 18:11	06:17 20:19	05:02 21:25	04:16 22:16	04:33 22:10	05:32 21:10	06:38 19:47	07:42 18:23	07:53 16:07	08:50 15:29
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19	08:44 16:10	07:39 17:22	06:24 18:26	05:58 20:35	04:48 21:40	04:14 22:21	04:44 22:00	05:47 20:52	06:53 19:27	07:58 18:04	08:09 15:54	08:57 15:29
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21	08:41 16:15	07:34 17:27	06:18 18:31	05:53 20:39	04:44 21:43	04:15 22:21	04:47 21:57	05:51 20:47	06:57 19:21	08:02 17:59	08:13 15:51	08:59 15:30
22	08:40 16:17	07:32 17:29	06:16 18:33	05:50 20:41	04:42 21:45	04:15 22:22	04:49 21:55	05:53 20:44	06:59 19:19	08:05 17:57	08:15 15:49	08:59 15:30
23	08:38 16:19	07:29 17:32	06:13 18:35	05:48 20:44	04:40 21:47	04:15 22:22	04:51 21:53	05:55 20:42	07:01 19:16	08:07 17:54	08:17 15:48	09:00 15:31
24	08:36 16:21	07:27 17:34	06:10 18:37	05:45 20:46	04:38 21:49	04:15 22:22	04:53 21:51	05:58 20:39	07:03 19:13	08:09 17:51	08:19 15:46	09:00 15:31
25	08:34 16:24	07:24 17:36	06:07 18:40	05:43 20:48	04:37 21:51	04:16 22:22	04:55 21:50	06:00 20:36	07:05 19:10	07:11 16:49	08:21 15:45	09:00 15:32
26	08:33 16:26	07:21 17:39	06:04 18:42	05:40 20:50	04:35 21:53	04:16 22:22	04:57 21:48	06:02 20:34	07:08 19:07	07:14 16:46	08:23 15:43	09:01 15:33
27	08:31 16:28	07:19 17:41	06:02 18:44	05:37 20:52	04:34 21:55	04:17 22:22	04:59 21:46	06:04 20:31	07:10 19:04	07:16 16:44	08:25 15:42	09:01 15:34
28	08:29 16:30	07:16 17:43	05:59 18:46	05:35 20:55	04:32 21:56	04:17 22:21	05:01 21:44	06:06 20:28	07:12 19:02	07:18 16:41	08:27 15:41	09:01 15:34
29	08:27 16:33		06:56 19:48	05:32 20:57	04:31 21:58	04:18 22:21	05:03 21:42	06:08 20:25	07:14 18:59	07:21 16:39	08:29 15:39	09:01 15:35
30	08:25 16:35		06:53 19:51	05:30 20:59	04:29 22:00	04:19 22:21	05:05 21:40	06:10 20:23	07:16 18:56	07:23 16:37	08:31 15:38	09:01 15:36
31	08:23 16:37		06:50 19:53		04:28 22:01		05:07 21:37	06:13 20:20		07:25 16:34		09:01 15:38
Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Miera iela 7 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (632)
 Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:27 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
2	09:00 15:40	08:19 16:42	07:11 17:48	06:45 19:57	05:25 21:04	04:25 22:04	04:20 22:20	05:11 21:33	06:17 20:15	07:20 18:50	07:30 16:29	08:35 15:36
3	09:00 15:42	08:17 16:44	07:08 17:50	06:42 19:59	05:23 21:06	04:24 22:06	04:21 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:37 15:35
4	08:59 15:43	08:15 16:47	07:05 17:53	06:39 20:02	05:20 21:08	04:23 22:07	04:22 22:18	05:15 21:29	06:21 20:09	07:25 18:45	07:34 16:25	08:38 15:34
5	08:59 15:45	08:13 16:49	07:03 17:55	06:36 20:04	05:18 21:10	04:22 22:08	04:23 22:18	05:17 21:26	06:23 20:06	07:27 18:42	07:37 16:23	08:40 15:33
6	08:58 15:46	08:10 16:52	07:00 17:57	06:34 20:06	05:15 21:12	04:21 22:10	04:25 22:17	05:19 21:24	06:25 20:03	07:29 18:39	07:39 16:20	08:42 15:32
7	08:58 15:48	08:08 16:54	06:57 17:59	06:31 20:08	05:13 21:14	04:20 22:11	04:26 22:16	05:21 21:22	06:27 20:01	07:31 18:37	07:41 16:18	08:43 15:32
8	08:57 15:49	08:06 16:56	06:54 18:02	06:28 20:10	05:11 21:17	04:19 22:12	04:27 22:15	05:23 21:19	06:30 19:58	07:33 18:34	07:44 16:16	08:45 15:31
9	08:56 15:51	08:04 16:59	06:52 18:04	06:25 20:13	05:09 21:19	04:18 22:13	04:28 22:14	05:26 21:17	06:32 19:55	07:36 18:31	07:46 16:14	08:46 15:30
10	08:55 15:53	08:01 17:01	06:49 18:06	06:23 20:15	05:06 21:21	04:18 22:14	04:30 22:13	05:28 21:15	06:34 19:52	07:38 18:28	07:48 16:12	08:48 15:30
11	08:54 15:55	07:59 17:03	06:46 18:08	06:20 20:17	05:04 21:23	04:17 22:15	04:31 22:12	05:30 21:12	06:36 19:49	07:40 18:26	07:51 16:09	08:49 15:30
12	08:53 15:56	07:57 17:06	06:43 18:11	06:17 20:19	05:02 21:25	04:16 22:16	04:33 22:10	05:32 21:10	06:38 19:47	07:42 18:23	07:53 16:07	08:50 15:29
13	08:52 15:58	07:54 17:08	06:41 18:13	06:14 20:21	05:00 21:27	04:16 22:17	04:34 22:09	05:34 21:07	06:40 19:44	07:44 18:20	07:55 16:05	08:51 15:29
14	08:51 16:00	07:52 17:11	06:38 18:15	06:12 20:24	04:58 21:29	04:16 22:18	04:36 22:08	05:36 21:05	06:42 19:41	07:47 18:18	07:57 16:03	08:53 15:29
15	08:50 16:02	07:49 17:13	06:35 18:17	06:09 20:26	04:56 21:31	04:15 22:19	04:37 22:06	05:38 21:02	06:44 19:38	07:49 18:15	08:00 16:02	08:54 15:29
16	08:48 16:04	07:47 17:15	06:32 18:20	06:06 20:28	04:53 21:34	04:15 22:19	04:39 22:05	05:40 21:00	06:46 19:35	07:51 18:12	08:02 16:00	08:55 15:29
17	08:47 16:06	07:44 17:18	06:30 18:22	06:04 20:30	04:51 21:36	04:15 22:20	04:40 22:03	05:43 20:57	06:49 19:33	07:53 18:10	08:04 15:58	08:56 15:29
18	08:46 16:08	07:42 17:20	06:27 18:24	06:01 20:33	04:49 21:38	04:15 22:20	04:42 22:02	05:45 20:55	06:51 19:30	07:56 18:07	08:06 15:56	08:56 15:29
19	08:44 16:10	07:39 17:22	06:24 18:26	05:58 20:35	04:48 21:40	04:14 22:21	04:44 22:00	05:47 20:52	06:53 19:27	07:58 18:04	08:09 15:54	08:57 15:29
20	08:43 16:13	07:37 17:25	06:21 18:29	05:56 20:37	04:46 21:42	04:14 22:21	04:46 21:59	05:49 20:49	06:55 19:24	08:00 18:02	08:11 15:52	08:58 15:29
21	08:41 16:15	07:34 17:27	06:18 18:31	05:53 20:39	04:44 21:43	04:15 22:21	04:47 21:57	05:51 20:47	06:57 19:21	08:02 17:59	08:13 15:51	08:59 15:30
22	08:40 16:17	07:32 17:29	06:16 18:33	05:50 20:41	04:42 21:45	04:15 22:22	04:49 21:55	05:53 20:44	06:59 19:19	08:05 17:57	08:15 15:49	08:59 15:30
23	08:38 16:19	07:29 17:32	06:13 18:35	05:48 20:44	04:40 21:47	04:15 22:22	04:51 21:53	05:55 20:42	07:01 19:16	08:07 17:54	08:17 15:48	09:00 15:31
24	08:36 16:21	07:27 17:34	06:10 18:37	05:45 20:46	04:38 21:49	04:15 22:22	04:53 21:51	05:58 20:39	07:03 19:13	08:09 17:51	08:19 15:46	09:00 15:31
25	08:34 16:24	07:24 17:36	06:07 18:40	05:43 20:48	04:37 21:51	04:16 22:22	04:55 21:50	06:00 20:36	07:05 19:10	07:11 16:49	08:21 15:45	09:00 15:32
26	08:33 16:26	07:21 17:39	06:04 18:42	05:40 20:50	04:35 21:53	04:16 22:22	04:57 21:48	06:02 20:34	07:08 19:07	07:14 16:46	08:23 15:43	09:01 15:33
27	08:31 16:28	07:19 17:41	06:02 18:44	05:37 20:52	04:34 21:55	04:17 22:22	04:59 21:46	06:04 20:31	07:10 19:04	07:16 16:44	08:25 15:42	09:01 15:34
28	08:29 16:30	07:16 17:43	05:59 18:46	05:35 20:55	04:32 21:56	04:17 22:21	05:01 21:44	06:06 20:28	07:12 19:02	07:18 16:41	08:27 15:41	09:01 15:34
29	08:27 16:33		06:56 19:48	05:32 20:57	04:31 21:58	04:18 22:21	05:03 21:42	06:08 20:25	07:14 18:59	07:21 16:39	08:29 15:39	09:01 15:35
30	08:25 16:35		06:53 19:51	05:30 20:59	04:29 22:00	04:19 22:21	05:05 21:40	06:10 20:23	07:16 18:56	07:23 16:37	08:31 15:38	09:01 15:36
31	08:23 16:37		06:50 19:53		04:28 22:01		05:07 21:37	06:13 20:20		07:25 16:34		09:01 15:38
Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Muzeja iela 1 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (720) Sunshine probability S (Average daily sunshine hours) []

Assumptions for shadow calculations

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
0.80 1.82 4.75 6.09 9.67 10.05 8.16 7.72 5.94 2.93 0.63 0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:28 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
2	09:00 15:40	08:19 16:42	07:11 17:48	06:45 19:57	05:25 21:04	04:25 22:04	04:21 22:20	05:11 21:33	06:17 20:15	07:21 18:51	07:30 16:29	08:35 15:36
3	09:00 15:42	08:17 16:44	07:08 17:50	06:42 19:59	05:23 21:06	04:24 22:06	04:21 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:37 15:35
4	08:59 15:43	08:15 16:47	07:05 17:53	06:39 20:02	05:20 21:08	04:23 22:07	04:22 22:18	05:15 21:29	06:21 20:09	07:25 18:45	07:35 16:25	08:38 15:34
5	08:59 15:45	08:13 16:49	07:03 17:55	06:37 20:04	05:18 21:10	04:22 22:09	04:24 22:18	05:17 21:26	06:23 20:06	07:27 18:42	07:37 16:23	08:40 15:33
6	08:58 15:46	08:10 16:52	07:00 17:57	06:34 20:06	05:16 21:12	04:21 22:10	04:25 22:17	05:19 21:24	06:25 20:04	07:29 18:39	07:39 16:20	08:42 15:32
7	08:58 15:48	08:08 16:54	06:57 17:59	06:31 20:08	05:13 21:15	04:20 22:11	04:26 22:16	05:21 21:22	06:27 20:01	07:31 18:37	07:41 16:18	08:43 15:32
8	08:57 15:49	08:06 16:56	06:55 18:02	06:28 20:10	05:11 21:17	04:19 22:12	04:27 22:15	05:23 21:20	06:30 19:58	07:34 18:34	07:44 16:16	08:45 15:31
9	08:56 15:51	08:04 16:59	06:52 18:04	06:25 20:13	05:09 21:19	04:18 22:13	04:28 22:14	05:26 21:17	06:32 19:55	07:36 18:31	07:46 16:14	08:46 15:31
10	08:55 15:53	08:01 17:01	06:49 18:06	06:23 20:15	05:06 21:21	04:18 22:14	04:30 22:13	05:28 21:15	06:34 19:52	07:38 18:28	07:48 16:12	08:48 15:30
11	08:54 15:55	07:59 17:04	06:46 18:09	06:20 20:17	05:04 21:23	04:17 22:15	04:31 22:12	05:30 21:12	06:36 19:50	07:40 18:26	07:51 16:10	08:49 15:30
12	08:53 15:57	07:57 17:06	06:44 18:11	06:17 20:19	05:02 21:25	04:17 22:16	04:33 22:10	05:32 21:10	06:38 19:47	07:42 18:23	07:53 16:08	08:50 15:29
13	08:52 15:58	07:54 17:08	06:41 18:13	06:15 20:22	05:00 21:27	04:16 22:17	04:34 22:09	05:34 21:07	06:40 19:44	07:45 18:20	07:55 16:05	08:51 15:29
14	08:51 16:00	07:52 17:11	06:38 18:15	06:12 20:24	04:58 21:29	04:16 22:18	04:36 22:08	05:36 21:05	06:42 19:41	07:47 18:18	07:57 16:04	08:53 15:29
15	08:50 16:02	07:49 17:13	06:35 18:17	06:09 20:26	04:56 21:32	04:15 22:19	04:37 22:06	05:38 21:02	06:44 19:38	07:49 18:15	08:00 16:02	08:54 15:29
16	08:48 16:04	07:47 17:15	06:32 18:20	06:06 20:28	04:54 21:34	04:15 22:19	04:39 22:05	05:41 21:00	06:46 19:35	07:51 18:12	08:02 16:00	08:55 15:29
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18	08:46 16:08	07:42 17:20	06:27 18:24	06:01 20:33	04:50 21:38	04:15 22:20	04:42 22:02	05:45 20:55	06:51 19:30	07:56 18:07	08:06 15:56	08:56 15:29
19	08:44 16:10	07:39 17:22	06:24 18:26	05:58 20:35	04:48 21:40	04:15 22:21	04:44 22:00	05:47 20:52	06:53 19:27	07:58 18:04	08:09 15:54	08:57 15:29
20	08:43 16:13	07:37 17:25	06:21 18:29	05:56 20:37	04:46 21:42	04:15 22:21	04:46 21:59	05:49 20:50	06:55 19:24	08:00 18:02	08:11 15:53	08:58 15:29
21	08:41 16:15	07:34 17:27	06:18 18:31	05:53 20:39	04:44 21:44	04:15 22:22	04:47 21:57	05:51 20:47	06:57 19:21	08:02 17:59	08:13 15:51	08:59 15:30
22	08:40 16:17	07:32 17:30	06:16 18:33	05:50 20:41	04:42 21:45	04:15 22:22	04:49 21:55	05:53 20:44	06:59 19:19	08:05 17:57	08:15 15:49	08:59 15:30
23	08:38 16:19	07:29 17:32	06:13 18:35	05:48 20:44	04:40 21:47	04:15 22:22	04:51 21:53	05:56 20:42	07:01 19:16	08:07 17:54	08:17 15:48	09:00 15:31
24	08:36 16:21	07:27 17:34	06:10 18:37	05:45 20:46	04:39 21:49	04:15 22:22	04:53 21:52	05:58 20:39	07:03 19:13	08:09 17:51	08:19 15:46	09:00 15:31
25	08:34 16:24	07:24 17:37	06:07 18:40	05:43 20:48	04:37 21:51	04:16 22:22	04:55 21:50	06:00 20:36	07:06 19:10	07:11 16:49	08:21 15:45	09:00 15:32
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29	08:27 16:33		06:56 19:48	05:32 20:57	04:31 21:58	04:18 22:21	05:03 21:42	06:08 20:26	07:14 18:59	07:21 16:39	08:29 15:39	09:01 15:35
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Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Last time (hh:mm) with flicker	(WTG causing flicker last time)
	Minutes with flicker		

Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Muzeja iela 10 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (709)
 Sunshine probability S (Average daily sunshine hours) []

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
 0.80 1.82 4.75 6.09 9.67 10.05 8.16 7.72 5.94 2.93 0.63 0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:28 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
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6	08:58 15:46	08:10 16:52	07:00 17:57	06:34 20:06	05:16 21:12	04:21 22:10	04:25 22:17	05:19 21:24	06:25 20:04	07:29 18:39	07:39 16:20	08:42 15:32
7	08:58 15:48	08:08 16:54	06:57 17:59	06:31 20:08	05:13 21:15	04:20 22:11	04:26 22:16	05:21 21:22	06:27 20:01	07:31 18:37	07:41 16:18	08:43 15:32
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9	08:56 15:51	08:04 16:59	06:52 18:04	06:25 20:13	05:09 21:19	04:18 22:13	04:28 22:14	05:26 21:17	06:32 19:55	07:36 18:31	07:46 16:14	08:46 15:31
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31	08:23 16:37		05:50 19:53		04:28 22:01		05:07 21:38	06:13 20:20		07:25 16:34		09:01 15:38
Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Last time (hh:mm) with flicker	(WTG causing flicker last time)
	Minutes with flicker		

Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Muzeja iela 3 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (713)
Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:28 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
2	09:00 15:40	08:19 16:42	07:11 17:48	06:45 19:57	05:25 21:04	04:25 22:04	04:21 22:20	05:11 21:33	06:17 20:15	07:21 18:51	07:30 16:29	08:35 15:36
3	09:00 15:42	08:17 16:44	07:08 17:50	06:42 19:59	05:23 21:06	04:24 22:06	04:21 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:37 15:35
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31	08:23 16:37		06:50 19:53		04:28 22:01		05:07 21:38	06:13 20:20		07:25 16:34		09:01 15:38
Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Muzeja iela 5 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (701)
Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:28 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
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26	08:33 16:26	07:21 17:39	06:04 18:42	05:40 20:50	04:35 21:53	04:16 22:22	04:57 21:48	06:02 20:34	07:08 19:07	07:14 16:46	08:23 15:43	09:01 15:33
27	08:31 16:28	07:19 17:41	06:02 18:44	05:38 20:53	04:34 21:55	04:17 22:22	04:59 21:46	06:04 20:31	07:10 19:05	07:16 16:44	08:25 15:42	09:01 15:34
28	08:29 16:30	07:16 17:43	05:59 18:46	05:35 20:55	04:32 21:56	04:17 22:21	05:01 21:44	06:06 20:28	07:12 19:02	07:18 16:41	08:27 15:41	09:01 15:34
29	08:27 16:33		05:56 19:48	05:32 20:57	04:31 21:58	04:18 22:21	05:03 21:42	06:08 20:26	07:14 18:59	07:21 16:39	08:29 15:39	09:01 15:35
30	08:25 16:35		05:53 19:51	05:30 20:59	04:29 22:00	04:19 22:21	05:05 21:40	06:10 20:23	07:16 18:56	07:23 16:37	08:31 15:38	09:01 15:37
31	08:23 16:37		05:50 19:53		04:28 22:01		05:07 21:38	06:13 20:20		07:25 16:34		09:01 15:38
Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Muzeja iela 6 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (733)
Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:28 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
2	09:00 15:41	08:19 16:42	07:11 17:48	06:45 19:57	05:25 21:04	04:25 22:04	04:21 22:20	05:11 21:33	06:17 20:15	07:21 18:51	07:30 16:29	08:35 15:36
3	09:00 15:42	08:17 16:44	07:08 17:50	06:42 19:59	05:23 21:06	04:24 22:06	04:21 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:37 15:35
4	08:59 15:43	08:15 16:47	07:05 17:53	06:39 20:02	05:20 21:08	04:23 22:07	04:22 22:18	05:15 21:29	06:21 20:09	07:25 18:45	07:34 16:25	08:38 15:34
5	08:59 15:45	08:13 16:49	07:03 17:55	06:37 20:04	05:18 21:10	04:22 22:09	04:24 22:18	05:17 21:26	06:23 20:06	07:27 18:42	07:37 16:23	08:40 15:33
6	08:58 15:46	08:10 16:52	07:00 17:57	06:34 20:06	05:16 21:12	04:21 22:10	04:25 22:17	05:19 21:24	06:25 20:04	07:29 18:39	07:39 16:20	08:42 15:32
7	08:58 15:48	08:08 16:54	06:57 17:59	06:31 20:08	05:13 21:15	04:20 22:11	04:26 22:16	05:21 21:22	06:27 20:01	07:31 18:37	07:41 16:18	08:43 15:32
8	08:57 15:49	08:06 16:56	06:55 18:02	06:28 20:10	05:11 21:17	04:19 22:12	04:27 22:15	05:23 21:19	06:30 19:58	07:34 18:34	07:44 16:16	08:45 15:31
9	08:56 15:51	08:04 16:59	06:52 18:04	06:25 20:13	05:09 21:19	04:18 22:13	04:28 22:14	05:26 21:17	06:32 19:55	07:36 18:31	07:46 16:14	08:46 15:31
10	08:55 15:53	08:01 17:01	06:49 18:06	06:23 20:15	05:06 21:21	04:18 22:14	04:30 22:13	05:28 21:15	06:34 19:52	07:38 18:28	07:48 16:12	08:48 15:30
11	08:54 15:55	07:59 17:04	06:46 18:09	06:20 20:17	05:04 21:23	04:17 22:15	04:31 22:12	05:30 21:12	06:36 19:50	07:40 18:26	07:51 16:10	08:49 15:30
12	08:53 15:57	07:57 17:06	06:44 18:11	06:17 20:19	05:02 21:25	04:17 22:16	04:33 22:10	05:32 21:19	06:38 19:47	07:42 18:23	07:53 16:08	08:50 15:29
13	08:52 15:58	07:54 17:08	06:41 18:13	06:15 20:22	05:00 21:27	04:16 22:17	04:34 22:09	05:34 21:07	06:40 19:44	07:45 18:20	07:55 16:05	08:51 15:29
14	08:51 16:00	07:52 17:11	06:38 18:15	06:12 20:24	04:58 21:29	04:16 22:18	04:36 22:08	05:36 21:05	06:42 19:41	07:47 18:18	07:57 16:04	08:53 15:29
15	08:50 16:02	07:49 17:13	06:35 18:17	06:09 20:26	04:56 21:32	04:15 22:19	04:37 22:06	05:38 21:02	06:44 19:38	07:49 18:15	08:00 16:02	08:54 15:29
16	08:48 16:04	07:47 17:15	06:32 18:20	06:06 20:28	04:54 21:34	04:15 22:19	04:39 22:05	05:41 21:00	06:46 19:35	07:51 18:12	08:02 16:00	08:55 15:29
17	08:47 16:06	07:44 17:18	06:30 18:22	06:04 20:30	04:52 21:36	04:15 22:20	04:40 22:03	05:43 20:57	06:49 19:33	07:53 18:10	08:04 15:58	08:56 15:29
18	08:46 16:08	07:42 17:20	06:27 18:24	06:01 20:33	04:50 21:38	04:15 22:20	04:42 22:02	05:45 20:55	06:51 19:30	07:56 18:07	08:06 15:56	08:56 15:29
19	08:44 16:10	07:39 17:22	06:24 18:26	05:58 20:35	04:48 21:40	04:15 22:21	04:44 22:00	05:47 20:52	06:53 19:27	07:58 18:04	08:09 15:54	08:57 15:29
20	08:43 16:13	07:37 17:25	06:21 18:29	05:56 20:37	04:46 21:42	04:15 22:21	04:46 21:59	05:49 20:50	06:55 19:24	08:00 18:02	08:11 15:53	08:58 15:29
21	08:41 16:15	07:34 17:27	06:18 18:31	05:53 20:39	04:44 21:44	04:15 22:22	04:47 21:57	05:51 20:47	06:57 19:21	08:02 17:59	08:13 15:51	08:59 15:30
22	08:40 16:17	07:32 17:30	06:16 18:33	05:50 20:41	04:42 21:45	04:15 22:22	04:49 21:55	05:53 20:44	06:59 19:19	08:05 17:57	08:15 15:49	08:59 15:30
23	08:38 16:19	07:29 17:32	06:13 18:35	05:48 20:44	04:40 21:47	04:15 22:22	04:51 21:53	05:56 20:42	07:01 19:16	08:07 17:54	08:17 15:48	09:00 15:31
24	08:36 16:21	07:27 17:34	06:10 18:37	05:45 20:46	04:39 21:49	04:15 22:22	04:53 21:52	05:58 20:39	07:03 19:13	08:09 17:51	08:19 15:46	09:00 15:31
25	08:34 16:24	07:24 17:37	06:07 18:40	05:43 20:48	04:37 21:51	04:16 22:22	04:55 21:50	06:00 20:36	07:06 19:10	07:11 16:49	08:21 15:45	09:00 15:32
26	08:33 16:26	07:21 17:39	06:04 18:42	05:40 20:50	04:35 21:53	04:16 22:22	04:57 21:48	06:02 20:34	07:08 19:07	07:14 16:46	08:23 15:43	09:01 15:33
27	08:31 16:28	07:19 17:41	06:02 18:44	05:38 20:53	04:34 21:55	04:17 22:22	04:59 21:46	06:04 20:31	07:10 19:05	07:16 16:44	08:25 15:42	09:01 15:34
28	08:29 16:30	07:16 17:43	05:59 18:46	05:35 20:55	04:32 21:56	04:17 22:21	05:01 21:44	06:06 20:28	07:12 19:02	07:18 16:41	08:27 15:41	09:01 15:35
29	08:27 16:33		05:56 19:48	05:32 20:57	04:31 21:58	04:18 22:21	05:03 21:42	06:08 20:26	07:14 18:59	07:21 16:39	08:29 15:39	09:01 15:35
30	08:25 16:35		05:53 19:51	05:30 20:59	04:29 22:00	04:19 22:21	05:05 21:40	06:10 20:23	07:16 18:56	07:23 16:37	08:31 15:38	09:01 15:37
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Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Muzeja iela 7 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (722)
Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:28 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
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3	09:00 15:42	08:17 16:44	07:08 17:50	06:42 19:59	05:23 21:06	04:24 22:06	04:21 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:37 15:35
4	08:59 15:43	08:15 16:47	07:05 17:53	06:39 20:02	05:20 21:08	04:23 22:07	04:22 22:18	05:15 21:29	06:21 20:09	07:25 18:45	07:34 16:25	08:38 15:34
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7	08:58 15:48	08:08 16:54	06:57 17:59	06:31 20:08	05:13 21:15	04:20 22:11	04:26 22:16	05:21 21:22	06:27 20:01	07:31 18:37	07:41 16:18	08:43 15:32
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9	08:56 15:51	08:04 16:59	06:52 18:04	06:25 20:13	05:09 21:19	04:18 22:13	04:28 22:14	05:26 21:17	06:32 19:55	07:36 18:31	07:46 16:14	08:46 15:31
10	08:55 15:53	08:01 17:01	06:49 18:06	06:23 20:15	05:06 21:21	04:18 22:14	04:30 22:13	05:28 21:15	06:34 19:52	07:38 18:28	07:48 16:12	08:48 15:30
11	08:54 15:55	07:59 17:04	06:46 18:09	06:20 20:17	05:04 21:23	04:17 22:15	04:31 22:12	05:30 21:12	06:36 19:50	07:40 18:26	07:51 16:10	08:49 15:30
12	08:53 15:57	07:57 17:06	06:44 18:11	06:17 20:19	05:02 21:25	04:17 22:16	04:33 22:10	05:32 21:19	06:38 19:47	07:42 18:23	07:53 16:08	08:50 15:29
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19	08:44 16:10	07:39 17:22	06:24 18:26	05:58 20:35	04:48 21:40	04:15 22:21	04:44 22:00	05:47 20:52	06:53 19:27	07:58 18:04	08:09 15:54	08:57 15:29
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22	08:40 16:17	07:32 17:30	06:16 18:33	05:50 20:41	04:42 21:45	04:15 22:22	04:49 21:55	05:53 20:44	06:59 19:19	08:05 17:57	08:15 15:49	08:59 15:30
23	08:38 16:19	07:29 17:32	06:13 18:35	05:48 20:44	04:40 21:47	04:15 22:22	04:51 21:53	05:56 20:42	07:01 19:16	08:07 17:54	08:17 15:48	09:00 15:31
24	08:36 16:21	07:27 17:34	06:10 18:37	05:45 20:46	04:39 21:49	04:15 22:22	04:53 21:52	05:58 20:39	07:03 19:13	08:09 17:51	08:19 15:46	09:00 15:31
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Total, worst case												
Sun reduction												
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Table layout: For each day in each month the following matrix apply

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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Muzeja iela 8 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (696)
Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
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4	08:59 15:43	08:15 16:47	07:05 17:53	06:39 20:02	05:20 21:08	04:23 22:07	04:22 22:18	05:15 21:29	06:21 20:09	07:25 18:45	07:35 16:25	08:38 15:34
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9	08:56 15:51	08:04 16:59	06:52 18:04	06:25 20:13	05:09 21:19	04:18 22:13	04:28 22:14	05:26 21:17	06:32 19:55	07:36 18:31	07:46 16:14	08:46 15:31
10	08:55 15:53	08:01 17:01	06:49 18:06	06:23 20:15	05:06 21:21	04:18 22:14	04:30 22:13	05:28 21:15	06:34 19:52	07:38 18:28	07:48 16:12	08:48 15:30
11	08:54 15:55	07:59 17:04	06:46 18:09	06:20 20:17	05:04 21:23	04:17 22:15	04:31 22:12	05:30 21:12	06:36 19:50	07:40 18:26	07:51 16:10	08:49 15:30
12	08:53 15:57	07:57 17:06	06:44 18:11	06:17 20:19	05:02 21:25	04:17 22:16	04:33 22:10	05:32 21:19	06:38 19:47	07:42 18:23	07:53 16:08	08:50 15:29
13	08:52 15:58	07:54 17:08	06:41 18:13	06:15 20:22	05:00 21:27	04:16 22:17	04:34 22:09	05:34 21:07	06:40 19:44	07:45 18:20	07:55 16:05	08:51 15:29
14	08:51 16:00	07:52 17:11	06:38 18:15	06:12 20:24	04:58 21:29	04:16 22:18	04:36 22:08	05:36 21:05	06:42 19:41	07:47 18:18	07:57 16:04	08:53 15:29
15	08:50 16:02	07:49 17:13	06:35 18:17	06:09 20:26	04:56 21:32	04:15 22:19	04:37 22:06	05:38 21:02	06:44 19:38	07:49 18:15	08:00 16:02	08:54 15:29
16	08:48 16:04	07:47 17:15	06:32 18:20	06:06 20:28	04:54 21:34	04:15 22:19	04:39 22:05	05:41 21:00	06:46 19:35	07:51 18:12	08:02 16:00	08:55 15:29
17	08:47 16:06	07:45 17:18	06:30 18:22	06:04 20:30	04:52 21:36	04:15 22:20	04:40 22:03	05:43 20:57	06:49 19:33	07:53 18:10	08:04 15:58	08:56 15:29
18	08:46 16:08	07:42 17:20	06:27 18:24	06:01 20:33	04:50 21:38	04:15 22:20	04:42 22:02	05:45 20:55	06:51 19:30	07:56 18:07	08:06 15:56	08:56 15:29
19	08:44 16:10	07:39 17:22	06:24 18:26	05:58 20:35	04:48 21:40	04:15 22:21	04:44 22:00	05:47 20:52	06:53 19:27	07:58 18:04	08:09 15:54	08:57 15:29
20	08:43 16:13	07:37 17:25	06:21 18:29	05:56 20:37	04:46 21:42	04:15 22:21	04:46 21:59	05:49 20:50	06:55 19:24	08:00 18:02	08:11 15:53	08:58 15:29
21	08:41 16:15	07:34 17:27	06:18 18:31	05:53 20:39	04:44 21:44	04:15 22:22	04:47 21:57	05:51 20:47	06:57 19:21	08:02 17:59	08:13 15:51	08:59 15:30
22	08:40 16:17	07:32 17:30	06:16 18:33	05:50 20:41	04:42 21:45	04:15 22:22	04:49 21:55	05:53 20:44	06:59 19:19	08:05 17:57	08:15 15:49	08:59 15:30
23	08:38 16:19	07:29 17:32	06:13 18:35	05:48 20:44	04:40 21:47	04:15 22:22	04:51 21:53	05:56 20:42	07:01 19:16	08:07 17:54	08:17 15:48	09:00 15:31
24	08:36 16:21	07:27 17:34	06:10 18:37	05:45 20:46	04:39 21:49	04:15 22:22	04:53 21:52	05:58 20:39	07:03 19:13	08:09 17:51	08:19 15:46	09:00 15:31
25	08:34 16:24	07:24 17:37	06:07 18:40	05:43 20:48	04:37 21:51	04:16 22:22	04:55 21:50	06:00 20:36	07:06 19:10	07:11 16:49	08:21 15:45	09:00 15:32
26	08:33 16:26	07:21 17:39	06:04 18:42	05:40 20:50	04:35 21:53	04:16 22:22	04:57 21:48	06:02 20:34	07:08 19:07	07:14 16:46	08:23 15:43	09:01 15:33
27	08:31 16:28	07:19 17:41	06:02 18:44	05:38 20:53	04:34 21:55	04:17 22:22	04:59 21:46	06:04 20:31	07:10 19:05	07:16 16:44	08:25 15:42	09:01 15:34
28	08:29 16:30	07:16 17:43	05:59 18:46	05:35 20:55	04:32 21:56	04:17 22:21	05:01 21:44	06:06 20:28	07:12 19:02	07:18 16:41	08:27 15:41	09:01 15:35
29	08:27 16:33		05:56 19:48	05:32 20:57	04:31 21:58	04:18 22:21	05:03 21:42	06:08 20:26	07:14 18:59	07:21 16:39	08:29 15:39	09:01 15:35
30	08:25 16:35		05:53 19:51	05:30 20:59	04:29 22:00	04:19 22:21	05:05 21:40	06:10 20:23	07:16 18:56	07:23 16:37	08:31 15:38	09:01 15:37
31	08:23 16:37		05:50 19:53		04:28 22:01		05:07 21:38	06:13 20:20		07:25 16:34		09:01 15:38
Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Muzeja iela 9 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (710) Sunshine probability S (Average daily sunshine hours) []

Assumptions for shadow calculations

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
0.80 1.82 4.75 6.09 9.67 10.05 8.16 7.72 5.94 2.93 0.63 0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:28 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
2	09:00 15:40	08:19 16:42	07:11 17:48	06:45 19:57	05:25 21:04	04:25 22:04	04:21 22:20	05:11 21:33	06:17 20:15	07:21 18:51	07:30 16:29	08:35 15:36
3	09:00 15:42	08:17 16:44	07:08 17:50	06:42 19:59	05:23 21:06	04:24 22:06	04:21 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:37 15:35
4	08:59 15:43	08:15 16:47	07:05 17:53	06:39 20:02	05:20 21:08	04:23 22:07	04:22 22:18	05:15 21:29	06:21 20:09	07:25 18:45	07:35 16:25	08:38 15:34
5	08:59 15:45	08:13 16:49	07:03 17:55	06:37 20:04	05:18 21:10	04:22 22:09	04:24 22:18	05:17 21:26	06:23 20:06	07:27 18:42	07:37 16:23	08:40 15:33
6	08:58 15:46	08:10 16:52	07:00 17:57	06:34 20:06	05:16 21:12	04:21 22:10	04:25 22:17	05:19 21:24	06:25 20:04	07:29 18:39	07:39 16:20	08:42 15:32
7	08:58 15:48	08:08 16:54	06:57 17:59	06:31 20:08	05:13 21:15	04:20 22:11	04:26 22:16	05:21 21:22	06:27 20:01	07:31 18:37	07:41 16:18	08:43 15:32
8	08:57 15:49	08:06 16:56	06:55 18:02	06:28 20:10	05:11 21:17	04:19 22:12	04:27 22:15	05:23 21:20	06:30 19:58	07:34 18:34	07:44 16:16	08:45 15:31
9	08:56 15:51	08:04 16:59	06:52 18:04	06:25 20:13	05:09 21:19	04:18 22:13	04:28 22:14	05:26 21:17	06:32 19:55	07:36 18:31	07:46 16:14	08:46 15:31
10	08:55 15:53	08:01 17:01	06:49 18:06	06:23 20:15	05:06 21:21	04:18 22:14	04:30 22:13	05:28 21:15	06:34 19:52	07:38 18:28	07:48 16:12	08:48 15:30
11	08:54 15:55	07:59 17:04	06:46 18:09	06:20 20:17	05:04 21:23	04:17 22:15	04:31 22:12	05:30 21:12	06:36 19:50	07:40 18:26	07:51 16:10	08:49 15:30
12	08:53 15:57	07:57 17:06	06:44 18:11	06:17 20:19	05:02 21:25	04:17 22:16	04:33 22:10	05:32 21:10	06:38 19:47	07:42 18:23	07:53 16:08	08:50 15:29
13	08:52 15:58	07:54 17:08	06:41 18:13	06:15 20:22	05:00 21:27	04:16 22:17	04:34 22:09	05:34 21:07	06:40 19:44	07:45 18:20	07:55 16:05	08:51 15:29
14	08:51 16:00	07:52 17:11	06:38 18:15	06:12 20:24	04:58 21:29	04:16 22:18	04:36 22:08	05:36 21:05	06:42 19:41	07:47 18:18	07:57 16:04	08:53 15:29
15	08:50 16:02	07:49 17:13	06:35 18:17	06:09 20:26	04:56 21:32	04:15 22:19	04:37 22:06	05:38 21:02	06:44 19:38	07:49 18:15	08:00 16:02	08:54 15:29
16	08:48 16:04	07:47 17:15	06:32 18:20	06:06 20:28	04:54 21:34	04:15 22:19	04:39 22:05	05:41 21:00	06:46 19:35	07:51 18:12	08:02 16:00	08:55 15:29
17	08:47 16:06	07:45 17:18	06:30 18:22	06:04 20:30	04:52 21:36	04:15 22:20	04:40 22:03	05:43 20:57	06:49 19:33	07:53 18:10	08:04 15:58	08:56 15:29
18	08:46 16:08	07:42 17:20	06:27 18:24	06:01 20:33	04:50 21:38	04:15 22:20	04:42 22:02	05:45 20:55	06:51 19:30	07:56 18:07	08:06 15:56	08:56 15:29
19	08:44 16:10	07:39 17:22	06:24 18:26	05:58 20:35	04:48 21:40	04:15 22:21	04:44 22:00	05:47 20:52	06:53 19:27	07:58 18:04	08:09 15:54	08:57 15:29
20	08:43 16:13	07:37 17:25	06:21 18:29	05:56 20:37	04:46 21:42	04:15 22:21	04:46 21:59	05:49 20:50	06:55 19:24	08:00 18:02	08:11 15:53	08:58 15:29
21	08:41 16:15	07:34 17:27	06:18 18:31	05:53 20:39	04:44 21:44	04:15 22:22	04:47 21:57	05:51 20:47	06:57 19:21	08:02 17:59	08:13 15:51	08:59 15:30
22	08:40 16:17	07:32 17:30	06:16 18:33	05:50 20:41	04:42 21:45	04:15 22:22	04:49 21:55	05:53 20:44	06:59 19:19	08:05 17:57	08:15 15:49	08:59 15:30
23	08:38 16:19	07:29 17:32	06:13 18:35	05:48 20:44	04:40 21:47	04:15 22:22	04:51 21:53	05:56 20:42	07:01 19:16	08:07 17:54	08:17 15:48	09:00 15:31
24	08:36 16:21	07:27 17:34	06:10 18:37	05:45 20:46	04:39 21:49	04:15 22:22	04:53 21:52	05:58 20:39	07:03 19:13	08:09 17:51	08:19 15:46	09:00 15:31
25	08:34 16:24	07:24 17:37	06:07 18:40	05:43 20:48	04:37 21:51	04:16 22:22	04:55 21:50	06:00 20:36	07:06 19:10	07:11 16:49	08:21 15:45	09:00 15:32
26	08:33 16:26	07:21 17:39	06:04 18:42	05:40 20:50	04:35 21:53	04:16 22:22	04:57 21:48	06:02 20:34	07:08 19:07	07:14 16:46	08:23 15:43	09:01 15:33
27	08:31 16:28	07:19 17:41	06:02 18:44	05:38 20:53	04:34 21:55	04:17 22:22	04:59 21:46	06:04 20:31	07:10 19:05	07:16 16:44	08:25 15:42	09:01 15:34
28	08:29 16:30	07:16 17:43	05:59 18:46	05:35 20:55	04:32 21:56	04:17 22:21	05:01 21:44	06:06 20:28	07:12 19:02	07:18 16:41	08:27 15:41	09:01 15:35
29	08:27 16:33		05:56 19:48	05:32 20:57	04:31 21:58	04:18 22:21	05:03 21:42	06:08 20:26	07:14 18:59	07:21 16:39	08:29 15:39	09:01 15:35
30	08:25 16:35		05:53 19:51	05:30 20:59	04:29 22:00	04:19 22:21	05:05 21:40	06:10 20:23	07:16 18:56	07:23 16:37	08:31 15:38	09:01 15:37
31	08:23 16:37		05:50 19:53		04:28 22:01		05:07 21:38	06:13 20:20		07:25 16:34		09:01 15:38
Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Last time (hh:mm) with flicker	(WTG causing flicker last time)
	Minutes with flicker		

Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Maja 13 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (499)
Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June
1	09:00	08:21	07:13	06:47	05:27	04:27
	15:39	16:40	17:46	19:55	21:01	22:02
2	09:00	08:19	07:11	06:45	05:25	04:25
	15:40	16:42	17:48	19:57	21:03	22:04
3	08:59	08:17	07:08	06:42	05:23	04:24
	15:42	16:44	17:50	19:59	21:06	22:05
4	08:59	08:14	07:05	06:39	05:20	04:23
	15:43	16:47	17:52	20:01	21:08	22:07
5	08:58	08:12	07:02	06:36	05:18	04:22
	15:45	16:49	17:55	20:04	21:10	22:08
6	08:58	08:10	07:00	06:34	05:15	04:21
	15:46	16:52	17:57	20:06	21:12	22:09
7	08:57	08:08	06:57	17:27 (2)	06:31	05:13
	15:48	16:54	17:59	17:30 (2)	21:14	22:11
8	08:56	15:04 (11)	08:06	16:15 (4)	06:54	17:25 (2)
	15:49	15:05 (11)	16:56	16:22 (4)	18:02	17:32 (2)
9	08:56	15:04 (11)	08:03	16:15 (4)	06:52	17:24 (2)
	15:51	15:07 (11)	16:59	16:25 (4)	18:04	17:34 (2)
10	08:55	15:05 (11)	08:01	16:14 (4)	06:49	17:23 (2)
	15:53	15:09 (11)	17:01	16:27 (4)	18:06	17:36 (2)
11	08:54	15:04 (11)	07:59	16:14 (4)	06:46	17:22 (2)
	15:55	15:11 (11)	17:03	16:30 (4)	18:08	17:39 (2)
12	08:53	15:05 (11)	07:56	16:14 (4)	06:43	17:23 (2)
	15:56	15:13 (11)	17:06	16:32 (4)	18:11	17:42 (2)
13	08:52	15:05 (11)	07:54	16:14 (4)	06:41	17:22 (2)
	15:58	15:15 (11)	17:08	16:34 (4)	18:13	17:41 (2)
14	08:51	15:06 (11)	07:52	16:14 (4)	06:38	17:22 (2)
	16:00	15:18 (11)	17:11	16:33 (4)	18:15	17:40 (2)
15	08:49	15:06 (11)	07:49	16:14 (4)	06:35	17:23 (2)
	16:02	15:20 (11)	17:13	16:32 (4)	18:17	17:39 (2)
16	08:48	15:07 (11)	07:47	16:15 (4)	06:32	17:24 (2)
	16:04	15:23 (11)	17:15	16:32 (4)	18:20	17:37 (2)
17	08:47	15:07 (11)	07:44	16:16 (4)	06:29	17:26 (2)
	16:06	15:23 (11)	17:18	16:31 (4)	18:22	17:36 (2)
18	08:45	15:07 (11)	07:42	16:17 (4)	06:27	17:22 (2)
	16:08	15:23 (11)	17:20	16:29 (4)	18:24	17:37 (2)
19	08:44	15:08 (11)	07:39	16:21 (4)	06:24	17:22 (2)
	16:10	15:22 (11)	17:22	16:26 (4)	18:26	17:36 (2)
20	08:42	15:10 (11)	07:37	16:21	06:21	17:22 (2)
	16:13	15:23 (11)	17:25	18:28	20:37	21:41
21	08:41	15:11 (11)	07:34	16:18	06:18	17:22 (2)
	16:15	15:22 (11)	17:27	18:31	20:39	21:43
22	08:39	15:12 (11)	07:32	16:15	06:15	17:22 (2)
	16:17	15:21 (11)	17:29	18:33	20:41	21:45
23	08:38	15:15 (11)	07:29	16:13	06:13	17:22 (2)
	16:19	15:19 (11)	17:32	18:35	20:43	21:47
24	08:36	15:16 (11)	07:26	16:10	06:10	17:22 (2)
	16:21	17:34	18:37	20:46	21:49	22:21
25	08:34	15:17 (11)	07:24	16:07	06:07	17:22 (2)
	16:24	17:36	18:39	20:48	21:51	22:21
26	08:32	15:18 (11)	07:21	16:04	06:04	17:22 (2)
	16:26	17:39	18:42	20:50	21:52	22:21
27	08:31	15:19 (11)	07:19	16:01	06:01	17:22 (2)
	16:28	17:41	18:44	20:52	21:54	22:21
28	08:29	15:20 (11)	07:16	15:59	05:59	17:22 (2)
	16:30	17:43	18:46	20:54	21:56	22:21
29	08:27	15:21 (11)	07:14	15:56	05:56	17:22 (2)
	16:33	17:46	18:49	20:57	21:58	22:21
30	08:25	15:22 (11)	07:12	15:53	05:53	17:22 (2)
	16:35	17:48	18:51	20:59	21:59	22:20
31	08:23	15:23 (11)	07:10	15:50	05:50	17:22 (2)
	16:37	17:53	18:56	21:01	22:01	22:20
Potential sun hours	227	262	365	429	515	539
Total, worst case	158	172	145			
Sun reduction	0.11	0.19	0.40			
Oper. time red.	1.00	1.00	1.00			
Wind dir. red.	1.00	1.00	1.00			
Total reduction	0.11	0.19	0.40			
Total, real	17	33	58			

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Maja 13 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (499)
Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	July	August	September	October	November	December
1	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	18:02 (2) 18:21 (2)	07:27 16:32
2	04:21 22:19	05:11 21:33	06:17 20:14	07:20 18:50	18:01 (2) 18:19 (2)	16:30 16:29
3	04:21 22:19	05:13 21:31	06:19 20:12	07:22 18:48	18:01 (2) 18:16 (2)	07:32 16:27
4	04:22 22:18	05:15 21:28	06:21 20:09	07:25 18:45	18:01 (2) 18:13 (2)	07:34 16:25
5	04:24 22:17	05:17 21:26	06:23 20:06	07:27 18:42	18:02 (2) 18:11 (2)	07:37 16:22
6	04:25 22:16	05:19 21:24	06:25 20:03	07:29 18:39	18:02 (2) 18:07 (2)	07:39 16:20
7	04:26 22:15	05:21 21:22	06:27 20:01	07:31 18:37	07:41 16:18	08:43 15:32
8	04:27 22:15	05:23 21:19	06:29 19:58	07:33 18:34	07:43 16:16	08:44 15:31
9	04:28 22:14	05:26 21:17	06:32 19:55	07:35 18:31	07:46 16:14	08:46 15:30
10	04:30 22:12	05:28 21:14	06:34 19:52	07:38 18:28	07:48 16:12	08:47 15:30
11	04:31 22:11	05:30 21:12	06:36 19:49	07:40 18:26	07:50 16:09	08:49 15:30
12	04:33 22:10	05:32 21:10	06:38 19:47	07:42 18:23	07:53 16:07	08:50 15:29
13	04:34 22:09	05:34 21:07	06:40 19:44	07:44 18:20	07:55 16:05	08:51 15:29
14	04:36 22:07	05:36 21:05	06:42 19:41	07:46 18:17	07:57 16:03	08:52 15:29
15	04:37 22:06	05:38 21:02	06:44 19:38	07:49 18:15	07:59 16:02	08:53 15:29
16	04:39 22:05	05:40 21:00	06:46 19:35	07:51 18:12	08:02 16:00	08:54 15:29
17	04:40 22:03	05:43 20:57	06:48 19:32	07:53 18:10	08:04 15:58	08:55 15:29
18	04:42 22:02	05:45 20:54	06:51 19:30	07:55 18:07	08:06 15:56	08:56 15:29
19	04:44 22:00	05:47 20:52	06:53 19:27	07:58 18:04	08:08 15:54	14:49 (11) 14:53 (11)
20	04:46 21:58	05:49 20:49	06:55 19:24	08:00 18:02	08:10 15:52	14:47 (11) 14:56 (11)
21	04:47 21:57	05:51 20:47	06:57 19:21	08:02 17:59	08:13 15:51	14:46 (11) 14:57 (11)
22	04:49 21:55	05:53 20:44	06:59 19:18	08:04 17:56	08:15 15:49	14:46 (11) 14:59 (11)
23	04:51 21:53	05:55 20:41	07:01 19:16	08:07 17:54	16:50 (4) 16:58 (4)	08:17 15:48
24	04:53 21:51	05:58 20:39	07:03 19:13	08:09 17:51	16:47 (4) 16:59 (4)	08:19 15:46
25	04:55 21:49	06:00 20:36	07:05 19:10	07:11 16:49	15:46 (4) 16:01 (4)	08:21 15:45
26	04:57 21:47	06:02 20:33	07:07 19:07	18:09 (2) 18:16 (2)	15:45 (4) 16:02 (4)	08:23 15:43
27	04:59 21:45	06:04 20:31	07:10 19:04	18:06 (2) 18:18 (2)	15:44 (4) 16:03 (4)	08:25 15:42
28	05:01 21:43	06:06 20:28	07:12 19:02	18:04 (2) 18:19 (2)	15:43 (4) 16:02 (4)	08:27 15:41
29	05:03 21:41	06:08 20:25	07:14 18:59	18:03 (2) 18:20 (2)	15:44 (4) 16:03 (4)	08:29 15:39
30	05:05 21:39	06:10 20:23	07:16 18:56	18:02 (2) 18:21 (2)	15:43 (4) 16:01 (4)	08:31 15:38
31	05:07 21:37	06:12 20:20		07:25 16:34	15:44 (4) 15:59 (4)	09:00 15:38
Potential sun hours	538	474	386	321	241	207
Total, worst case			70	220	173	16
Sun reduction			0.46	0.28	0.08	0.06
Oper. time red.			1.00	1.00	1.00	1.00
Wind dir. red.			1.00	1.00	1.00	1.00
Total reduction			0.46	0.28	0.08	0.06
Total, real			32	62	14	1

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Maja 14 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (491)
Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January		February		March		April		May		June	
1	09:00		08:21		15:39 (11)	07:13		16:47 (4)	06:47	05:27	04:27	
	15:39		16:40	10	15:49 (11)	17:46	9	16:56 (4)	19:55	21:01	22:02	
2	09:00		08:19		15:42 (11)	07:11			06:45	05:25	04:25	
	15:40		16:42	5	15:47 (11)	17:48			19:57	21:03	22:04	
3	08:59		08:17			07:08			06:42	05:23	04:24	
	15:42		16:44			17:50			19:59	21:05	22:05	
4	08:59		08:14			07:05			06:39	05:20	04:23	
	15:43		16:47			17:52			20:01	21:08	22:07	
5	08:58		08:12			07:02			06:36	05:18	04:22	
	15:45		16:49			17:55			20:04	21:10	22:08	
6	08:58		08:10			07:00			06:34	05:15	04:21	
	15:46		16:52			17:57			20:06	21:12	22:09	
7	08:57		08:08			06:57			06:31	05:13	04:20	
	15:48		16:54			17:59			20:08	21:14	22:11	
8	08:56		08:06			06:54			06:28	05:11	04:19	
	15:49		16:56			18:02			20:10	21:16	22:12	
9	08:56		08:03			06:52			06:25	05:09	04:18	
	15:51		16:59			18:04			20:12	21:19	22:13	
10	08:55		08:01			06:49			06:23	05:06	04:18	
	15:53		17:01			18:06			20:15	21:21	22:14	
11	08:54		07:59			06:46			06:20	05:04	04:17	
	15:55		17:03			18:08			20:17	21:23	22:15	
12	08:53		07:56			06:43			06:17	05:02	04:17	
	15:56		17:06			18:11			20:19	21:25	22:16	
13	08:52		07:54			06:41			06:14	05:00	04:16	
	15:58		17:08			18:13			20:21	21:27	22:17	
14	08:51		07:52			06:38			06:12	04:58	04:16	
	16:00		17:11			18:15			20:23	21:29	22:18	
15	08:49		07:49			06:35			06:09	04:56	04:15	
	16:02		17:13			18:17			20:26	21:31	22:18	
16	08:48		07:47			06:32			06:06	04:53	04:15	
	16:04		17:15			18:20			20:28	21:33	22:19	
17	08:47		07:44			06:29		17:52 (2)	06:04	04:51	04:15	
	16:06		17:18			18:22	1	17:53 (2)	20:30	21:35	22:19	
18	08:45		07:42		16:47 (4)	06:27		17:50 (2)	06:01	04:49	04:15	
	16:08		17:20	1	16:48 (4)	18:24	5	17:55 (2)	20:32	21:37	22:20	
19	08:44		07:39		16:46 (4)	06:24		17:49 (2)	05:58	04:48	04:15	
	16:10		17:22	5	16:51 (4)	18:26	8	17:57 (2)	20:35	21:39	22:20	
20	08:42		07:37		16:44 (4)	06:21		17:48 (2)	05:56	04:46	04:15	
	16:13		17:25	9	16:53 (4)	18:28	11	17:59 (2)	20:37	21:41	22:21	
21	08:41	15:34 (11)	07:34		16:43 (4)	06:18		17:47 (2)	05:53	04:44	04:15	
	16:15	1	15:35 (11)	12	16:55 (4)	18:31	14	18:01 (2)	20:39	21:43	22:21	
22	08:39	15:34 (11)	07:32		16:44 (4)	06:15		17:47 (2)	05:50	04:42	04:15	
	16:17	3	15:37 (11)	14	16:58 (4)	18:33	16	18:03 (2)	20:41	21:45	22:21	
23	08:38	15:34 (11)	07:29		16:43 (4)	06:13		17:47 (2)	05:48	04:40	04:15	
	16:19	6	15:40 (11)	18	17:01 (4)	18:35	18	18:05 (2)	20:43	21:47	22:21	
24	08:36	15:34 (11)	07:26		16:43 (4)	06:10		17:47 (2)	05:45	04:39	04:15	
	16:21	9	15:43 (11)	19	17:02 (4)	18:37	17	18:04 (2)	20:46	21:49	22:21	
25	08:34	15:34 (11)	07:24		16:43 (4)	06:07		17:48 (2)	05:43	04:37	04:16	
	16:24	11	15:45 (11)	19	17:02 (4)	18:39	15	18:03 (2)	20:48	21:51	22:21	
26	08:32	15:35 (11)	07:21		16:44 (4)	06:04		17:49 (2)	05:40	04:35	04:16	
	16:26	13	15:48 (11)	17	17:01 (4)	18:42	12	18:01 (2)	20:50	21:52	22:21	
27	08:31	15:34 (11)	07:19		16:44 (4)	06:01		17:51 (2)	05:37	04:34	04:17	
	16:28	16	15:50 (11)	16	17:00 (4)	18:44	7	17:58 (2)	20:52	21:54	22:21	
28	08:29	15:35 (11)	07:16		16:45 (4)	05:59			05:35	04:32	04:17	
	16:30	16	15:51 (11)	13	16:58 (4)	18:46			20:54	21:56	22:21	
29	08:27	15:36 (11)				06:56			05:32	04:31	04:18	
	16:33	15	15:51 (11)			19:48			20:57	21:58	22:21	
30	08:25	15:37 (11)				06:53			05:30	04:29	04:19	
	16:35	14	15:51 (11)			19:50			20:59	21:59	22:20	
31	08:23	15:37 (11)				06:50				04:28		
	16:37	13	15:50 (11)			19:53				22:01		
Potential sun hours	227		262			365		429	515		539	
Total, worst case	117		158			133						
Sun reduction	0.11		0.19			0.40						
Oper. time red.	1.00		1.00			1.00						
Wind dir. red.	1.00		1.00			1.00						
Total reduction	0.11		0.19			0.40						
Total, real	13		31			54						

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Maja 14 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (491)
Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	July	August	September	October	November	December
1	04:20	05:09	06:15	07:18	07:27	08:33
	22:20	21:35	20:17	18:53	16:32	15:37
2	04:21	05:11	06:17	07:20	07:30	08:34
	22:19	21:33	20:14	18:50	16:29	15:36
3	04:21	05:13	06:19	07:22	07:32	08:36
	22:19	21:31	20:12	18:48	16:27	15:35
4	04:22	05:15	06:21	07:25	07:34	08:38
	22:18	21:28	20:09	18:45	16:25	15:34
5	04:24	05:17	06:23	07:27	07:36	08:40
	22:17	21:26	20:06	18:42	16:22	15:33
6	04:25	05:19	06:25	07:29	07:39	08:41
	22:16	21:24	20:03	18:39	16:20	15:32
7	04:26	05:21	06:27	07:31	07:41	08:43
	22:15	21:22	20:00	18:37	16:18	15:32
8	04:27	05:23	06:29	07:33	07:43	08:44
	22:15	21:19	19:58	18:34	16:16	15:31
9	04:28	05:26	06:32	07:35	07:46	15:13 (11) 08:46
	22:13	21:17	19:55	18:31	16:14	5 15:18 (11) 15:31
10	04:30	05:28	06:34	07:38	07:48	15:10 (11) 08:47
	22:12	21:14	19:52	18:28	16:12	10 15:20 (11) 15:30
11	04:31	05:30	06:36	07:40	07:50	15:09 (11) 08:49
	22:11	21:12	19:49	18:26	16:09	13 15:22 (11) 15:30
12	04:33	05:32	06:38	07:42	17:23 (4) 07:53	15:08 (11) 08:50
	22:10	21:10	19:47	18:23	4 17:27 (4) 16:07	14 15:22 (11) 15:29
13	04:34	05:34	06:40	07:44	17:20 (4) 07:55	15:07 (11) 08:51
	22:09	21:07	19:44	18:20	11 17:31 (4) 16:05	16 15:23 (11) 15:29
14	04:36	05:36	06:42	07:46	17:17 (4) 07:57	15:08 (11) 08:52
	22:07	21:05	19:41	18:17	15 17:32 (4) 16:03	16 15:24 (11) 15:29
15	04:37	05:38	06:44	07:49	17:16 (4) 07:59	15:07 (11) 08:53
	22:06	21:02	19:38	18:15	16 17:32 (4) 16:02	16 15:23 (11) 15:29
16	04:39	05:40	06:46	18:41 (2) 07:51	17:15 (4) 08:02	15:08 (11) 08:54
	22:05	21:00	19:35	6 18:47 (2) 18:12	18 17:33 (4) 16:00	13 15:21 (11) 15:29
17	04:40	05:43	06:48	18:38 (2) 07:53	17:14 (4) 08:04	15:07 (11) 08:55
	22:03	20:57	19:32	11 18:49 (2) 18:09	19 17:33 (4) 15:58	11 15:18 (11) 15:29
18	04:42	05:45	06:51	18:36 (2) 07:55	17:15 (4) 08:06	15:08 (11) 08:56
	22:02	20:54	19:30	14 18:50 (2) 18:07	19 17:34 (4) 15:56	9 15:17 (11) 15:29
19	04:44	05:47	06:53	18:34 (2) 07:58	17:14 (4) 08:08	15:08 (11) 08:57
	22:00	20:52	19:27	17 18:51 (2) 18:04	17 17:31 (4) 15:54	6 15:14 (11) 15:29
20	04:46	05:49	06:55	18:33 (2) 08:00	17:14 (4) 08:10	15:09 (11) 08:58
	21:58	20:49	19:24	18 18:51 (2) 18:02	14 17:28 (4) 15:52	3 15:12 (11) 15:29
21	04:47	05:51	06:57	18:32 (2) 08:02	17:15 (4) 08:13	08:58
	21:57	20:47	19:21	18 18:50 (2) 17:59	11 17:26 (4) 15:51	15:30
22	04:49	05:53	06:59	18:32 (2) 08:04	17:15 (4) 08:15	08:59
	21:55	20:44	19:18	15 18:47 (2) 17:56	7 17:22 (4) 15:49	15:30
23	04:51	05:55	07:01	18:32 (2) 08:07	17:17 (4) 08:17	08:59
	21:53	20:41	19:16	13 18:45 (2) 17:54	3 17:20 (4) 15:48	15:31
24	04:53	05:58	07:03	18:32 (2) 08:09	08:19	09:00
	21:51	20:39	19:13	10 18:42 (2) 17:51	15:46	15:31
25	04:55	06:00	07:05	18:33 (2) 07:11	08:21	09:00
	21:49	20:36	19:10	6 18:39 (2) 16:49	15:45	15:32
26	04:57	06:02	07:07	18:34 (2) 07:13	08:23	09:00
	21:47	20:33	19:07	2 18:36 (2) 16:46	15:43	15:33
27	04:59	06:04	07:10	07:16	08:25	09:00
	21:45	20:31	19:04	16:44	15:42	15:34
28	05:01	06:06	07:12	07:18	08:27	09:01
	21:43	20:28	19:02	16:41	15:41	15:34
29	05:03	06:08	07:14	07:20	08:29	09:01
	21:41	20:25	18:59	16:39	15:39	15:35
30	05:05	06:10	07:16	07:23	08:31	09:01
	21:39	20:23	18:56	16:37	15:38	15:37
31	05:07	06:12		07:25		09:00
	21:37	20:20		16:34		15:38
Potential sun hours	538	474	386	321	241	207
Total, worst case			130	154	132	
Sun reduction			0.46	0.28	0.08	
Oper. time red.			1.00	1.00	1.00	
Wind dir. red.			1.00	1.00	1.00	
Total reduction			0.46	0.28	0.08	
Total, real			60	44	10	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

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Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Maja 16 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (451)
Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June
1	09:00 15:39	08:21 16:40	07:13 17:46	06:47 19:55	05:27 21:01	04:27 22:02
2	09:00 15:40	08:19 16:42	07:11 17:48	06:45 19:57	05:25 21:03	04:25 22:04
3	08:59 15:42	08:17 16:44	07:08 17:50	06:42 19:59	05:23 21:05	04:24 22:05
4	08:59 15:43	08:14 16:47	07:05 17:52	06:39 20:01	05:20 21:08	04:23 22:07
5	08:58 15:45	08:12 16:49	07:02 17:55	06:36 20:04	05:18 21:10	04:22 22:08
6	08:58 15:46	08:10 16:52	07:00 17:57	06:34 20:06	05:15 21:12	04:21 22:09
7	08:57 15:48	08:08 16:54	06:57 17:59	06:31 20:08	05:13 21:14	04:20 22:11
8	08:56 15:49	08:06 16:56	06:54 18:02	06:28 20:10	05:11 21:16	04:19 22:12
9	08:56 15:51	08:03 16:59	06:52 18:04	06:25 20:12	05:09 21:19	04:18 22:13
10	08:55 15:53	08:01 17:01	06:49 18:06	06:23 20:15	05:06 21:21	04:18 22:14
11	08:54 15:55	07:59 17:03	06:46 18:08	06:20 17:36 (2)	05:04 21:23	04:17 22:15
12	08:53 15:56	07:56 17:06	06:43 18:11	06:17 17:35 (2)	05:02 21:25	04:17 22:16
13	08:52 15:58	07:54 15:14 (11)	06:41 16:26 (4)	06:14 17:34 (2)	05:00 21:27	04:16 22:17
14	08:51 16:00	07:52 15:15 (11)	06:38 16:25 (4)	06:12 17:33 (2)	04:58 21:29	04:16 22:18
15	08:49 16:02	07:49 15:18 (11)	06:35 16:24 (4)	06:09 17:32 (2)	04:56 21:31	04:15 22:19
16	08:48 16:04	07:47 15:20 (11)	06:32 16:40 (4)	06:06 17:48 (2)	04:53 21:33	04:15 22:20
17	08:47 16:06	07:44 15:23 (11)	06:29 16:25 (4)	06:04 17:50 (2)	04:51 21:35	04:15 22:21
18	08:45 16:08	07:42 15:25 (11)	06:27 16:44 (4)	06:01 17:51 (2)	04:49 21:37	04:15 22:22
19	08:44 16:10	07:39 15:27 (11)	06:24 16:43 (4)	05:58 17:50 (2)	04:48 21:39	04:15 22:23
20	08:42 16:13	07:37 15:29 (11)	06:21 16:43 (4)	05:56 17:49 (2)	04:46 21:41	04:15 22:24
21	08:41 16:15	07:34 15:31 (11)	06:18 16:42 (4)	05:53 17:47 (2)	04:44 21:43	04:15 22:25
22	08:39 16:17	07:32 15:33 (11)	06:15 16:39 (4)	05:50 20:37	04:42 21:45	04:15 22:26
23	08:38 16:19	07:29 15:35 (11)	06:13 16:32 (4)	05:48 20:41	04:40 21:47	04:15 22:27
24	08:36 16:21	07:26 15:37 (11)	06:10 16:35 (4)	05:45 20:43	04:39 21:49	04:15 22:28
25	08:34 16:24	07:24 15:39 (11)	06:07 16:37 (4)	05:43 20:46	04:37 21:51	04:16 22:29
26	08:32 16:26	07:21 15:41 (11)	06:04 16:39 (4)	05:40 20:48	04:35 21:53	04:16 22:30
27	08:31 16:28	07:19 15:43 (11)	06:01 16:41 (4)	05:37 20:50	04:34 21:55	04:17 22:31
28	08:29 16:30	07:16 15:45 (11)	05:59 16:43 (4)	05:35 20:52	04:32 21:57	04:17 22:32
29	08:27 16:33	07:14 15:47 (11)	05:57 16:45 (4)	05:33 20:54	04:30 21:59	04:18 22:33
30	08:25 16:35	07:12 15:49 (11)	05:55 16:47 (4)	05:31 20:56	04:29 22:01	04:19 22:34
31	08:23 16:37	07:10 15:51 (11)	05:53 16:49 (4)	05:29 20:58	04:28 22:03	04:20 22:35
Potential sun hours	227	262	365	429	515	539
Total, worst case	148	165	141			
Sun reduction	0.11	0.19	0.40			
Oper. time red.	1.00	1.00	1.00			
Wind dir. red.	1.00	1.00	1.00			
Total reduction	0.11	0.19	0.40			
Total, real	16	32	57			

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Maja 16 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (451)
Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	July	August	September	October	November	December
1	04:20	05:09	06:15	07:18	18:14 (2)	07:27
	22:20	21:35	20:17	18:53	8 18:22 (2)	16:32
2	04:21	05:11	06:17	07:20	18:14 (2)	07:30
	22:19	21:33	20:14	18:50	5 18:19 (2)	16:29
3	04:21	05:13	06:19	07:22		07:32
	22:19	21:31	20:12	18:48		16:27
4	04:22	05:15	06:21	07:25		07:34
	22:18	21:28	20:09	18:45		16:25
5	04:24	05:17	06:23	07:27		07:37
	22:17	21:26	20:06	18:42		16:22
6	04:25	05:19	06:25	07:29		07:39
	22:16	21:24	20:03	18:39		16:20
7	04:26	05:21	06:27	07:31		07:41
	22:15	21:22	20:01	18:37		16:18
8	04:27	05:23	06:29	07:33		07:43
	22:15	21:19	19:58	18:34		16:16
9	04:28	05:26	06:32	07:35		07:46
	22:13	21:17	19:55	18:31		16:14
10	04:30	05:28	06:34	07:38		07:48
	22:12	21:14	19:52	18:28		16:12
11	04:31	05:30	06:36	07:40		07:50
	22:11	21:12	19:49	18:26		16:09
12	04:33	05:32	06:38	07:42		07:53
	22:10	21:10	19:47	18:23		16:07
13	04:34	05:34	06:40	07:44		07:55
	22:09	21:07	19:44	18:20		16:05
14	04:36	05:36	06:42	07:46		07:57
	22:07	21:05	19:41	18:17		16:03
15	04:37	05:38	06:44	07:49		07:59
	22:06	21:02	19:38	18:15		16:02
16	04:39	05:40	06:46	07:51		08:02
	22:05	21:00	19:35	18:12		16:00
17	04:40	05:43	06:48	07:53		08:04
	22:03	20:57	19:32	18:10		15:58
18	04:42	05:45	06:51	07:55		08:06
	22:02	20:54	19:30	18:07		15:56
19	04:44	05:47	06:53	07:58	17:01 (4)	08:08
	22:00	20:52	19:27	18:04	7 17:08 (4)	15:54
20	04:46	05:49	06:55	08:00	16:58 (4)	08:10
	21:58	20:49	19:24	18:02	12 17:10 (4)	15:52
21	04:47	05:51	06:57	08:02	16:57 (4)	08:13
	21:57	20:47	19:21	17:59	15 17:12 (4)	15:51
22	04:49	05:53	06:59	18:21 (2)	08:04	16:55 (4)
	21:55	20:44	19:18	18:28 (2)	17:56	18 17:13 (4)
23	04:51	05:55	07:01	18:19 (2)	08:07	16:55 (4)
	21:53	20:41	19:16	18:31 (2)	17:54	19 17:14 (4)
24	04:53	05:58	07:03	18:17 (2)	08:09	16:54 (4)
	21:51	20:39	19:13	18:32 (2)	17:51	19 17:13 (4)
25	04:55	06:00	07:05	18:15 (2)	07:11	15:54 (4)
	21:49	20:36	19:10	18:33 (2)	16:49	20 16:14 (4)
26	04:57	06:02	07:07	18:14 (2)	07:13	15:54 (4)
	21:47	20:33	19:07	18:33 (2)	16:46	18 16:12 (4)
27	04:59	06:04	07:10	18:14 (2)	07:16	15:55 (4)
	21:45	20:31	19:04	18:33 (2)	16:44	15 16:10 (4)
28	05:01	06:06	07:12	18:13 (2)	07:18	15:54 (4)
	21:43	20:28	19:02	18:30 (2)	16:41	12 16:06 (4)
29	05:03	06:08	07:14	18:13 (2)	07:20	15:56 (4)
	21:41	20:25	18:59	18:27 (2)	16:39	8 16:04 (4)
30	05:05	06:10	07:16	18:14 (2)	07:23	15:56 (4)
	21:39	20:23	18:56	18:25 (2)	16:37	5 16:01 (4)
31	05:07	06:12			07:25	15:58 (4)
	21:37	20:20			16:34	1 15:59 (4)
Potential sun hours	538	474	386	321		241
Total, worst case			132	182		148
Sun reduction			0.46	0.28		0.08
Oper. time red.			1.00	1.00		1.00
Wind dir. red.			1.00	1.00		1.00
Total reduction			0.46	0.28		0.08
Total, real			61	51		12

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Maja 2 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (494)
Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June
1	09:00	08:21	07:13	17:13 (4)	06:47	19:07 (2)
	15:39	16:40	17:46	2	17:15 (4)	19:55
2	09:00	08:19	07:11	17:12 (4)	06:45	14
	15:40	16:42	17:48	6	17:18 (4)	19:57
3	08:59	08:17	16:05 (11)	07:08	17:11 (4)	06:42
	15:42	16:44	3	16:08 (11)	17:50	9
4	08:59	08:14	16:05 (11)	07:05	17:10 (4)	06:39
	15:43	16:47	6	16:11 (11)	17:52	12
5	08:58	08:12	16:05 (11)	07:02	17:09 (4)	06:36
	15:45	16:49	9	16:14 (11)	17:55	16
6	08:58	08:10	16:04 (11)	07:00	17:10 (4)	06:34
	15:46	16:52	12	16:16 (11)	17:57	18
7	08:57	08:08	16:05 (11)	06:57	17:10 (4)	06:31
	15:48	16:54	14	16:19 (11)	17:59	17
8	08:56	08:06	16:05 (11)	06:54	17:10 (4)	06:28
	15:49	16:56	16	16:21 (11)	18:02	16
9	08:56	08:03	16:06 (11)	06:52	17:11 (4)	06:25
	15:51	16:59	15	16:21 (11)	18:04	13
10	08:55	08:01	16:07 (11)	06:49	17:12 (4)	06:23
	15:53	17:01	13	16:20 (11)	18:06	10
11	08:54	07:59	16:09 (11)	06:46	17:10 (4)	06:20
	15:55	17:03	10	16:19 (11)	18:08	
12	08:53	07:56	16:11 (11)	06:43	17:10 (4)	06:17
	15:56	17:06	4	16:15 (11)	18:11	
13	08:52	07:54		06:41	17:10 (4)	06:14
	15:58	17:08		18:13	20:21	
14	08:50	07:52		06:38	17:10 (4)	06:12
	16:00	17:11		18:15	20:23	
15	08:49	07:49		06:35	17:10 (4)	06:09
	16:02	17:13		18:17	20:26	
16	08:48	07:47		06:32	17:10 (4)	06:06
	16:04	17:15		18:19	20:28	
17	08:47	07:44		06:29	17:10 (4)	06:04
	16:06	17:18		18:22	20:30	
18	08:45	07:42		06:27	17:10 (4)	06:01
	16:08	17:20		18:24	20:32	
19	08:44	07:39		06:24	17:10 (4)	05:58
	16:10	17:22		18:26	20:35	
20	08:42	07:37		06:21	17:10 (4)	05:56
	16:13	17:25		18:28	20:37	
21	08:41	07:34		06:18	17:10 (4)	05:53
	16:15	17:27		18:31	20:39	
22	08:39	07:32		06:15	17:10 (4)	05:50
	16:17	17:29		18:33	20:41	
23	08:38	07:29		06:13	17:10 (4)	05:48
	16:19	17:32		18:35	20:43	
24	08:36	07:26		06:10	17:10 (4)	05:45
	16:21	17:34		18:37	20:46	
25	08:34	07:24		06:07	17:10 (4)	05:43
	16:24	17:36		18:39	20:48	
26	08:32	07:21		06:04	18:09 (2)	05:40
	16:26	17:39		18:42	3	18:12 (2)
27	08:31	07:19		06:01	18:07 (2)	05:37
	16:28	17:41		18:44	7	18:14 (2)
28	08:29	07:16		05:59	18:07 (2)	05:35
	16:30	17:43		18:46	10	18:17 (2)
29	08:27			06:56	19:07 (2)	05:32
	16:33			19:48	12	19:19 (2)
30	08:25			06:53	19:06 (2)	05:30
	16:35			19:50	15	19:21 (2)
31	08:23			06:50	19:06 (2)	05:29
	16:37			19:53	16	19:22 (2)
Potential sun hours	227	262	365	429	515	539
Total, worst case		102	182	33		
Sun reduction		0.19	0.40	0.43		
Oper. time red.		1.00	1.00	1.00		
Wind dir. red.		1.00	1.00	1.00		
Total reduction		0.19	0.40	0.43		
Total, real		20	73	14		

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Maja 2 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (494)
 Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	July	August	September	October	November	December
1	04:20	05:09	06:15	07:18	07:27	15:36 (11) 08:33
	22:20	21:35	20:17	18:53	16:32	13 15:49 (11) 15:37
2	04:21	05:11	06:17	07:20	07:30	15:36 (11) 08:34
	22:19	21:33	20:14	18:50	16:29	15 15:51 (11) 15:36
3	04:21	05:13	06:19	07:22	17:52 (4) 07:32	15:35 (11) 08:36
	22:19	21:31	20:12	18:48	7 17:59 (4) 16:27	16 15:51 (11) 15:35
4	04:22	05:15	06:21	07:25	17:49 (4) 07:34	15:35 (11) 08:38
	22:18	21:28	20:09	18:45	12 18:01 (4) 16:25	14 15:49 (11) 15:34
5	04:24	05:17	06:23	07:27	17:48 (4) 07:36	15:34 (11) 08:40
	22:17	21:26	20:06	18:42	15 18:03 (4) 16:22	12 15:46 (11) 15:33
6	04:25	05:19	06:25	07:29	17:46 (4) 07:39	15:35 (11) 08:41
	22:16	21:24	20:03	18:39	17 18:03 (4) 16:20	9 15:44 (11) 15:32
7	04:26	05:21	06:27	07:31	17:45 (4) 07:41	15:35 (11) 08:43
	22:15	21:21	20:00	18:37	18 18:03 (4) 16:18	7 15:42 (11) 15:32
8	04:27	05:23	06:29	07:33	17:45 (4) 07:43	15:35 (11) 08:44
	22:14	21:19	19:58	18:34	16 18:01 (4) 16:16	4 15:39 (11) 15:31
9	04:28	05:26	06:32	19:05 (2) 07:35	17:45 (4) 07:46	08:46
	22:13	21:17	19:55	5 19:10 (2) 18:31	14 17:59 (4) 16:14	15:31
10	04:30	05:28	06:34	19:02 (2) 07:38	17:45 (4) 07:48	08:47
	22:12	21:14	19:52	11 19:13 (2) 18:28	11 17:56 (4) 16:12	15:30
11	04:31	05:30	06:36	19:00 (2) 07:40	17:45 (4) 07:50	08:49
	22:11	21:12	19:49	14 19:14 (2) 18:26	8 17:53 (4) 16:09	15:30
12	04:33	05:32	06:38	18:59 (2) 07:42	17:45 (4) 07:53	08:50
	22:10	21:09	19:46	15 19:14 (2) 18:23	5 17:50 (4) 16:07	15:29
13	04:34	05:34	06:40	18:58 (2) 07:44	17:47 (4) 07:55	08:51
	22:09	21:07	19:44	15 19:13 (2) 18:20	1 17:48 (4) 16:05	15:29
14	04:36	05:36	06:42	18:57 (2) 07:46	07:57	08:52
	22:07	21:05	19:41	13 19:10 (2) 18:17	16:03	15:29
15	04:37	05:38	06:44	18:57 (2) 07:49	07:59	08:53
	22:06	21:02	19:38	10 19:07 (2) 18:15	16:02	15:29
16	04:39	05:40	06:46	18:57 (2) 07:51	08:02	08:54
	22:05	21:00	19:35	7 19:04 (2) 18:12	16:00	15:29
17	04:40	05:43	06:48	18:57 (2) 07:53	08:04	08:55
	22:03	20:57	19:32	4 19:01 (2) 18:09	15:58	15:29
18	04:42	05:45	06:51	07:55	08:06	08:56
	22:01	20:54	19:30	18:07	15:56	15:29
19	04:44	05:47	06:53	07:58	08:08	08:57
	22:00	20:52	19:27	18:04	15:54	15:29
20	04:46	05:49	06:55	08:00	08:10	08:58
	21:58	20:49	19:24	18:02	15:52	15:29
21	04:47	05:51	06:57	08:02	08:13	08:58
	21:57	20:47	19:21	17:59	15:51	15:30
22	04:49	05:53	06:59	08:04	08:15	08:59
	21:55	20:44	19:18	17:56	15:49	15:30
23	04:51	05:55	07:01	08:07	08:17	08:59
	21:53	20:41	19:16	17:54	15:48	15:31
24	04:53	05:58	07:03	08:09	08:19	09:00
	21:51	20:39	19:13	17:51	15:46	15:31
25	04:55	06:00	07:05	07:11	08:21	09:00
	21:49	20:36	19:10	16:49	15:45	15:32
26	04:57	06:02	07:07	07:13	08:23	09:00
	21:47	20:33	19:07	16:46	15:43	15:33
27	04:59	06:04	07:10	07:16	08:25	09:00
	21:45	20:31	19:04	16:44	15:42	15:34
28	05:01	06:06	07:12	07:18	08:27	09:01
	21:43	20:28	19:02	16:41	15:41	15:34
29	05:03	06:08	07:14	07:20	08:29	09:01
	21:41	20:25	18:59	16:39	15:39	15:35
30	05:05	06:10	07:16	07:23	15:40 (11) 08:31	09:00
	21:39	20:23	18:56	16:36	6 15:46 (11) 15:38	15:37
31	05:07	06:12		07:25	15:38 (11)	09:00
	21:37	20:20		16:34	11 15:49 (11)	15:38
Potential sun hours	538	474	386	321	241	207
Total, worst case			94	141	90	
Sun reduction			0.46	0.28	0.08	
Oper. time red.			1.00	1.00	1.00	
Wind dir. red.			1.00	1.00	1.00	
Total reduction			0.46	0.28	0.08	
Total, real			43	40	7	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Maja 20 (94880100118001) - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (489) Sunshine probability S (Average daily sunshine hours) []

Assumptions for shadow calculations

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
0.80 1.82 4.75 6.09 9.67 10.05 8.16 7.72 5.94 2.93 0.63 0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January		February		March		April	May	June
1	09:00		08:21		07:13		06:47	05:27	04:27
	15:39		16:40		17:46		19:55	21:01	22:02
2	09:00		08:19		07:11		06:45	05:25	04:25
	15:40		16:42		17:48		19:57	21:03	22:04
3	08:59		08:17		07:08		06:42	05:23	04:24
	15:42		16:44		17:50		19:59	21:06	22:05
4	08:59		08:14		07:05		06:39	05:20	04:23
	15:43		16:47		17:52		20:01	21:08	22:07
5	08:58		08:12		07:02		06:36	05:18	04:22
	15:45		16:49		17:55		20:04	21:10	22:08
6	08:58		08:10		07:00		06:34	05:15	04:21
	15:46		16:52		17:57		20:06	21:12	22:09
7	08:57		08:08		06:57		06:31	05:13	04:20
	15:48		16:54		17:59		20:08	21:14	22:11
8	08:56	15:04 (11)	08:06	16:19 (4)	06:54		06:28	05:11	04:19
	15:49	15:05 (11)	16:56	3 16:22 (4)	18:02		20:10	21:16	22:12
9	08:56	15:05 (11)	08:03	16:18 (4)	06:52	17:30 (2)	06:25	05:09	04:18
	15:51	2 15:07 (11)	16:59	7 16:25 (4)	18:04	4 17:34 (2)	20:12	21:19	22:13
10	08:55	15:05 (11)	08:01	16:17 (4)	06:49	17:28 (2)	06:23	05:06	04:18
	15:53	4 15:09 (11)	17:01	10 16:27 (4)	18:06	8 17:36 (2)	20:15	21:21	22:14
11	08:54	15:05 (11)	07:59	16:17 (4)	06:46	17:27 (2)	06:20	05:04	04:17
	15:55	6 15:11 (11)	17:03	13 16:30 (4)	18:08	12 17:39 (2)	20:17	21:23	22:15
12	08:53	15:05 (11)	07:56	16:16 (4)	06:43	17:27 (2)	06:17	05:02	04:17
	15:56	8 15:13 (11)	17:06	16 16:32 (4)	18:11	15 17:42 (2)	20:19	21:25	22:16
13	08:52	15:05 (11)	07:54	16:16 (4)	06:41	17:26 (2)	06:14	05:00	04:16
	15:58	10 15:15 (11)	17:08	19 16:35 (4)	18:13	18 17:44 (2)	20:21	21:27	22:17
14	08:51	15:06 (11)	07:52	16:16 (4)	06:38	17:26 (2)	06:12	04:58	04:16
	16:00	12 15:18 (11)	17:11	20 16:36 (4)	18:15	19 17:45 (2)	20:23	21:29	22:18
15	08:49	15:06 (11)	07:49	16:16 (4)	06:35	17:25 (2)	06:09	04:56	04:15
	16:02	14 15:20 (11)	17:13	19 16:35 (4)	18:17	20 17:45 (2)	20:26	21:31	22:18
16	08:48	15:07 (11)	07:47	16:17 (4)	06:32	17:26 (2)	06:06	04:53	04:15
	16:04	16 15:23 (11)	17:15	18 16:35 (4)	18:20	18 17:44 (2)	20:28	21:33	22:19
17	08:47	15:07 (11)	07:44	16:17 (4)	06:29	17:27 (2)	06:04	04:51	04:15
	16:06	17 15:24 (11)	17:18	17 16:34 (4)	18:22	16 17:43 (2)	20:30	21:35	22:20
18	08:45	15:07 (11)	07:42	16:18 (4)	06:27	17:28 (2)	06:01	04:49	04:15
	16:08	17 15:24 (11)	17:20	15 16:33 (4)	18:24	13 17:41 (2)	20:32	21:37	22:20
19	08:44	15:08 (11)	07:39	16:20 (4)	06:24	17:30 (2)	05:58	04:48	04:15
	16:10	15 15:23 (11)	17:22	12 16:32 (4)	18:26	9 17:39 (2)	20:35	21:39	22:20
20	08:42	15:10 (11)	07:37	16:22 (4)	06:21		05:56	04:46	04:15
	16:13	14 15:24 (11)	17:25	7 16:29 (4)	18:28		20:37	21:41	22:21
21	08:41	15:11 (11)	07:34		06:18		05:53	04:44	04:15
	16:15	12 15:23 (11)	17:27		18:31		20:39	21:43	22:21
22	08:39	15:12 (11)	07:32		06:15		05:50	04:42	04:15
	16:17	11 15:23 (11)	17:29		18:33		20:41	21:45	22:21
23	08:38	15:14 (11)	07:29		06:13		05:48	04:40	04:15
	16:19	7 15:21 (11)	17:32		18:35		20:43	21:47	22:21
24	08:36		07:26		06:10		05:45	04:39	04:15
	16:21		17:34		18:37		20:46	21:49	22:21
25	08:34		07:24		06:07		05:43	04:37	04:16
	16:24		17:36		18:39		20:48	21:51	22:21
26	08:32		07:21		06:04		05:40	04:35	04:16
	16:26		17:39		18:42		20:50	21:52	22:21
27	08:31		07:19		06:01		05:37	04:34	04:17
	16:28		17:41		18:44		20:52	21:54	22:21
28	08:29		07:16		05:59		05:35	04:32	04:17
	16:30		17:43		18:46		20:54	21:56	22:21
29	08:27				06:56		05:32	04:31	04:18
	16:33				19:48		20:57	21:58	22:21
30	08:25				06:53		05:30	04:29	04:19
	16:35				19:50		20:59	21:59	22:20
31	08:23				06:50			04:28	
	16:37				19:53			22:01	
Potential sun hours	227		262		365		429	515	539
Total, worst case	166		176		152				
Sun reduction	0.11		0.19		0.40				
Oper. time red.	1.00		1.00		1.00				
Wind dir. red.	1.00		1.00		1.00				
Total reduction	0.11		0.19		0.40				
Total, real	18		34		61				

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Last time (hh:mm) with flicker	(WTG causing flicker last time)
	Minutes with flicker		

Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Maja 20 (94880100118001) - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (489)
Sunshine probability S (Average daily sunshine hours) []

Assumptions for shadow calculations

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
0.80 1.82 4.75 6.09 9.67 10.05 8.16 7.72 5.94 2.93 0.63 0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

		July	August	September		October		November		December	
	1	04:20	05:09	06:15		07:18	18:06 (2)	07:27	15:46 (4)	08:33	14:47 (11)
		22:20	21:35	20:17		18:53	16 18:22 (2)	16:32	10 15:56 (4)	15:37	6 14:53 (11)
	2	04:21	05:11	06:17		07:20	18:05 (2)	07:30	15:48 (4)	08:34	14:47 (11)
		22:19	21:33	20:14		18:50	14 18:19 (2)	16:29	6 15:54 (4)	15:36	5 14:52 (11)
	3	04:21	05:13	06:19		07:22	18:06 (2)	07:32	15:49 (4)	08:36	14:48 (11)
		22:19	21:31	20:12		18:48	10 18:16 (2)	16:27	2 15:51 (4)	15:35	2 14:50 (11)
	4	04:22	05:15	06:21		07:25	18:06 (2)	07:34		08:38	
		22:18	21:28	20:09		18:45	7 18:13 (2)	16:25		15:34	
	5	04:24	05:17	06:23		07:27	18:08 (2)	07:37		08:40	
		22:17	21:26	20:06		18:42	3 18:11 (2)	16:22		15:33	
	6	04:25	05:19	06:25		07:29		07:39		08:41	
		22:16	21:24	20:03		18:39		16:20		15:32	
	7	04:26	05:21	06:27		07:31		07:41		08:43	
		22:15	21:22	20:01		18:37		16:18		15:32	
	8	04:27	05:23	06:29		07:33		07:43		08:44	
		22:15	21:19	19:58		18:34		16:16		15:31	
	9	04:28	05:26	06:32		07:35		07:46		08:46	
		22:14	21:17	19:55		18:31		16:14		15:31	
	10	04:30	05:28	06:34		07:38		07:48		08:47	
		22:12	21:14	19:52		18:28		16:12		15:30	
	11	04:31	05:30	06:36		07:40		07:50		08:49	
		22:11	21:12	19:49		18:26		16:09		15:30	
	12	04:33	05:32	06:38		07:42		07:53		08:50	
		22:10	21:10	19:47		18:23		16:07		15:29	
	13	04:34	05:34	06:40		07:44		07:55		08:51	
		22:09	21:07	19:44		18:20		16:05		15:29	
	14	04:36	05:36	06:42		07:46		07:57		08:52	
		22:07	21:05	19:41		18:17		16:03		15:29	
	15	04:37	05:38	06:44		07:49		07:59		08:53	
		22:06	21:02	19:38		18:15		16:02		15:29	
	16	04:39	05:40	06:46		07:51		08:02		08:54	
		22:05	21:00	19:35		18:12		16:00		15:29	
	17	04:40	05:43	06:48		07:53		08:04		08:55	
		22:03	20:57	19:32		18:10		15:58		15:29	
	18	04:42	05:45	06:51		07:55		08:06		08:56	
		22:02	20:54	19:30		18:07		15:56		15:29	
	19	04:44	05:47	06:53		07:58		08:08	14:48 (11)	08:57	
		22:00	20:52	19:27		18:04		15:54	7 14:55 (11)	15:29	
	20	04:46	05:49	06:55		08:00		08:10	14:47 (11)	08:58	
		21:58	20:49	19:24		18:02		15:52	11 14:58 (11)	15:29	
	21	04:47	05:51	06:57		08:02		08:13	14:46 (11)	08:58	
		21:57	20:47	19:21		17:59		15:51	12 14:58 (11)	15:30	
	22	04:49	05:53	06:59		08:04	16:51 (4)	08:15	14:46 (11)	08:59	
		21:55	20:44	19:18		17:56	10 17:01 (4)	15:49	14 15:00 (11)	15:30	
	23	04:51	05:55	07:01		08:07	16:49 (4)	08:17	14:45 (11)	08:59	
		21:53	20:41	19:16		17:54	14 17:03 (4)	15:48	15 15:00 (11)	15:31	
	24	04:53	05:58	07:03	18:15 (2)	08:09	16:48 (4)	08:19	14:44 (11)	09:00	
		21:51	20:39	19:13	6 18:21 (2)	17:51	16 17:04 (4)	15:46	17 15:01 (11)	15:31	
	25	04:55	06:00	07:05	18:11 (2)	07:11	15:47 (4)	08:21	14:45 (11)	09:00	
		21:49	20:36	19:10	13 18:24 (2)	16:49	18 16:05 (4)	15:45	17 15:02 (11)	15:32	
	26	04:57	06:02	07:07	18:09 (2)	07:13	15:46 (4)	08:23	14:45 (11)	09:00	
		21:47	20:33	19:07	16 18:25 (2)	16:46	19 16:05 (4)	15:43	16 15:01 (11)	15:33	
	27	04:59	06:04	07:10	18:08 (2)	07:16	15:46 (4)	08:25	14:45 (11)	09:00	
		21:45	20:31	19:04	17 18:25 (2)	16:44	20 16:06 (4)	15:42	14 14:59 (11)	15:34	
	28	05:01	06:06	07:12	18:07 (2)	07:18	15:45 (4)	08:27	14:46 (11)	09:01	
		21:43	20:28	19:02	18 18:25 (2)	16:41	20 16:05 (4)	15:41	12 14:58 (11)	15:34	
	29	05:03	06:08	07:14	18:06 (2)	07:20	15:46 (4)	08:29	14:46 (11)	09:01	
		21:41	20:25	18:59	19 18:25 (2)	16:39	18 16:04 (4)	15:39	10 14:56 (11)	15:35	
	30	05:05	06:10	07:16	18:06 (2)	07:23	15:45 (4)	08:31	14:46 (11)	09:01	
		21:39	20:23	18:56	19 18:25 (2)	16:37	16 16:01 (4)	15:38	9 14:55 (11)	15:37	
	31	05:07	06:12			07:25	15:46 (4)			09:00	
		21:37	20:20			16:34	13 15:59 (4)			15:38	
Potential sun hours		538	474	386		321		241		207	
Total, worst case				108		214		172		13	
Sun reduction				0.46		0.28		0.08		0.06	
Oper. time red.				1.00		1.00		1.00		1.00	
Wind dir. red.				1.00		1.00		1.00		1.00	
Total reduction				0.46		0.28		0.08		0.06	
Total, real				50		61		13		1	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Last time (hh:mm) with flicker	(WTG causing flicker last time)
	Minutes with flicker		

Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Maja 20 (94880100123001) - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (590)

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January		February		March		April		May		June	
1	09:00		08:21	15:32 (11)	07:13	16:46 (4)	06:48	18:58 (2)	05:27	04:27		
	15:39		16:40	14 15:46 (11)	17:46	29 17:16 (14)	19:55	20 19:18 (2)	21:01	22:02		
2	09:00		08:19	15:33 (11)	07:11	16:46 (4)	06:45	18:59 (2)	05:25	04:25		
	15:41		16:42	12 15:45 (11)	17:48	31 17:18 (14)	19:57	19 19:18 (2)	21:03	22:04		
3	08:59		08:17	15:35 (11)	07:08	16:47 (4)	06:42	19:00 (2)	05:23	04:24		
	15:42		16:44	7 15:42 (11)	17:50	31 17:20 (14)	19:59	16 19:16 (2)	21:05	22:05		
4	08:59		08:14		07:05	16:47 (4)	06:39	19:01 (2)	05:20	04:23		
	15:43		16:47		17:52	32 17:22 (14)	20:01	13 19:14 (2)	21:08	22:07		
5	08:58		08:12		07:02	16:48 (4)	06:36	19:03 (2)	05:18	04:22		
	15:45		16:49		17:55	31 17:24 (14)	20:04	8 19:11 (2)	21:10	22:08		
6	08:58		08:10		07:00	16:51 (4)	06:34		05:15	04:21		
	15:46		16:52		17:57	25 17:24 (14)	20:06		21:12	22:09		
7	08:57		08:08		06:57	16:55 (4)	06:31		05:13	04:20		
	15:48		16:54		17:59	13 17:22 (14)	20:08		21:14	22:11		
8	08:56		08:06		06:54	17:14 (14)	06:28		05:11	04:19		
	15:49		16:56		18:02	5 17:19 (14)	20:10		21:16	22:12		
9	08:56		08:03	16:24 (12)	06:52		06:25		05:09	04:19		
	15:51		16:59	1 16:25 (12)	18:04		20:12		21:19	22:13		
10	08:55		08:01	16:23 (12)	06:49		06:23		05:06	04:18		
	15:53		17:01	4 16:27 (12)	18:06		20:15		21:21	22:14		
11	08:54		07:59	16:23 (12)	06:46		06:20		05:04	04:17		
	15:55		17:03	7 16:30 (12)	18:08		20:17		21:23	22:15		
12	08:53		07:56	16:22 (12)	06:43		06:17		05:02	04:17		
	15:57		17:06	10 16:32 (12)	18:11		20:19		21:25	22:16		
13	08:52		07:54	16:22 (12)	06:41		06:14		05:00	04:16		
	15:58		17:08	13 16:35 (12)	18:13		20:21		21:27	22:17		
14	08:51		07:52	16:22 (12)	06:38		06:12		04:58	04:16		
	16:00		17:11	16 16:38 (12)	18:15		20:23		21:29	22:18		
15	08:49		07:49	16:22 (12)	06:35		06:09		04:56	04:15		
	16:02		17:13	17 16:39 (12)	18:17		20:26		21:31	22:18		
16	08:48		07:47	16:23 (12)	06:32		06:06		04:53	04:15		
	16:04		17:15	16 16:39 (12)	18:20		20:28		21:33	22:19		
17	08:47		07:44	16:23 (12)	06:29		06:04		04:51	04:15		
	16:06		17:18	15 16:38 (12)	18:22		20:30		21:35	22:19		
18	08:45		07:42	16:24 (12)	06:27		06:01		04:50	04:15		
	16:08		17:20	12 16:36 (12)	18:24		20:32		21:37	22:20		
19	08:44	15:28 (11)	07:39	16:27 (12)	06:24		05:58		04:48	04:15		
	16:10	1 15:29 (11)	17:22	8 16:35 (12)	18:26		20:35		21:39	22:20		
20	08:42	15:28 (11)	07:37		06:21		05:56		04:46	04:15		
	16:13	5 15:33 (11)	17:25		18:28		20:37		21:41	22:21		
21	08:41	15:28 (11)	07:34	16:53 (4)	06:18		05:53		04:44	04:15		
	16:15	7 15:35 (11)	17:27	2 16:55 (4)	18:31		20:39		21:43	22:21		
22	08:39	15:28 (11)	07:32	16:51 (4)	06:15		05:50		04:42	04:15		
	16:17	9 15:37 (11)	17:29	7 16:58 (4)	18:33		20:41		21:45	22:21		
23	08:38	15:28 (11)	07:29	16:49 (4)	06:13		05:48		04:40	04:15		
	16:19	12 15:40 (11)	17:32	12 17:01 (4)	18:35		20:43		21:47	22:21		
24	08:36	15:28 (11)	07:26	16:48 (4)	06:10	18:05 (2)	05:45		04:39	04:15		
	16:21	15 15:43 (11)	17:34	15 17:03 (4)	18:37	3 18:08 (2)	20:46		21:49	22:21		
25	08:34	15:28 (11)	07:24	16:48 (4)	06:07	18:03 (2)	05:43		04:37	04:16		
	16:24	17 15:45 (11)	17:36	18 17:06 (4)	18:39	7 18:10 (2)	20:48		21:51	22:21		
26	08:32	15:28 (11)	07:21	16:47 (4)	06:04	18:01 (2)	05:40		04:35	04:16		
	16:26	20 15:48 (11)	17:39	21 17:08 (4)	18:42	11 18:12 (2)	20:50		21:52	22:21		
27	08:31	15:28 (11)	07:19	16:46 (4)	06:01	18:00 (2)	05:37		04:34	04:17		
	16:28	19 15:47 (11)	17:41	23 17:09 (4)	18:44	14 18:14 (2)	20:52		21:54	22:21		
28	08:29	15:28 (11)	07:16	16:46 (4)	05:59	18:00 (2)	05:35		04:32	04:17		
	16:30	20 15:48 (11)	17:43	25 17:13 (14)	18:46	17 18:17 (2)	20:54		21:56	22:21		
29	08:27	15:29 (11)			06:56	18:59 (2)	05:32		04:31	04:18		
	16:33	19 15:48 (11)			19:48	20 19:19 (2)	20:57		21:58	22:21		
30	08:25	15:30 (11)			06:53	18:59 (2)	05:30		04:29	04:19		
	16:35	18 15:48 (11)			19:50	21 19:20 (2)	20:59		21:59	22:20		
31	08:23	15:30 (11)			06:50	18:58 (2)			04:28			
	16:37	16 15:46 (11)			19:53	21 19:19 (2)			22:01			
Potential sun hours	227		262		365		429		515	539		
Total, worst case	178		275		311		76					
Sun reduction	0.11		0.19		0.40		0.43					
Oper. time red.	1.00		1.00		1.00		1.00					
Wind dir. red.	1.00		1.00		1.00		1.00					
Total reduction	0.11		0.19		0.40		0.43					
Total, real	19		53		125		32					

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Maja 20 (94880100123001) - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (590) Sunshine probability S (Average daily sunshine hours) []

Assumptions for shadow calculations

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
0.80 1.82 4.75 6.09 9.67 10.05 8.16 7.72 5.94 2.93 0.63 0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	July	August	September	October	November	December
1	04:20	05:09	06:15	07:18	07:27	15:52 (12) 08:33
	22:20	21:35	20:17	18:53	16:32	4 15:56 (12) 15:37
2	04:21	05:11	06:17	07:20	07:30	08:34
	22:19	21:33	20:14	18:50	16:29	15:36
3	04:22	05:13	06:19	07:22	07:32	08:36
	22:19	21:31	20:12	18:48	16:27	15:35
4	04:23	05:15	06:21	07:25	07:34	08:38
	22:18	21:28	20:09	18:45	16:25	15:34
5	04:24	05:17	06:23	07:27	07:37	08:40
	22:17	21:26	20:06	18:42	16:22	15:33
6	04:25	05:19	06:25	07:29	17:48 (14) 07:39	08:41
	22:16	21:24	20:03	18:39	9 17:57 (14) 16:20	15:32
7	04:26	05:21	06:27	07:31	17:28 (4) 07:41	08:43
	22:15	21:22	20:01	8 19:07 (2) 18:37	20 17:58 (14) 16:18	15:32
8	04:27	05:23	06:29	18:56 (2) 07:33	17:24 (4) 07:43	15:06 (11) 08:44
	22:15	21:19	19:58	13 19:09 (2) 18:34	29 17:59 (14) 16:16	7 15:13 (11) 15:31
9	04:28	05:26	06:32	18:54 (2) 07:35	17:23 (4) 07:46	15:04 (11) 08:46
	22:13	21:17	19:55	16 19:10 (2) 18:31	32 17:59 (14) 16:14	12 15:16 (11) 15:31
10	04:30	05:28	06:34	18:53 (2) 07:38	17:22 (4) 07:48	15:02 (11) 08:47
	22:12	21:14	19:52	18 19:11 (2) 18:28	32 17:56 (14) 16:12	15 15:17 (11) 15:30
11	04:31	05:30	06:36	18:51 (2) 07:40	17:20 (4) 07:50	15:02 (11) 08:49
	22:11	21:12	19:49	20 19:11 (2) 18:26	31 17:53 (14) 16:10	16 15:18 (11) 15:30
12	04:33	05:32	06:38	18:51 (2) 07:42	17:19 (4) 07:53	15:01 (11) 08:50
	22:10	21:10	19:47	20 19:11 (2) 18:23	30 17:50 (14) 16:07	18 15:19 (11) 15:29
13	04:34	05:34	06:40	18:50 (2) 07:44	17:19 (4) 07:55	15:01 (11) 08:51
	22:09	21:07	19:44	21 19:11 (2) 18:20	28 17:48 (14) 16:05	19 15:20 (11) 15:29
14	04:36	05:36	06:42	18:49 (2) 07:46	17:19 (4) 07:57	15:01 (11) 08:52
	22:07	21:05	19:41	21 19:10 (2) 18:18	23 17:45 (14) 16:03	19 15:20 (11) 15:29
15	04:37	05:38	06:44	18:49 (2) 07:49	17:18 (4) 07:59	15:01 (11) 08:53
	22:06	21:02	19:38	18 19:07 (2) 18:15	22 17:40 (4) 16:02	19 15:20 (11) 15:29
16	04:39	05:40	06:46	18:49 (2) 07:51	17:19 (4) 08:02	15:01 (11) 08:54
	22:05	21:00	19:35	15 19:04 (2) 18:12	20 17:39 (4) 16:00	20 15:21 (11) 15:29
17	04:41	05:43	06:48	18:50 (2) 07:53	17:19 (4) 08:04	15:01 (11) 08:55
	22:03	20:57	19:32	11 19:01 (2) 18:10	17 17:36 (4) 15:58	17 15:18 (11) 15:29
18	04:42	05:45	06:51	18:50 (2) 07:55	17:20 (4) 08:06	15:02 (11) 08:56
	22:02	20:54	19:30	8 18:58 (2) 18:07	14 17:34 (4) 15:56	15 15:17 (11) 15:29
19	04:44	05:47	06:53	18:51 (2) 07:58	17:21 (4) 08:08	15:02 (11) 08:57
	22:00	20:52	19:27	5 18:56 (2) 18:04	10 17:31 (4) 15:54	12 15:14 (11) 15:29
20	04:46	05:49	06:55	08:00	17:22 (4) 08:10	15:03 (11) 08:58
	21:58	20:49	19:24	18:02	6 17:28 (4) 15:52	9 15:12 (11) 15:29
21	04:47	05:51	06:57	08:02	17:25 (4) 08:13	15:03 (11) 08:58
	21:57	20:47	19:21	17:59	1 17:26 (4) 15:51	7 15:10 (11) 15:30
22	04:49	05:53	06:59	08:04	08:15	15:05 (11) 08:59
	21:55	20:44	19:18	17:56	15:49	4 15:09 (11) 15:30
23	04:51	05:55	07:01	08:07	16:57 (12) 08:17	15:05 (11) 08:59
	21:53	20:41	19:16	17:54	9 17:06 (12) 15:48	1 15:06 (11) 15:31
24	04:53	05:58	07:03	08:09	16:54 (12) 08:19	09:00
	21:51	20:39	19:13	17:51	13 17:07 (12) 15:46	15:31
25	04:55	06:00	07:05	07:11	15:53 (12) 08:21	09:00
	21:49	20:36	19:10	16:49	15 16:08 (12) 15:45	15:32
26	04:57	06:02	07:07	07:13	15:52 (12) 08:23	09:00
	21:47	20:33	19:07	16:46	17 16:09 (12) 15:43	15:33
27	04:59	06:04	07:10	07:16	15:52 (12) 08:25	09:00
	21:45	20:31	19:04	16:44	17 16:09 (12) 15:42	15:34
28	05:01	06:06	07:12	07:18	15:51 (12) 08:27	09:01
	21:43	20:28	19:02	16:41	15 16:06 (12) 15:41	15:35
29	05:03	06:08	07:14	07:20	15:52 (12) 08:29	09:01
	21:41	20:25	18:59	16:39	12 16:04 (12) 15:39	15:36
30	05:05	06:10	07:16	07:23	15:51 (12) 08:31	09:01
	21:39	20:23	18:56	16:37	10 16:01 (12) 15:38	15:37
31	05:07	06:12		07:25	15:52 (12)	09:00
	21:37	20:20		16:34	7 15:59 (12)	15:38
Potential sun hours	538	474	386	321	241	207
Total, worst case			194	439	214	
Sun reduction			0.46	0.28	0.08	
Oper. time red.			1.00	1.00	1.00	
Wind dir. red.			1.00	1.00	1.00	
Total reduction			0.46	0.28	0.08	
Total, real			90	124	17	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Last time (hh:mm) with flicker	(WTG causing flicker last time)
	Minutes with flicker		

Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Maja 22 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (467)
 Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June
1	09:00	08:21	07:13	06:47	05:27	04:27
	15:39	16:40	17:46	19:55	21:01	22:02
2	09:00	08:19	07:11	06:45	05:25	04:25
	15:40	16:42	17:48	19:57	21:03	22:04
3	08:59	08:17	07:08	06:42	05:23	04:24
	15:42	16:44	17:50	19:59	21:06	22:05
4	08:59	08:15	07:05	06:39	05:20	04:23
	15:43	16:47	17:52	20:01	21:08	22:07
5	08:58	08:12	07:02	06:36	05:18	04:22
	15:45	16:49	17:55	20:04	21:10	22:08
6	08:58	08:10	07:00	06:34	05:15	04:21
	15:46	16:52	17:57	20:06	21:12	22:09
7	08:57	15:01 (11)	08:08	16:17 (4)	06:31	05:13
	15:48	2 15:03 (11)	16:54	2 16:19 (4)	17:59	20:08
8	08:56	15:01 (11)	08:06	16:15 (4)	06:54	17:30 (2)
	15:49	4 15:05 (11)	16:56	7 16:22 (4)	18:02	2 17:32 (2)
9	08:56	15:02 (11)	08:03	16:15 (4)	06:52	17:28 (2)
	15:51	5 15:07 (11)	16:59	10 16:25 (4)	18:04	6 17:34 (2)
10	08:55	15:02 (11)	08:01	16:14 (4)	06:49	17:27 (2)
	15:53	7 15:09 (11)	17:01	13 16:27 (4)	18:06	9 17:36 (2)
11	08:54	15:02 (11)	07:59	16:14 (4)	06:46	17:26 (2)
	15:55	9 15:11 (11)	17:03	16 16:30 (4)	18:08	14 17:40 (2)
12	08:53	15:02 (11)	07:56	16:13 (4)	06:43	17:26 (2)
	15:56	11 15:13 (11)	17:06	19 16:32 (4)	18:11	16 17:42 (2)
13	08:52	15:02 (11)	07:54	16:14 (4)	06:41	17:25 (2)
	15:58	13 15:15 (11)	17:08	20 16:34 (4)	18:13	19 17:44 (2)
14	08:51	15:03 (11)	07:52	16:14 (4)	06:38	17:24 (2)
	16:00	15 15:18 (11)	17:11	20 16:34 (4)	18:15	21 17:45 (2)
15	08:49	15:03 (11)	07:49	16:13 (4)	06:35	17:24 (2)
	16:02	17 15:20 (11)	17:13	20 16:33 (4)	18:17	20 17:44 (2)
16	08:48	15:04 (11)	07:47	16:15 (4)	06:32	17:24 (2)
	16:04	17 15:21 (11)	17:15	18 16:33 (4)	18:20	19 17:43 (2)
17	08:47	15:05 (11)	07:44	16:15 (4)	06:29	17:26 (2)
	16:06	16 15:21 (11)	17:18	17 16:32 (4)	18:22	16 17:42 (2)
18	08:45	15:05 (11)	07:42	16:16 (4)	06:27	17:27 (2)
	16:08	16 15:21 (11)	17:20	14 16:30 (4)	18:24	13 17:40 (2)
19	08:44	15:06 (11)	07:39	16:18 (4)	06:24	17:29 (2)
	16:10	14 15:20 (11)	17:22	11 16:29 (4)	18:26	9 17:38 (2)
20	08:42	15:07 (11)	07:37	16:22 (4)	06:21	18:28
	16:13	14 15:21 (11)	17:25	3 16:25 (4)	18:28	06:18
21	08:41	15:09 (11)	07:34		06:18	18:31
	16:15	11 15:20 (11)	17:27		06:15	18:33
22	08:39	15:10 (11)	07:32		06:15	18:33
	16:17	9 15:19 (11)	17:29		06:13	18:35
23	08:38	15:13 (11)	07:29		06:13	18:35
	16:19	3 15:16 (11)	17:32		06:10	18:37
24	08:36		07:26		06:10	18:37
	16:21		17:34		06:07	18:39
25	08:34		07:24		06:07	18:39
	16:24		17:36		06:04	18:42
26	08:32		07:21		06:04	18:42
	16:26		17:39		06:01	18:44
27	08:31		07:19		06:01	18:44
	16:28		17:41		05:59	18:46
28	08:29		07:16		05:59	18:46
	16:30		17:43		05:56	18:48
29	08:27				05:56	19:48
	16:33				05:52	06:53
30	08:25				05:52	19:50
	16:35				05:50	06:50
31	08:23				05:50	19:53
	16:37				05:48	20:51
Potential sun hours	227	262	365	429	515	539
Total, worst case	183	190	164			
Sun reduction	0.11	0.19	0.40			
Oper. time red.	1.00	1.00	1.00			
Wind dir. red.	1.00	1.00	1.00			
Total reduction	0.11	0.19	0.40			
Total, real	20	37	66			

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Maja 22 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (467)
Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	July	August	September	October	November	December
1	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	18:04 (2) 18:22 (2)	07:27 16:32
2	04:21 22:19	05:11 21:33	06:17 20:14	07:20 18:50	18:04 (2) 18:19 (2)	07:30 16:29
3	04:21 22:19	05:13 21:31	06:19 20:12	07:22 18:48	18:04 (2) 18:16 (2)	07:32 16:27
4	04:22 22:18	05:15 21:28	06:21 20:09	07:25 18:45	18:05 (2) 18:13 (2)	07:34 16:25
5	04:24 22:17	05:17 21:26	06:23 20:06	07:27 18:42	18:07 (2) 18:11 (2)	07:37 16:22
6	04:25 22:16	05:19 21:24	06:25 20:03	07:29 18:39	07:39 16:20	15:33 15:32
7	04:26 22:15	05:21 21:22	06:27 20:01	07:31 18:37	07:41 16:18	08:43 15:32
8	04:27 22:15	05:23 21:19	06:29 19:58	07:33 18:34	07:43 16:16	08:44 15:31
9	04:28 22:14	05:26 21:17	06:32 19:55	07:35 18:31	07:46 16:14	08:46 15:31
10	04:30 22:12	05:28 21:14	06:34 19:52	07:38 18:28	07:48 16:12	08:47 15:30
11	04:31 22:11	05:30 21:12	06:36 19:49	07:40 18:26	07:50 16:09	08:49 15:30
12	04:33 22:10	05:32 21:10	06:38 19:47	07:42 18:23	07:53 16:07	08:50 15:29
13	04:34 22:09	05:34 21:07	06:40 19:44	07:44 18:20	07:55 16:05	08:51 15:29
14	04:36 22:07	05:36 21:05	06:42 19:41	07:46 18:17	07:57 16:03	08:52 15:29
15	04:37 22:06	05:38 21:02	06:44 19:38	07:49 18:15	07:59 16:02	08:53 15:29
16	04:39 22:05	05:40 21:00	06:46 19:35	07:51 18:12	08:02 16:00	08:54 15:29
17	04:40 22:03	05:43 20:57	06:48 19:32	07:53 18:10	08:04 15:58	08:55 15:29
18	04:42 22:02	05:45 20:54	06:51 19:30	07:55 18:07	08:06 15:56	08:56 15:29
19	04:44 22:00	05:47 20:52	06:53 19:27	07:58 18:04	08:08 15:54	14:47 (11) 14:50 (11)
20	04:46 21:58	05:49 20:49	06:55 19:24	08:00 18:02	08:10 15:52	14:45 (11) 14:54 (11)
21	04:47 21:57	05:51 20:47	06:57 19:21	08:02 17:59	08:13 15:51	14:44 (11) 14:55 (11)
22	04:49 21:55	05:53 20:44	06:59 19:18	08:04 17:56	16:50 (4) 16:57 (4)	14:44 (11) 14:57 (11)
23	04:51 21:53	05:55 20:41	07:01 19:16	08:07 17:54	16:48 (4) 17:00 (4)	14:43 (11) 14:57 (11)
24	04:53 21:51	05:58 20:39	07:03 19:13	18:14 (2) 18:20 (2)	08:09 17:51	16:46 (4) 17:01 (4)
25	04:55 21:49	06:00 20:36	07:05 19:10	18:10 (2) 18:23 (2)	07:11 16:49	15:45 (4) 16:02 (4)
26	04:57 21:47	06:02 20:33	07:07 19:07	18:08 (2) 18:24 (2)	07:13 16:46	15:44 (4) 16:03 (4)
27	04:59 21:45	06:04 20:31	07:10 19:04	18:07 (2) 18:24 (2)	07:16 16:44	15:44 (4) 16:03 (4)
28	05:01 21:43	06:06 20:28	07:12 19:02	18:05 (2) 18:25 (2)	07:18 16:41	15:43 (4) 16:03 (4)
29	05:03 21:41	06:08 20:25	07:14 18:59	18:05 (2) 18:24 (2)	07:20 16:39	15:43 (4) 16:04 (4)
30	05:05 21:39	06:10 20:23	07:16 18:56	18:05 (2) 18:25 (2)	07:23 16:37	15:43 (4) 16:01 (4)
31	05:07 21:37	06:12 20:20		07:25 16:34	15:44 (4) 15:59 (4)	15:38 15:38
Potential sun hours	538	474	386	321	241	207
Total, worst case			111	220	185	28
Sun reduction			0.46	0.28	0.08	0.06
Oper. time red.			1.00	1.00	1.00	1.00
Wind dir. red.			1.00	1.00	1.00	1.00
Total reduction			0.46	0.28	0.08	0.06
Total, real			51	62	15	2

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Maja 3 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (501)
Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December	
1	09:00 15:39	08:21 16:40	07:13 17:46	17:08 (4) 19:55	06:47 21:01	04:27 22:02	04:20 21:35	05:09 21:35	06:15 20:17	07:18 18:53	07:27 16:32	08:33 15:37	
2	09:00 15:40	08:19 16:42	07:11 17:48	17:08 (4) 19:57	06:45 21:03	04:25 22:04	04:21 21:33	05:11 21:33	06:17 20:14	07:20 18:50	07:30 16:29	08:34 15:36	
3	08:59 15:42	08:17 16:44	07:08 17:50	17:08 (4) 19:59	06:42 21:05	04:24 22:05	04:21 21:31	05:13 20:12	06:19 20:12	07:22 18:48	07:32 16:27	08:36 15:35	
4	08:59 15:43	08:14 16:47	07:05 17:52	17:07 (4) 20:01	06:39 21:08	04:23 22:07	04:22 21:28	05:15 20:09	06:21 20:09	07:25 18:45	07:34 16:25	08:38 15:34	
5	08:58 15:45	08:12 16:49	07:02 17:55	17:07 (4) 20:04	06:36 21:10	04:22 22:08	04:24 21:26	05:17 20:06	06:23 20:06	07:27 18:42	9 17:48 (4) 17:57 (4)	07:36 16:22	08:40 15:33
6	08:58 15:46	08:10 16:51	07:00 17:57	17:08 (4) 20:06	06:34 21:12	04:21 22:09	04:25 21:24	05:19 20:03	06:25 20:03	07:29 18:39	12 17:46 (4) 17:58 (4)	07:39 16:20	08:41 15:32
7	08:57 15:48	08:08 16:54	06:57 17:59	17:09 (4) 20:08	06:31 21:14	05:13 22:11	04:20 22:15	05:21 21:21	06:27 20:00	07:31 18:36	15 17:44 (4) 17:59 (4)	07:41 16:18	08:43 15:32
8	08:56 15:49	08:06 16:56	06:54 18:02	17:10 (4) 20:10	06:28 21:16	05:11 22:12	04:19 22:14	05:23 21:19	06:29 19:58	07:33 18:34	16 17:43 (4) 17:59 (4)	07:43 16:16	08:44 15:31
9	08:56 15:51	08:03 16:59	06:52 18:04	17:13 (4) 20:12	06:25 21:19	05:09 22:13	04:18 22:13	05:26 21:17	06:32 19:55	07:35 18:31	16 17:43 (4) 17:59 (4)	07:46 16:14	08:46 15:30
10	08:55 15:53	08:01 17:01	06:49 18:06	17:17 (4) 20:15	06:23 21:21	05:06 22:14	04:18 22:12	05:28 21:14	06:34 19:52	07:38 18:28	14 17:42 (4) 17:56 (4)	07:48 16:12	08:47 15:30
11	08:54 15:55	07:59 17:03	06:46 18:08	06:20 20:17	05:04 21:23	04:17 22:15	04:31 22:11	05:30 21:12	06:36 19:49	07:40 18:26	11 17:42 (4) 17:53 (4)	07:50 16:09	08:49 15:30
12	08:53 15:56	07:56 17:06	06:43 18:11	06:17 20:19	05:02 21:25	04:17 22:16	04:33 22:10	05:32 21:09	06:38 19:46	18:57 (2) 19:06 (2)	7 17:42 (4) 17:50 (4)	07:42 16:07	08:50 15:29
13	08:52 15:58	07:54 17:08	06:41 18:13	06:14 20:21	05:00 21:27	04:16 22:17	04:34 22:09	05:34 21:07	06:40 19:44	18:55 (2) 19:07 (2)	5 17:43 (4) 17:48 (4)	07:55 16:05	08:51 15:29
14	08:50 16:00	07:52 17:11	06:38 18:15	06:12 20:23	04:58 21:29	04:16 22:18	04:36 22:07	05:36 21:05	06:42 19:41	18:54 (2) 19:08 (2)	2 17:43 (4) 17:45 (4)	07:57 16:03	08:52 15:29
15	08:49 16:02	07:49 17:13	06:35 18:17	06:09 21:31	04:56 22:18	04:15 22:06	05:37 21:02	05:38 19:38	06:44 19:38	18:53 (2) 19:07 (2)	14 17:42 (4) 17:53 (4)	07:59 16:01	08:53 15:29
16	08:48 16:04	07:47 17:15	06:32 18:19	06:06 21:33	04:53 22:19	04:15 22:05	05:39 21:00	05:40 19:35	06:46 19:35	18:52 (2) 19:04 (2)	12 17:42 (4) 17:54 (4)	08:02 16:00	08:54 15:29
17	08:47 16:06	07:44 17:18	06:29 18:22	06:04 21:35	04:51 22:19	04:15 22:03	05:43 20:57	05:38 19:32	06:48 19:32	18:51 (2) 19:01 (2)	10 17:42 (4) 17:53 (4)	08:04 16:00	08:55 15:29
18	08:45 16:08	07:42 17:20	06:27 18:24	06:01 21:37	04:49 22:32	04:15 22:20	05:45 22:01	05:45 20:54	06:51 19:30	18:51 (2) 18:58 (2)	7 17:42 (4) 17:53 (4)	08:06 16:00	08:56 15:29
19	08:44 16:10	07:39 17:22	06:24 18:26	05:58 21:39	04:48 22:30	04:15 22:20	05:47 22:00	05:47 20:52	06:53 19:27	18:51 (2) 18:56 (2)	5 17:42 (4) 17:53 (4)	08:08 16:00	08:57 15:29
20	08:42 16:13	07:37 17:25	06:21 18:28	05:56 21:41	04:46 22:31	04:15 22:21	05:49 21:58	05:49 20:49	06:55 19:24	18:52 (2) 18:53 (2)	1 17:42 (4) 17:53 (4)	08:10 16:00	08:58 15:29
21	08:41 16:15	07:34 17:27	06:18 18:31	05:53 21:43	04:44 20:39	04:15 22:21	05:47 21:57	05:51 20:47	06:57 19:21	18:52 (2) 18:53 (2)	17:59 17:59	08:13 16:00	08:58 15:30
22	08:39 16:17	07:32 17:29	06:15 18:33	05:50 21:45	04:42 20:41	04:15 22:21	05:49 21:55	05:53 20:44	06:59 19:18	18:52 (2) 19:04 (2)	08:04 17:56	08:15 16:00	08:59 15:30
23	08:38 16:19	07:29 17:32	06:13 18:35	05:48 21:47	04:40 22:43	04:15 22:21	05:51 21:53	05:55 20:41	07:01 19:16	18:51 (2) 19:07 (2)	08:07 17:54	08:17 16:00	08:59 15:31
24	08:36 16:21	07:26 17:34	06:10 18:37	05:45 21:49	04:38 22:49	04:15 22:21	05:53 21:51	05:58 20:39	07:03 19:13	18:50 (2) 19:04 (2)	08:09 17:11	08:19 16:00	09:00 15:31
25	08:34 16:24	07:24 17:36	06:07 18:39	05:43 21:51	04:37 22:51	04:16 22:21	06:00 21:49	06:00 20:36	07:05 19:10	18:49 (2) 19:04 (2)	07:11 16:49	08:21 15:45	09:00 15:32
26	08:32 16:26	07:21 17:39	06:04 18:42	05:40 21:52	04:35 22:52	04:16 22:21	06:02 21:47	06:02 20:33	07:05 19:07	18:47 (2) 18:52 (2)	07:13 16:46	08:23 15:43	09:06 15:33
27	08:30 16:28	07:19 17:41	06:01 18:44	05:37 21:54	04:34 22:52	04:17 22:21	06:04 21:45	06:04 20:31	07:10 19:04	18:47 (2) 18:52 (2)	07:16 16:44	08:25 15:42	09:00 15:34
28	08:29 16:30	07:16 17:43	05:59 18:46	05:35 21:56	04:32 22:54	04:17 22:21	06:06 21:43	06:06 20:28	07:12 19:01	18:46 (2) 18:51 (2)	07:18 16:41	08:27 15:41	09:01 15:34
29	08:27 16:33	07:14 17:44	05:56 18:47	05:32 21:57	04:31 22:57	04:18 22:21	06:08 21:41	06:08 20:25	07:14 18:59	18:45 (2) 18:50 (2)	07:20 16:39	08:29 15:39	09:01 15:35
30	08:25 16:35	07:12 17:46	05:53 18:49	05:30 21:59	04:29 22:59	04:19 22:20	06:10 21:39	06:10 20:23	07:16 18:56	18:44 (2) 18:49 (2)	07:23 16:36	08:31 15:38	09:00 15:37
31	08:23 16:37	07:10 17:48	05:50 18:53	05:27 22:01	04:28 22:01	05:07 21:37	06:12 20:20	06:12 19:10	07:25 18:56	18:43 (2) 18:48 (2)	07:25 16:34	08:33 15:38	09:00 15:38
Potential sun hours	227	262	365	429	515	539	538	474	386	321	241	207	
Total, worst case		3	186						84	108			
Sun reduction		0.19	0.40						0.46	0.28			
Oper. time red.		1.00	1.00						1.00	1.00			
Wind dir. red.		1.00	1.00						1.00	1.00			
Total reduction		0.19	0.40						0.46	0.28			
Total, real		1	75						39	31			

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Last time (hh:mm) with flicker	(WTG causing flicker last time)

Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Maja 4 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (474)
 Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June
1	09:00	08:21	16:00 (11)	07:13	17:06 (4)	06:47
	15:39	16:40	3	16:03 (11)	17:46	9
2	09:00	08:19	16:00 (11)	07:11	17:15 (4)	19:55
	15:40	16:42	6	16:06 (11)	17:48	12
3	08:59	08:17	15:59 (11)	07:08	17:05 (4)	06:42
	15:42	16:44	9	16:08 (11)	17:50	15
4	08:59	08:14	15:59 (11)	07:05	17:05 (4)	06:39
	15:43	16:47	12	16:11 (11)	17:52	17
5	08:58	08:12	16:00 (11)	07:02	17:05 (4)	06:36
	15:45	16:49	14	16:14 (11)	17:55	17
6	08:58	08:10	16:00 (11)	07:00	17:06 (4)	06:34
	15:46	16:52	16	16:16 (11)	17:57	16
7	08:57	08:08	16:01 (11)	06:57	17:07 (4)	06:31
	15:48	16:54	15	16:16 (11)	17:59	14
8	08:56	08:06	16:01 (11)	06:54	17:08 (4)	06:28
	15:49	16:56	14	16:15 (11)	18:02	11
9	08:56	08:03	16:03 (11)	06:52	17:10 (4)	06:25
	15:51	16:59	11	16:14 (11)	18:04	6
10	08:55	08:01	16:05 (11)	06:49	17:16 (4)	20:12
	15:53	17:01	7	16:12 (11)	18:06	20:15
11	08:54	07:59		06:46	17:07 (4)	06:20
	15:55	17:03		18:08	20:17	20:17
12	08:53	07:56		06:43	06:17	05:02
	15:56	17:06		18:11	20:19	21:25
13	08:52	07:54		06:41	06:14	05:00
	15:58	17:08		18:13	20:21	21:27
14	08:50	07:52		06:38	06:12	04:58
	16:00	17:11		18:15	20:23	21:29
15	08:49	07:49		06:35	06:09	04:56
	16:02	17:13		18:17	20:26	21:31
16	08:48	07:47		06:32	06:06	04:53
	16:04	17:15		18:19	20:28	21:33
17	08:47	07:44		06:29	06:04	04:51
	16:06	17:18		18:22	20:30	21:35
18	08:45	07:42		06:27	06:01	04:49
	16:08	17:20		18:24	20:32	21:37
19	08:44	07:39		06:24	05:58	04:48
	16:10	17:22		18:26	20:35	21:39
20	08:42	07:37		06:21	05:56	04:46
	16:13	17:25		18:28	20:37	21:41
21	08:41	07:34		06:18	05:53	04:44
	16:15	17:27		18:31	20:39	21:43
22	08:39	07:32		06:15	05:50	04:42
	16:17	17:29		18:33	20:41	21:45
23	08:38	07:29		06:13	05:48	04:40
	16:19	17:32		18:35	20:43	21:47
24	08:36	07:26		06:10	18:07 (2)	05:45
	16:21	17:34		18:37	1	18:08 (2)
25	08:34	07:24		06:07	18:05 (2)	05:43
	16:24	17:36		18:39	5	18:10 (2)
26	08:32	07:21		06:04	18:04 (2)	05:40
	16:26	17:39		18:42	8	18:12 (2)
27	08:31	07:19		06:01	18:03 (2)	05:37
	16:28	17:41	2	17:11 (4)	18:14 (2)	20:52
28	08:29	07:16		05:59	18:03 (2)	05:35
	16:30	17:43	6	17:13 (4)	18:17 (2)	20:54
29	08:27			06:56	19:03 (2)	05:32
	16:33			19:48	16	19:19 (2)
30	08:25			06:53	19:03 (2)	05:30
	16:35			19:50	16	19:19 (2)
31	08:23			06:50	19:04 (2)	05:28
	16:37			19:53	13	19:17 (2)
Potential sun hours	227	262	365	429	515	539
Total, worst case		115	201	13		
Sun reduction		0.19	0.40	0.43		
Oper. time red.		1.00	1.00	1.00		
Wind dir. red.		1.00	1.00	1.00		
Total reduction		0.19	0.40	0.43		
Total, real		22	81	6		

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Maja 4 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (474)
 Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	July	August	September	October	November	December
1	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:27 16:32	15:34 (11) 15:42 (11)
2	04:21 22:19	05:11 21:33	06:17 20:14	07:20 18:50	8 16:29	15:33 (11) 15:44 (11)
3	04:21 22:19	05:13 21:31	06:19 20:12	07:22 18:48	11 16:27	15:31 (11) 15:45 (11)
4	04:22 22:18	05:15 21:28	06:21 20:09	07:25 18:45	14 16:25	15:31 (11) 15:46 (11)
5	04:24 22:17	05:17 21:26	06:23 20:06	07:27 18:42	15 17:46 (4)	15:30 (11) 15:46 (11)
6	04:25 22:16	05:19 21:24	06:25 20:03	07:29 18:39	16 17:55 (4)	15:30 (11) 15:44 (11)
7	04:26 22:15	05:21 21:21	06:27 20:00	07:31 18:37	14 17:42 (4)	15:30 (11) 15:42 (11)
8	04:27 22:14	05:23 21:19	06:29 19:58	07:33 18:34	15 17:57 (4)	15:30 (11) 15:39 (11)
9	04:28 22:13	05:26 21:17	06:32 19:55	07:35 18:31	16 17:40 (4)	15:31 (11) 15:37 (11)
10	04:30 22:12	05:28 21:14	06:34 19:52	07:38 18:28	9 17:58 (4)	15:31 (11) 15:34 (11)
11	04:31 22:11	05:30 21:12	06:36 19:49	07:40 18:26	16 17:40 (4)	07:50 15:30
12	04:33 22:10	05:32 21:10	06:38 19:46	07:42 18:23	14 17:53 (4)	07:53 15:29
13	04:34 22:09	05:34 21:07	06:40 19:44	07:44 18:20	11 17:50 (4)	07:55 15:29
14	04:36 22:07	05:36 21:05	06:42 19:41	07:46 18:17	8 17:48 (4)	16:05 15:29
15	04:37 22:06	05:38 21:02	06:44 19:38	07:49 18:15	4 17:45 (4)	16:03 15:29
16	04:39 22:05	05:40 21:00	06:46 19:35	07:51 18:12		16:02 15:29
17	04:40 22:03	05:43 20:57	06:48 19:32	07:53 18:09		08:04 15:29
18	04:42 22:01	05:45 20:54	06:51 19:30	07:55 18:07		08:06 15:29
19	04:44 22:00	05:47 20:52	06:53 19:27	07:58 18:04		08:08 15:29
20	04:46 21:58	05:49 20:49	06:55 19:24	08:00 18:02		08:10 15:29
21	04:47 21:57	05:51 20:47	06:57 19:21	08:02 17:59		08:13 15:30
22	04:49 21:55	05:53 20:44	06:59 19:18	08:04 17:56		08:15 15:30
23	04:51 21:53	05:55 20:41	07:01 19:16	08:07 17:54		08:17 15:31
24	04:53 21:51	05:58 20:39	07:03 19:13	08:09 17:51		08:19 15:31
25	04:55 21:49	06:00 20:36	07:05 19:10	07:11 16:49		08:21 15:32
26	04:57 21:47	06:02 20:33	07:07 19:07	07:13 16:46		08:23 15:33
27	04:59 21:45	06:04 20:31	07:10 19:04	07:16 16:44		08:25 15:34
28	05:01 21:43	06:06 20:28	07:12 19:02	07:18 16:41		08:27 15:34
29	05:03 21:41	06:08 20:25	07:14 18:59	07:20 16:39		08:29 15:35
30	05:05 21:39	06:10 20:23	07:16 18:56	07:23 16:36		08:31 15:37
31	05:07 21:37	06:12 20:20		07:25 16:34		09:00 15:38
Potential sun hours	538	474	386	321	241	207
Total, worst case			99	126	108	
Sun reduction			0.46	0.28	0.08	
Oper. time red.			1.00	1.00	1.00	
Wind dir. red.			1.00	1.00	1.00	
Total reduction			0.46	0.28	0.08	
Total, real			46	36	8	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Maja 5 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (588)
 Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June
1	09:00	08:21	16:00 (11)	07:13	17:03 (4)	06:47
	15:39	16:40	3 16:03 (11)	17:46	12 17:15 (4)	19:55
2	09:00	08:19	16:00 (11)	07:11	17:03 (4)	06:45
	15:40	16:42	6 16:06 (11)	17:48	15 17:18 (4)	19:57
3	08:59	08:17	15:59 (11)	07:08	17:03 (4)	06:42
	15:42	16:44	9 16:08 (11)	17:50	17 17:20 (4)	19:59
4	08:59	08:14	16:00 (11)	07:05	17:03 (4)	06:39
	15:43	16:47	11 16:11 (11)	17:52	17 17:20 (4)	20:01
5	08:58	08:12	16:01 (11)	07:02	17:04 (4)	06:36
	15:45	16:49	13 16:14 (11)	17:55	15 17:19 (4)	20:04
6	08:58	08:10	16:01 (11)	07:00	17:05 (4)	06:34
	15:46	16:51	15 16:16 (11)	17:57	13 17:18 (4)	20:06
7	08:57	08:08	16:02 (11)	06:57	17:07 (4)	06:31
	15:48	16:54	14 16:16 (11)	17:59	8 17:15 (4)	20:08
8	08:56	08:06	16:02 (11)	06:54		06:28
	15:49	16:56	12 16:14 (11)	18:02		20:10
9	08:56	08:03	16:05 (11)	06:52		06:25
	15:51	16:59	8 16:13 (11)	18:04		20:12
10	08:55	08:01		06:49		06:23
	15:53	17:01		18:06		20:15
11	08:54	07:59		06:46		06:20
	15:55	17:03		18:08		20:17
12	08:53	07:56		06:43		06:17
	15:56	17:06		18:11		20:19
13	08:52	07:54		06:41		06:14
	15:58	17:08		18:13		20:21
14	08:50	07:52		06:38		06:12
	16:00	17:11		18:15		20:23
15	08:49	07:49		06:35		06:09
	16:02	17:13		18:17		20:26
16	08:48	07:47		06:32		06:06
	16:04	17:15		18:19		20:28
17	08:47	07:44		06:29		06:04
	16:06	17:18		18:22		20:30
18	08:45	07:42		06:27		06:01
	16:08	17:20		18:24		20:32
19	08:44	07:39		06:24		05:58
	16:10	17:22		18:26		20:35
20	08:42	07:37		06:21		05:56
	16:13	17:25		18:28		20:37
21	08:41	07:34		06:18		05:53
	16:15	17:27		18:31		20:39
22	08:39	07:32		06:15	18:02 (2)	05:50
	16:17	17:29		18:33	1 18:03 (2)	20:41
23	08:38	07:29		06:13	18:02 (2)	05:48
	16:19	17:32		18:35	4 18:06 (2)	20:43
24	08:36	07:26		06:10	18:01 (2)	05:45
	16:21	17:34		18:37	7 18:08 (2)	20:46
25	08:34	07:24		06:07	18:00 (2)	05:43
	16:24	17:36		18:39	10 18:10 (2)	20:48
26	08:32	07:21	17:07 (4)	06:04	17:59 (2)	05:40
	16:26	17:39	1 17:08 (4)	18:42	13 18:12 (2)	20:50
27	08:31	07:19	17:05 (4)	06:01	17:59 (2)	05:37
	16:28	17:41	6 17:11 (4)	18:44	15 18:14 (2)	20:52
28	08:29	07:16	17:04 (4)	05:59	18:00 (2)	05:35
	16:30	17:43	9 17:13 (4)	18:46	15 18:15 (2)	20:54
29	08:27			06:56	19:01 (2)	05:32
	16:33			19:48	12 19:13 (2)	20:57
30	08:25			06:53	19:02 (2)	05:30
	16:35			19:50	9 19:11 (2)	20:59
31	08:23			06:50		
	16:37			19:53		22:01
Potential sun hours	227	262	365		429	515
Total, worst case				183		
Sun reduction		0.19		0.40		
Oper. time red.		1.00		1.00		
Wind dir. red.		1.00		1.00		
Total reduction		0.19		0.40		
Total, real		21		74		

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Maja 5 - Shadow Receptor: 1.0×1.0 Azimuth: 3.1° Slope: 90.0° (588)
 Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	July	August	September	October	November	December
1	04:20	05:09	06:15	07:18	07:27	15:37 (11)
	22:20	21:35	20:17	18:53	16:32	2 15:39 (11)
2	04:21	05:11	06:17	07:20	07:30	15:34 (11)
	22:19	21:33	20:14	18:50	16:29	9 15:43 (11)
3	04:21	05:13	06:19	07:22	07:32	15:32 (11)
	22:19	21:31	20:12	18:48	16:27	12 15:44 (11)
4	04:22	05:15	06:21	07:25	07:34	15:31 (11)
	22:18	21:28	20:09	18:45	16:25	14 15:45 (11)
5	04:24	05:17	06:23	07:27	07:36	15:30 (11)
	22:17	21:26	20:06	18:42	16:22	15 15:45 (11)
6	04:25	05:19	06:25	07:29	17:45 (4)	07:39
	22:16	21:24	20:03	18:39	5 17:50 (4)	16:20
7	04:26	05:21	06:27	07:31	17:42 (4)	07:41
	22:15	21:21	20:00	18:37	10 17:52 (4)	16:18
8	04:27	05:23	06:29	07:33	17:39 (4)	07:43
	22:14	21:19	19:58	18:34	14 17:53 (4)	16:16
9	04:28	05:26	06:32	07:35	17:39 (4)	07:46
	22:13	21:17	19:55	18:31	16 17:55 (4)	16:14
10	04:30	05:28	06:34	07:38	17:38 (4)	07:48
	22:12	21:14	19:52	18:28	17 17:55 (4)	16:12
11	04:31	05:30	06:36	07:40	17:37 (4)	07:50
	22:11	21:12	19:49	18:26	16 17:53 (4)	16:09
12	04:33	05:32	06:38	07:42	17:36 (4)	07:53
	22:10	21:10	19:46	18:23	14 17:50 (4)	16:07
13	04:34	05:34	06:40	18:54 (2)	07:44	17:37 (4)
	22:09	21:07	19:44	8 19:02 (2)	18:20	11 17:48 (4)
14	04:36	05:36	06:42	18:51 (2)	07:46	17:37 (4)
	22:07	21:05	19:41	12 19:03 (2)	18:17	8 17:45 (4)
15	04:37	05:38	06:44	18:50 (2)	07:49	17:37 (4)
	22:06	21:02	19:38	14 19:04 (2)	18:15	4 17:41 (4)
16	04:39	05:40	06:46	18:49 (2)	07:51	08:02
	22:05	21:00	19:35	15 19:04 (2)	18:12	16:00
17	04:40	05:43	06:48	18:48 (2)	07:53	08:04
	22:03	20:57	19:32	13 19:01 (2)	18:09	15:58
18	04:42	05:45	06:51	18:47 (2)	07:55	08:06
	22:01	20:54	19:30	11 18:58 (2)	18:07	15:56
19	04:44	05:47	06:53	18:47 (2)	07:58	08:08
	22:00	20:52	19:27	9 18:56 (2)	18:04	15:54
20	04:46	05:49	06:55	18:47 (2)	08:00	08:10
	21:58	20:49	19:24	6 18:53 (2)	18:02	15:52
21	04:47	05:51	06:57	18:48 (2)	08:02	08:13
	21:57	20:47	19:21	2 18:50 (2)	17:59	15:51
22	04:49	05:53	06:59	08:04	08:15	08:59
	21:55	20:44	19:18	17:56	15:49	15:30
23	04:51	05:55	07:01	08:07	08:17	08:59
	21:53	20:41	19:16	17:54	15:48	15:31
24	04:53	05:58	07:03	08:09	08:19	09:00
	21:51	20:39	19:13	17:51	15:46	15:31
25	04:55	06:00	07:05	07:11	08:21	09:00
	21:49	20:36	19:10	16:49	15:45	15:32
26	04:57	06:02	07:07	07:13	08:23	09:00
	21:47	20:33	19:07	16:46	15:43	15:33
27	04:59	06:04	07:10	07:16	08:25	09:00
	21:45	20:31	19:04	16:44	15:42	15:34
28	05:01	06:06	07:12	07:18	08:27	09:01
	21:43	20:28	19:02	16:41	15:41	15:34
29	05:03	06:08	07:14	07:20	08:29	09:01
	21:41	20:25	18:59	16:39	15:39	15:35
30	05:05	06:10	07:16	07:23	08:31	09:01
	21:39	20:23	18:56	16:36	15:38	15:37
31	05:07	06:12		07:25		09:00
	21:37	20:20		16:34		15:38
Potential sun hours	538	474	386	321	241	207
Total, worst case			90	115	95	
Sun reduction			0.46	0.28	0.08	
Oper. time red.			1.00	1.00	1.00	
Wind dir. red.			1.00	1.00	1.00	
Total reduction			0.46	0.28	0.08	
Total, real			42	33	7	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa
Assumptions for shadow calculations

Shadow receptor: Maja 6 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (493)
Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June
1	09:00	08:21	15:54 (11)	07:13	17:00 (4)	06:47
	15:39	16:40	9 16:03 (11)	17:46	15 17:15 (4)	19:55
2	09:00	08:19	15:55 (11)	07:11	17:01 (4)	06:45
	15:40	16:42	11 16:06 (11)	17:48	17 17:18 (4)	19:57
3	08:59	08:17	15:54 (11)	07:08	17:01 (4)	06:42
	15:42	16:44	14 16:08 (11)	17:50	18 17:19 (4)	19:59
4	08:59	08:14	15:55 (11)	07:05	17:01 (4)	06:39
	15:43	16:47	16 16:11 (11)	17:52	17 17:18 (4)	20:01
5	08:58	08:12	15:56 (11)	07:02	17:01 (4)	06:36
	15:45	16:49	15 16:11 (11)	17:55	15 17:16 (4)	20:04
6	08:58	08:10	15:56 (11)	07:00	17:03 (4)	06:34
	15:46	16:52	14 16:10 (11)	17:57	13 17:16 (4)	20:06
7	08:57	08:08	15:58 (11)	06:57	17:05 (4)	06:31
	15:48	16:54	12 16:10 (11)	17:59	8 17:13 (4)	20:08
8	08:56	08:06	15:59 (11)	06:54		06:28
	15:49	16:56	8 16:07 (11)	18:02		20:10
9	08:56	08:03		06:52		06:25
	15:51	16:59		18:04		20:12
10	08:55	08:01		06:49		06:23
	15:53	17:01		18:06		20:15
11	08:54	07:59		06:46		06:20
	15:55	17:03		18:08		20:17
12	08:53	07:56		06:43		06:17
	15:56	17:06		18:11		20:19
13	08:52	07:54		06:41		06:14
	15:58	17:08		18:13		20:21
14	08:50	07:52		06:38		06:12
	16:00	17:11		18:15		20:23
15	08:49	07:49		06:35		06:09
	16:02	17:13		18:17		20:26
16	08:48	07:47		06:32		06:06
	16:04	17:15		18:19		20:28
17	08:47	07:44		06:29		06:04
	16:06	17:18		18:22		20:30
18	08:45	07:42		06:27		06:01
	16:08	17:20		18:24		20:32
19	08:44	07:39		06:24		05:58
	16:10	17:22		18:26		20:35
20	08:42	07:37		06:21		05:56
	16:13	17:25		18:28		20:37
21	08:41	07:34		06:18		05:53
	16:15	17:27		18:31		20:39
22	08:39	07:32		06:15		05:50
	16:17	17:29		18:33		20:41
23	08:38	07:29		06:13	18:03 (2)	05:48
	16:19	17:32		18:35	3 18:06 (2)	20:43
24	08:36	07:26		06:10	18:01 (2)	05:45
	16:21	17:34		18:37	7 18:08 (2)	20:46
25	08:34	07:24	17:05 (4)	06:07	18:00 (2)	05:43
	16:24	17:36	1 17:06 (4)	18:39	10 18:10 (2)	20:48
26	08:32	07:21	17:03 (4)	06:04	18:00 (2)	05:40
	16:26	17:39	5 17:08 (4)	18:42	12 18:12 (2)	20:50
27	08:31	07:19	17:02 (4)	06:01	17:59 (2)	05:37
	16:28	17:41	9 17:11 (4)	18:44	15 18:14 (2)	20:52
28	08:29	07:16	17:01 (4)	05:59	18:00 (2)	05:35
	16:30	17:43	12 17:13 (4)	18:46	16 18:16 (2)	20:54
29	08:27			06:56	19:00 (2)	05:32
	16:33			19:48	15 19:15 (2)	20:57
30	08:25	15:55 (11)		06:53	19:01 (2)	05:30
	16:35	3 15:58 (11)		19:50	13 19:14 (2)	20:59
31	08:23	15:54 (11)		06:50	19:02 (2)	
	16:37	6 16:00 (11)		19:53	9 19:11 (2)	
Potential sun hours	227	262		365	429	515
Total, worst case	9	126		203		539
Sun reduction	0.11	0.19		0.40		
Oper. time red.	1.00	1.00		1.00		
Wind dir. red.	1.00	1.00		1.00		
Total reduction	0.11	0.19		0.40		
Total, real	1	24		82		

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

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Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Maja 6 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (493)
 Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	July	August	September	October	November	December
1	04:20	05:09	06:15	07:18	07:27	08:33
	22:20	21:35	20:17	18:53	16:32	15:37
2	04:21	05:11	06:17	07:20	07:30	08:34
	22:19	21:33	20:14	18:50	16:29	15:36
3	04:21	05:13	06:19	07:22	07:32	08:36
	22:19	21:31	20:12	18:48	16:27	15:35
4	04:22	05:15	06:21	07:25	07:34	08:38
	22:18	21:28	20:09	18:45	16:25	15:34
5	04:24	05:17	06:23	07:27	07:36	08:40
	22:17	21:26	20:06	18:42	16:22	15:33
6	04:25	05:19	06:25	07:29	17:43 (4)	07:39
	22:16	21:24	20:03	18:39	4 17:47 (4)	16:20
7	04:26	05:21	06:27	07:31	17:39 (4)	07:41
	22:15	21:22	20:00	18:37	11 17:50 (4)	16:18
8	04:27	05:23	06:29	07:33	17:37 (4)	07:43
	22:14	21:19	19:58	18:34	14 17:51 (4)	16:16
9	04:28	05:26	06:32	07:35	17:36 (4)	07:46
	22:13	21:17	19:55	18:31	17 17:53 (4)	16:14
10	04:30	05:28	06:34	07:38	17:35 (4)	07:48
	22:12	21:14	19:52	18:28	18 17:53 (4)	16:12
11	04:31	05:30	06:36	07:40	17:34 (4)	07:50
	22:11	21:12	19:49	18:26	19 17:53 (4)	16:09
12	04:33	05:32	06:38	18:55 (2)	07:42	17:34 (4)
	22:10	21:10	19:47	8 19:03 (2)	18:23	16 17:50 (4)
13	04:34	05:34	06:40	18:52 (2)	07:44	17:34 (4)
	22:09	21:07	19:44	13 19:05 (2)	18:20	14 17:48 (4)
14	04:36	05:36	06:42	18:51 (2)	07:46	17:34 (4)
	22:07	21:05	19:41	14 19:05 (2)	18:17	11 17:45 (4)
15	04:37	05:38	06:44	18:50 (2)	07:49	17:34 (4)
	22:06	21:02	19:38	16 19:06 (2)	18:15	7 17:41 (4)
16	04:39	05:40	06:46	18:49 (2)	07:51	17:36 (4)
	22:05	21:00	19:35	15 19:04 (2)	18:12	3 17:39 (4)
17	04:40	05:43	06:48	18:48 (2)	07:53	08:04
	22:03	20:57	19:32	13 19:01 (2)	18:09	15:58
18	04:42	05:45	06:51	18:48 (2)	07:55	08:06
	22:01	20:54	19:30	10 18:58 (2)	18:07	15:56
19	04:44	05:47	06:53	18:48 (2)	07:58	08:08
	22:00	20:52	19:27	8 18:56 (2)	18:04	15:54
20	04:46	05:49	06:55	18:48 (2)	08:00	08:10
	21:58	20:49	19:24	5 18:53 (2)	18:02	15:52
21	04:47	05:51	06:57	18:49 (2)	08:02	08:13
	21:57	20:47	19:21	1 18:50 (2)	17:59	15:51
22	04:49	05:53	06:59	08:04	08:15	08:59
	21:55	20:44	19:18	17:56	15:49	15:30
23	04:51	05:55	07:01	08:07	08:17	08:59
	21:53	20:41	19:16	17:54	15:48	15:31
24	04:53	05:58	07:03	08:09	08:19	09:00
	21:51	20:39	19:13	17:51	15:46	15:31
25	04:55	06:00	07:05	07:11	08:21	09:00
	21:49	20:36	19:10	16:49	15:45	15:32
26	04:57	06:02	07:07	07:13	08:23	09:00
	21:47	20:33	19:07	16:46	15:43	15:33
27	04:59	06:04	07:10	07:16	08:25	09:00
	21:45	20:31	19:04	16:44	15:42	15:34
28	05:01	06:06	07:12	07:18	08:27	09:01
	21:43	20:28	19:02	16:41	15:41	15:34
29	05:03	06:08	07:14	07:20	08:29	09:01
	21:41	20:25	18:59	16:39	15:39	15:35
30	05:05	06:10	07:16	07:23	08:31	09:01
	21:39	20:23	18:56	16:36	15:38	15:37
31	05:07	06:12		07:25		09:00
	21:37	20:20		16:34		15:38
Potential sun hours	538	474	386	321	241	207
Total, worst case			103	134	109	
Sun reduction			0.46	0.28	0.08	
Oper. time red.			1.00	1.00	1.00	
Wind dir. red.			1.00	1.00	1.00	
Total reduction			0.46	0.28	0.08	
Total, real			48	38	9	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Last time (hh:mm) with flicker	(WTG causing flicker last time)

Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa

Shadow receptor: Maja 7 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (473)

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June
1	09:00	08:21	15:55 (11)	07:13	16:58 (4)	06:47
	15:39	16:40	8	16:03 (11)	17:46	17
2	09:00	08:19	15:55 (11)	07:11	16:59 (4)	06:45
	15:40	16:42	11	16:06 (11)	17:48	17
3	08:59	08:17	15:55 (11)	07:08	16:59 (4)	06:42
	15:42	16:44	13	16:08 (11)	17:50	16
4	08:59	08:14	15:56 (11)	07:05	17:00 (4)	06:39
	15:43	16:47	15	16:11 (11)	17:52	14
5	08:58	08:12	15:57 (11)	07:02	17:01 (4)	06:36
	15:45	16:49	14	16:11 (11)	17:55	11
6	08:58	08:10	15:57 (11)	07:00	17:12 (4)	06:34
	15:46	16:51	13	16:10 (11)	17:57	4
7	08:57	08:08	15:59 (11)	06:57	17:09 (4)	20:06
	15:48	16:54	10	16:09 (11)	17:59	20:08
8	08:56	08:06	16:01 (11)	06:54	20:08	05:11
	15:49	16:56	5	16:06 (11)	18:02	20:10
9	08:56	08:03	06:52	18:04	20:12	21:19
	15:51	16:59	18:04	20:12	21:19	22:13
10	08:55	08:01	06:49	18:06	20:15	21:21
	15:53	17:01	18:06	20:15	21:21	22:14
11	08:54	07:59	06:46	18:08	20:17	21:23
	15:55	17:03	18:08	20:17	21:23	22:15
12	08:53	07:56	06:43	18:11	20:19	21:25
	15:56	17:06	18:11	20:19	21:25	22:16
13	08:52	07:54	06:41	18:13	20:21	21:27
	15:58	17:08	18:13	20:21	21:27	22:17
14	08:50	07:52	06:38	18:15	20:23	21:29
	16:00	17:11	18:15	20:23	21:29	22:18
15	08:49	07:49	06:35	18:19	20:28	21:33
	16:02	17:13	18:17	20:26	21:31	22:18
16	08:48	07:47	06:32	18:22	20:30	21:35
	16:04	17:15	18:19	20:28	21:33	22:19
17	08:47	07:44	06:29	18:24	20:32	21:37
	16:06	17:18	18:22	20:30	21:35	22:19
18	08:45	07:42	06:27	18:26	20:35	21:39
	16:08	17:20	18:24	20:32	21:37	22:20
19	08:44	07:39	06:24	18:28	20:37	21:41
	16:10	17:22	18:26	20:35	21:39	22:20
20	08:42	07:37	06:21	18:31	20:39	21:43
	16:13	17:25	18:28	20:37	21:41	22:21
21	08:41	07:34	06:18	18:33	20:41	21:45
	16:15	17:27	18:31	20:39	21:43	22:21
22	08:39	07:32	06:15	18:35	20:43	21:47
	16:17	17:29	18:33	20:41	21:45	22:21
23	08:38	07:29	06:13	18:37	20:46	21:49
	16:19	17:32	18:35	20:43	21:47	22:21
24	08:36	07:26	06:10	18:39	20:48	21:51
	16:21	17:34	1	17:03 (4)	18:37	11
25	08:34	07:24	06:07	18:41	20:50	21:53
	16:24	17:36	4	17:05 (4)	18:39	14
26	08:32	07:21	06:04	18:43	20:52	21:55
	16:26	17:39	8	17:08 (4)	18:42	16
27	08:31	07:19	06:01	18:46	20:54	21:57
	16:28	17:41	12	17:11 (4)	18:44	15
28	08:29	07:16	05:59	18:48	20:56	21:59
	16:30	17:43	14	17:13 (4)	18:46	12
29	08:27		06:56	19:00 (2)	20:57	21:58
	16:33		19:48	7	19:07 (2)	20:59
30	08:25	15:55 (11)	06:53	19:50	21:59	22:20
	16:35	3	15:58 (11)	06:50	21:59	22:20
31	08:23	15:54 (11)	06:50	19:53	22:01	
	16:37	6	16:00 (11)	365	429	539
Potential sun hours	227	262	365	429	515	539
Total, worst case	9	128	171			
Sun reduction	0.11	0.19	0.40			
Oper. time red.	1.00	1.00	1.00			
Wind dir. red.	1.00	1.00	1.00			
Total reduction	0.11	0.19	0.40			
Total, real	1	25	69			

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Maja 7 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (473)
 Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	July	August	September	October	November	December
1	04:20	05:09	06:15	07:18	07:27	08:33
	22:20	21:35	20:17	18:53	16:32	15:37
2	04:21	05:11	06:17	07:20	07:30	08:34
	22:19	21:33	20:14	18:50	16:29	15:36
3	04:21	05:13	06:19	07:22	07:32	08:36
	22:19	21:31	20:12	18:48	16:27	15:35
4	04:22	05:15	06:21	07:25	07:34	08:38
	22:18	21:28	20:09	18:45	16:25	15:34
5	04:24	05:17	06:23	07:27	07:36	08:40
	22:17	21:26	20:06	18:42	16:22	15:33
6	04:25	05:19	06:25	07:29	07:39	08:41
	22:16	21:24	20:03	18:39	16:20	15:32
7	04:26	05:21	06:27	07:31	07:41	08:43
	22:15	21:21	20:00	18:37	16:18	15:32
8	04:27	05:23	06:29	07:33	17:38 (4)	07:43
	22:14	21:19	19:58	18:34	8 17:46 (4)	16:16
9	04:28	05:26	06:32	07:35	17:36 (4)	07:46
	22:13	21:17	19:55	18:31	13 17:49 (4)	16:14
10	04:30	05:28	06:34	07:38	17:34 (4)	07:48
	22:12	21:14	19:52	18:28	15 17:49 (4)	16:12
11	04:31	05:30	06:36	07:40	17:33 (4)	07:50
	22:11	21:12	19:49	18:26	16 17:49 (4)	16:09
12	04:33	05:32	06:38	07:42	17:32 (4)	07:53
	22:10	21:10	19:46	18:23	17 17:49 (4)	16:07
13	04:34	05:34	06:40	07:44	17:32 (4)	07:55
	22:09	21:07	19:44	18:20	16 17:48 (4)	16:05
14	04:36	05:36	06:42	18:51 (2)	17:32 (4)	07:57
	22:07	21:05	19:41	6 18:57 (2)	13 17:45 (4)	16:03
15	04:37	05:38	06:44	18:48 (2)	07:49	17:31 (4)
	22:06	21:02	19:38	11 18:59 (2)	10 17:41 (4)	16:01
16	04:39	05:40	06:46	18:46 (2)	07:51	17:33 (4)
	22:05	21:00	19:35	14 19:00 (2)	6 17:39 (4)	16:00
17	04:40	05:43	06:48	18:45 (2)	07:53	17:33 (4)
	22:03	20:57	19:32	15 19:00 (2)	3 17:36 (4)	15:58
18	04:42	05:45	06:51	18:44 (2)	07:55	15:58
	22:01	20:54	19:30	14 18:58 (2)	18:07	15:56
19	04:44	05:47	06:53	18:43 (2)	07:58	15:56
	22:00	20:52	19:27	13 18:56 (2)	18:04	15:54
20	04:46	05:49	06:55	18:43 (2)	08:00	15:52
	21:58	20:49	19:24	10 18:53 (2)	18:02	15:52
21	04:47	05:51	06:57	18:43 (2)	08:02	15:51
	21:57	20:47	19:21	7 18:50 (2)	17:59	15:51
22	04:49	05:53	06:59	18:43 (2)	08:04	15:51
	21:55	20:44	19:18	4 18:47 (2)	17:56	15:49
23	04:51	05:55	07:01	18:47 (2)	08:07	15:48
	21:53	20:41	19:16	17:54	15:48	15:48
24	04:53	05:58	07:03	18:49	08:09	15:46
	21:51	20:39	19:13	17:51	15:46	15:46
25	04:55	06:00	07:05	18:51	08:11	15:45
	21:49	20:36	19:10	16:49	15:45	15:45
26	04:57	06:02	07:07	18:53	08:13	15:43
	21:47	20:33	19:07	16:46	15:43	15:43
27	04:59	06:04	07:10	18:55	08:15	15:42
	21:45	20:31	19:04	16:44	15:42	15:42
28	05:01	06:06	07:12	18:57	08:17	15:41
	21:43	20:28	19:02	16:41	15:41	15:41
29	05:03	06:08	07:14	18:59	08:19	15:39
	21:41	20:25	18:59	16:39	15:39	15:39
30	05:05	06:10	07:16	19:01	08:21	15:37
	21:39	20:23	18:56	16:36	15:38	15:37
31	05:07	06:12		19:03	08:23	15:35
	21:37	20:20		16:34		15:35
Potential sun hours	538	474	386	321	241	207
Total, worst case			94	117	102	
Sun reduction			0.46	0.28	0.08	
Oper. time red.			1.00	1.00	1.00	
Wind dir. red.			1.00	1.00	1.00	
Total reduction			0.46	0.28	0.08	
Total, real			43	33	8	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Maja 8 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (587)
Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June
1	09:00	08:21	15:49 (11)	07:13	16:55 (4)	06:47
	15:39	16:40	14	16:03 (11)	17:46	19
2	09:00	08:19	15:50 (11)	07:11	17:14 (4)	19:55
	15:40	16:42	16	16:06 (11)	17:48	18
3	08:59	08:17	15:50 (11)	07:08	16:57 (4)	06:42
	15:42	16:44	15	16:05 (11)	17:50	16
4	08:59	08:14	15:51 (11)	07:05	16:57 (4)	06:39
	15:43	16:47	14	16:05 (11)	17:52	14
5	08:58	08:12	15:53 (11)	07:02	16:59 (4)	06:36
	15:45	16:49	12	16:05 (11)	17:55	10
6	08:58	08:10	15:54 (11)	07:00	17:09 (4)	20:04
	15:46	16:52	9	16:03 (11)	17:57	20:06
7	08:57	08:08		06:57		06:31
	15:48	16:54		17:59		20:08
8	08:56	08:06		06:54		06:28
	15:49	16:56		18:02		20:10
9	08:56	08:03		06:52		06:25
	15:51	16:59		18:04		20:12
10	08:55	08:01		06:49		06:23
	15:53	17:01		18:06		20:15
11	08:54	07:59		06:46		06:20
	15:55	17:03		18:08		20:17
12	08:53	07:56		06:43		06:17
	15:56	17:06		18:11		20:19
13	08:52	07:54		06:41		06:14
	15:58	17:08		18:13		20:21
14	08:51	07:52		06:38		06:12
	16:00	17:11		18:15		20:23
15	08:49	07:49		06:35		06:09
	16:02	17:13		18:17		20:26
16	08:48	07:47		06:32		06:06
	16:04	17:15		18:19		20:28
17	08:47	07:44		06:29		06:04
	16:06	17:18		18:22		20:30
18	08:45	07:42		06:27		06:01
	16:08	17:20		18:24		20:32
19	08:44	07:39		06:24		05:58
	16:10	17:22		18:26		20:35
20	08:42	07:37		06:21		05:56
	16:13	17:25		18:28		20:37
21	08:41	07:34		06:18	17:59 (2)	05:53
	16:15	17:27		18:31	2	18:01 (2)
22	08:39	07:32		06:15	17:58 (2)	05:50
	16:17	17:29		18:33	5	18:03 (2)
23	08:38	07:29		06:13	17:57 (2)	05:48
	16:19	17:32	1	17:01 (4)	18:35	9
24	08:36	07:26		06:10	17:57 (2)	05:45
	16:21	17:34	5	17:03 (4)	18:37	11
25	08:34	07:24		06:07	17:56 (2)	05:43
	16:24	17:36	8	17:06 (4)	18:39	14
26	08:32	07:21		06:04	17:56 (2)	05:40
	16:26	17:39	11	17:08 (4)	18:42	16
27	08:31	07:19		06:01	17:56 (2)	05:37
	16:28	15:49 (11)		17:11 (4)	18:44	16
28	08:29	15:49 (11)		06:59	17:57 (2)	05:35
	16:30	15:52 (11)	18	17:13 (4)	18:46	15
29	08:27	15:49 (11)		06:56	18:58 (2)	05:32
	16:33	15:55 (11)		19:48	12	19:10 (2)
30	08:25	15:49 (11)		06:53	19:00 (2)	05:30
	16:35	15:58 (11)		19:50	7	19:07 (2)
31	08:23	15:49 (11)		06:50		20:59
	16:37	16:00 (11)		19:53		22:01
Potential sun hours	227	262		365	429	515
Total, worst case	30	138		184		539
Sun reduction	0.11	0.19		0.40		
Oper. time red.	1.00	1.00		1.00		
Wind dir. red.	1.00	1.00		1.00		
Total reduction	0.11	0.19		0.40		
Total, real	3	27		74		

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Maja 8 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (587)
Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	July	August	September	October	November	December
1	04:20	05:09	06:15	07:18	07:27	08:33
	22:20	21:35	20:17	18:53	16:32	15:37
2	04:21	05:11	06:17	07:20	07:30	08:34
	22:19	21:33	20:14	18:50	16:29	15:36
3	04:21	05:13	06:19	07:22	07:32	08:36
	22:19	21:31	20:12	18:48	16:27	15:35
4	04:22	05:15	06:21	07:25	07:34	15:27 (11) 08:38
	22:18	21:28	20:09	18:45	16:25	3 15:30 (11) 15:34
5	04:24	05:17	06:23	07:27	07:36	15:23 (11) 08:40
	22:17	21:26	20:06	18:42	16:22	10 15:33 (11) 15:33
6	04:25	05:19	06:25	07:29	07:39	15:22 (11) 08:41
	22:16	21:24	20:03	18:39	16:20	13 15:35 (11) 15:32
7	04:26	05:21	06:27	07:31	07:41	15:22 (11) 08:43
	22:15	21:22	20:00	18:37	16:18	14 15:36 (11) 15:32
8	04:27	05:23	06:29	07:33	17:36 (4) 07:43	15:21 (11) 08:44
	22:14	21:19	19:58	18:34	6 17:42 (4) 16:16	15 15:36 (11) 15:31
9	04:28	05:26	06:32	07:35	17:34 (4) 07:46	15:21 (11) 08:46
	22:13	21:17	19:55	18:31	11 17:45 (4) 16:14	16 15:37 (11) 15:31
10	04:30	05:28	06:34	07:38	17:32 (4) 07:48	15:20 (11) 08:47
	22:12	21:14	19:52	18:28	14 17:46 (4) 16:12	14 15:34 (11) 15:30
11	04:31	05:30	06:36	07:40	17:30 (4) 07:50	15:20 (11) 08:49
	22:11	21:12	19:49	18:26	17 17:47 (4) 16:09	12 15:32 (11) 15:30
12	04:33	05:32	06:38	07:42	17:29 (4) 07:53	15:20 (11) 08:50
	22:10	21:10	19:47	18:23	18 17:47 (4) 16:07	9 15:29 (11) 15:29
13	04:34	05:34	06:40	18:52 (2) 07:44	17:29 (4) 07:55	15:21 (11) 08:51
	22:09	21:07	19:44	5 18:57 (2) 18:20	19 17:48 (4) 16:05	6 15:27 (11) 15:29
14	04:36	05:36	06:42	18:49 (2) 07:46	17:28 (4) 07:57	15:22 (11) 08:52
	22:07	21:05	19:41	11 19:00 (2) 18:17	17 17:45 (4) 16:03	3 15:25 (11) 15:29
15	04:37	05:38	06:44	18:47 (2) 07:49	17:28 (4) 07:59	15:22 (11) 08:53
	22:06	21:02	19:38	14 19:01 (2) 18:15	13 17:41 (4) 16:02	1 15:23 (11) 15:29
16	04:39	05:40	06:46	18:45 (2) 07:51	17:29 (4) 08:02	08:54
	22:05	21:00	19:35	16 19:01 (2) 18:12	10 17:39 (4) 16:00	15:29
17	04:40	05:43	06:48	18:44 (2) 07:53	17:29 (4) 08:04	08:55
	22:03	20:57	19:32	17 19:01 (2) 18:09	7 17:36 (4) 15:58	15:29
18	04:42	05:45	06:51	18:44 (2) 07:55	17:31 (4) 08:06	08:56
	22:02	20:54	19:30	14 18:58 (2) 18:07	3 17:34 (4) 15:56	15:29
19	04:44	05:47	06:53	18:43 (2) 07:58	08:08	08:57
	22:00	20:52	19:27	13 18:56 (2) 18:04	15:54	15:29
20	04:46	05:49	06:55	18:43 (2) 08:00	08:10	08:58
	21:58	20:49	19:24	10 18:53 (2) 18:02	15:52	15:29
21	04:47	05:51	06:57	18:43 (2) 08:02	08:13	08:58
	21:57	20:47	19:21	7 18:50 (2) 17:59	15:51	15:30
22	04:49	05:53	06:59	18:44 (2) 08:04	08:15	08:59
	21:55	20:44	19:18	3 18:47 (2) 17:56	15:49	15:30
23	04:51	05:55	07:01	08:07	08:17	08:59
	21:53	20:41	19:16	17:54	15:48	15:31
24	04:53	05:58	07:03	08:09	08:19	09:00
	21:51	20:39	19:13	17:51	15:46	15:31
25	04:55	06:00	07:05	07:11	08:21	09:00
	21:49	20:36	19:10	16:49	15:45	15:32
26	04:57	06:02	07:07	07:13	08:23	09:00
	21:47	20:33	19:07	16:46	15:43	15:33
27	04:59	06:04	07:10	07:16	08:25	09:00
	21:45	20:31	19:04	16:44	15:42	15:34
28	05:01	06:06	07:12	07:18	08:27	09:01
	21:43	20:28	19:02	16:41	15:41	15:34
29	05:03	06:08	07:14	07:20	08:29	09:01
	21:41	20:25	18:59	16:39	15:39	15:35
30	05:05	06:10	07:16	07:23	08:31	09:01
	21:39	20:23	18:56	16:36	15:38	15:37
31	05:07	06:12		07:25		09:00
	21:37	20:20		16:34		15:38
Potential sun hours	538	474	386	321	241	207
Total, worst case			110	135	116	
Sun reduction			0.46	0.28	0.08	
Oper. time red.			1.00	1.00	1.00	
Wind dir. red.			1.00	1.00	1.00	
Total reduction			0.46	0.28	0.08	
Total, real			51	38	9	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Maja 9 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (500)
 Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June
1	09:00	08:21	15:46 (11)	07:13	16:51 (4)	06:47
	15:39	16:40	15	16:01 (11)	17:46	14
2	09:00	08:19	15:47 (11)	07:11	16:53 (4)	06:45
	15:40	16:42	14	16:01 (11)	17:48	11
3	08:59	08:17	15:48 (11)	07:08	16:56 (4)	06:42
	15:42	16:44	12	16:00 (11)	17:50	5
4	08:59	08:14	15:50 (11)	07:05	06:39	05:20
	15:43	16:47	9	15:59 (11)	17:52	20:01
5	08:58	08:12	15:54 (11)	07:02	06:36	05:18
	15:45	16:49	2	15:56 (11)	17:55	20:04
6	08:58	08:10	07:00	06:34	05:15	04:21
	15:46	16:51	17:57	20:06	21:12	22:09
7	08:57	08:08	06:57	06:31	05:13	04:20
	15:48	16:54	17:59	20:08	21:14	22:11
8	08:56	08:06	06:54	06:28	05:11	04:19
	15:49	16:56	18:02	20:10	21:16	22:12
9	08:56	08:03	06:52	06:25	05:09	04:18
	15:51	16:59	18:04	20:12	21:19	22:13
10	08:55	08:01	06:49	06:23	05:06	04:18
	15:53	17:01	18:06	20:15	21:21	22:14
11	08:54	07:59	06:46	06:20	05:04	04:17
	15:55	17:03	18:08	20:17	21:23	22:15
12	08:53	07:56	06:43	06:17	05:02	04:17
	15:56	17:06	18:11	20:19	21:25	22:16
13	08:52	07:54	06:41	06:14	05:00	04:16
	15:58	17:08	18:13	20:21	21:27	22:17
14	08:51	07:52	06:38	06:12	04:58	04:16
	16:00	17:11	18:15	20:23	21:29	22:18
15	08:49	07:49	06:35	06:09	04:56	04:15
	16:02	17:13	18:17	20:26	21:31	22:18
16	08:48	07:47	06:32	06:06	04:53	04:15
	16:04	17:15	18:19	20:28	21:33	22:19
17	08:47	07:44	06:29	06:04	04:51	04:15
	16:06	17:18	18:22	20:30	21:35	22:19
18	08:45	07:42	06:27	17:54 (2)	06:01	04:49
	16:08	17:20	18:24	1	17:55 (2)	20:32
19	08:44	07:39	06:24	17:52 (2)	05:58	04:48
	16:10	17:22	18:26	5	17:57 (2)	20:35
20	08:42	07:37	06:21	17:51 (2)	05:56	04:46
	16:13	17:25	18:28	8	17:59 (2)	20:37
21	08:41	07:34	16:53 (4)	06:18	17:50 (2)	05:53
	16:15	17:27	2	16:55 (4)	18:31	11
22	08:39	07:32	16:52 (4)	06:15	17:49 (2)	05:50
	16:17	17:29	6	16:58 (4)	18:33	14
23	08:38	07:29	16:51 (4)	06:13	17:50 (2)	05:48
	16:19	17:32	10	17:01 (4)	18:35	16
24	08:36	07:26	16:50 (4)	06:10	17:50 (2)	05:45
	16:21	17:34	13	17:03 (4)	18:37	16
25	08:34	07:24	16:51 (4)	06:07	17:51 (2)	05:43
	16:24	17:36	15	17:06 (4)	18:39	14
26	08:32	07:21	16:50 (4)	06:04	17:52 (2)	05:40
	16:26	15:48 (11)	17:39	18	17:08 (4)	18:42
27	08:31	15:45 (11)	07:19	16:50 (4)	06:01	17:54 (2)
	16:28	5	15:50 (11)	17:41	18	17:08 (4)
28	08:29	15:45 (11)	07:16	16:51 (4)	05:59	18:46
	16:30	7	15:52 (11)	17:43	16	17:07 (4)
29	08:27	15:45 (11)		06:56	05:32	04:31
	16:33	10	15:55 (11)	19:48	20:57	21:58
30	08:25	15:46 (11)		06:53	05:30	04:29
	16:35	12	15:58 (11)	19:50	20:59	21:59
31	08:23	15:45 (11)		06:50		04:28
	16:37	15	16:00 (11)	19:53		22:01
Potential sun hours	227	262	365	429	515	539
Total, worst case	51	150	131			
Sun reduction	0.11	0.19	0.40			
Oper. time red.	1.00	1.00	1.00			
Wind dir. red.	1.00	1.00	1.00			
Total reduction	0.11	0.19	0.40			
Total, real	6	29	53			

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Maja 9 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (500)
Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	July	August	September	October	November	December	
1	04:20	05:09	06:15	07:18	07:27	08:33	
	22:20	21:35	20:17	18:53	16:32	15:37	
2	04:21	05:11	06:17	07:20	07:30	08:34	
	22:19	21:33	20:14	18:50	16:29	15:36	
3	04:21	05:13	06:19	07:22	07:32	08:36	
	22:19	21:31	20:12	18:48	16:27	15:35	
4	04:22	05:15	06:21	07:25	07:34	08:38	
	22:18	21:28	20:09	18:45	16:25	15:34	
5	04:24	05:17	06:23	07:27	07:36	08:40	
	22:17	21:26	20:06	18:42	16:22	15:33	
6	04:25	05:19	06:25	07:29	07:39	15:23 (11) 08:41	
	22:16	21:24	20:03	18:39	16:20	4 15:27 (11) 15:32	
7	04:26	05:21	06:27	07:31	07:41	15:20 (11) 08:43	
	22:15	21:22	20:00	18:37	16:18	10 15:30 (11) 15:32	
8	04:27	05:23	06:29	07:33	07:43	15:19 (11) 08:44	
	22:14	21:19	19:58	18:34	16:16	12 15:31 (11) 15:31	
9	04:28	05:26	06:32	07:35	07:46	15:18 (11) 08:46	
	22:13	21:17	19:55	18:31	16:14	14 15:32 (11) 15:30	
10	04:30	05:28	06:34	07:38	07:48	15:17 (11) 08:47	
	22:12	21:14	19:52	18:28	16:12	15 15:32 (11) 15:30	
11	04:31	05:30	06:36	07:40	17:28 (4) 07:50	15:17 (11) 08:49	
	22:11	21:12	19:49	18:26	8 17:36 (4) 16:09	15 15:32 (11) 15:30	
12	04:33	05:32	06:38	07:42	17:26 (4) 07:53	15:17 (11) 08:50	
	22:10	21:10	19:47	18:23	12 17:38 (4) 16:07	12 15:29 (11) 15:29	
13	04:34	05:34	06:40	07:44	17:25 (4) 07:55	15:17 (11) 08:51	
	22:09	21:07	19:44	18:20	15 17:40 (4) 16:05	10 15:27 (11) 15:29	
14	04:36	05:36	06:42	07:46	17:23 (4) 07:57	15:18 (11) 08:52	
	22:07	21:05	19:41	18:17	17 17:40 (4) 16:03	7 15:25 (11) 15:29	
15	04:37	05:38	06:44	07:49	17:22 (4) 07:59	15:18 (11) 08:53	
	22:06	21:02	19:38	18:15	18 17:40 (4) 16:01	5 15:23 (11) 15:29	
16	04:39	05:40	06:46	18:44 (2) 07:51	17:22 (4) 08:02	15:19 (11) 08:54	
	22:05	21:00	19:35	4 18:48 (2) 18:12	17 17:39 (4) 16:00	2 15:21 (11) 15:29	
17	04:40	05:43	06:48	18:40 (2) 07:53	17:22 (4) 08:04		08:55
	22:03	20:57	19:32	11 18:51 (2) 18:09	14 17:36 (4) 15:58		15:29
18	04:42	05:45	06:51	18:38 (2) 07:55	17:23 (4) 08:06		08:56
	22:02	20:54	19:30	14 18:52 (2) 18:07	11 17:34 (4) 15:56		15:29
19	04:44	05:47	06:53	18:37 (2) 07:58	17:23 (4) 08:08		08:57
	22:00	20:52	19:27	15 18:52 (2) 18:04	8 17:31 (4) 15:54		15:29
20	04:46	05:49	06:55	18:36 (2) 08:00	17:23 (4) 08:10		08:58
	21:58	20:49	19:24	17 18:53 (2) 18:02	5 17:28 (4) 15:52		15:29
21	04:47	05:51	06:57	18:35 (2) 08:02	17:25 (4) 08:13		08:58
	21:57	20:47	19:21	15 18:50 (2) 17:59	1 17:26 (4) 15:51		15:30
22	04:49	05:53	06:59	18:35 (2) 08:04		08:15	08:59
	21:55	20:44	19:18	12 18:47 (2) 17:56		15:49	15:30
23	04:51	05:55	07:01	18:35 (2) 08:07		08:17	08:59
	21:53	20:41	19:16	10 18:45 (2) 17:54		15:48	15:31
24	04:53	05:58	07:03	18:36 (2) 08:09		08:19	09:00
	21:51	20:39	19:13	6 18:42 (2) 17:51		15:46	15:31
25	04:55	06:00	07:05	18:36 (2) 07:11		08:21	09:00
	21:49	20:36	19:10	3 18:39 (2) 16:49		15:45	15:32
26	04:57	06:02	07:07			08:23	09:00
	21:47	20:33	19:07			15:43	15:33
27	04:59	06:04	07:10			08:25	09:00
	21:45	20:31	19:04			15:42	15:34
28	05:01	06:06	07:12			08:27	09:01
	21:43	20:28	19:02			15:41	15:34
29	05:03	06:08	07:14			08:29	09:01
	21:41	20:25	18:59			15:39	15:35
30	05:05	06:10	07:16			08:31	09:01
	21:39	20:23	18:56			15:38	15:37
31	05:07	06:12					09:00
	21:37	20:20					15:38
Potential sun hours	538	474	386	321	241		207
Total, worst case			107	126	106		
Sun reduction			0.46	0.28	0.08		
Oper. time red.			1.00	1.00	1.00		
Wind dir. red.			1.00	1.00	1.00		
Total reduction			0.46	0.28	0.08		
Total, real			49	36	8		

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Flickering_Valka_Siemens_Gamesa

SIA Estonian, Latvian & Lithuanian environment
Vilandes 3-6
LV-1010 Riga
0037167242411
Baiba / baiba.ozolina@environment.lv
Calculated:
15/01/2026 18:42/4.1.254

Calculation: Flickering_Valka_Siemens_Gameasa Shadow receptor: Malkalni - Shadow Receptor: 1.0×1.0 Azimuth: 3.1° Slope: 90.0° (482)
Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

	January	February	March	April	May	June	July	August	September	October	November	December		
09:00		08:21	15:42 (4)	07:13	16:58 (2)	06:48	05:27	04:27	04:20	05:09	06:15	07:18	07:27	08:33
15:39		16:40	20 16:02 (4)	17:46	18	17:16 (2)	19:55	21:01	22:02	22:20	21:35	20:17	18:53	15:37
09:00		08:19	15:42 (4)	07:11		16:57 (2)	06:45	05:25	04:25	04:21	05:11	06:17	07:20	08:30
15:40		16:42	20 16:02 (4)	17:48	21	17:18 (2)	19:57	21:03	22:04	22:19	21:33	20:14	18:50	15:36
09:00		08:17	15:42 (4)	07:08		16:57 (2)	06:42	05:23	04:24	04:21	05:13	06:19	07:22	08:36
15:42		16:44	20 16:02 (4)	17:50	20	17:17 (2)	19:59	21:06	22:05	22:19	21:31	20:12	18:48	15:35
08:59		08:15	15:43 (4)	07:05		16:57 (2)	06:39	05:20	04:23	04:22	05:15	06:21	07:25	08:38
15:43		16:47	19 16:02 (4)	17:52	20	17:17 (2)	20:01	21:08	22:07	22:18	21:28	20:09	18:45	15:34
08:59		08:12	15:44 (4)	07:02		16:57 (2)	06:36	05:18	04:22	04:24	05:17	06:23	07:27	08:40
15:45		16:49	18 16:02 (4)	17:55	19	17:16 (2)	20:04	21:10	22:08	22:17	21:26	20:06	18:42	15:33
08:58		08:10	15:45 (4)	07:00		16:58 (2)	06:34	05:30	04:21	04:25	05:19	06:25	07:29	08:41
15:46		16:52	15 16:00 (4)	17:57	17	17:15 (2)	20:06	21:12	22:09	22:16	21:24	20:03	18:39	15:32
08:57		08:08	15:46 (4)	06:57		16:59 (2)	06:31	05:13	04:20	04:26	05:21	06:27	07:31	08:43
15:48		16:54	14 16:00 (4)	17:59	14	17:13 (2)	20:08	21:14	22:11	22:16	21:22	20:01	18:37	15:32
08:56		08:06	15:48 (4)	06:54		17:01 (2)	20:28	05:11	04:19	04:27	05:23	06:29	07:33	08:44
15:49		16:56	9 15:57 (4)	18:02	10	17:11 (2)	20:10	21:16	22:12	22:15	21:19	19:58	18:34	15:31
08:56		08:03	15:50 (4)	06:52		17:02 (2)	20:29	05:09	04:18	04:28	05:26	06:32	07:36	08:46
15:51		16:59		18:04		20:12	21:19	22:13	22:14	21:17	19:55	18:31	20	15:30
08:55		08:01	15:51 (4)	06:49		20:13	21:20	22:14	22:15	21:18	19:56	18:32	20	15:29
15:53		17:01		18:06		20:15	21:21	22:14	22:12	21:14	19:52	18:28	21	15:30
08:54		07:59	15:54 (4)	06:46		20:20	21:26	22:19	22:17	21:20	19:57	18:33	21	15:29
15:55		17:03		18:08		20:17	21:23	22:15	22:11	21:12	19:49	18:26	21	15:30
08:53		07:56	15:56 (4)	06:43		20:18	21:24	22:16	22:12	21:13	19:50	18:27	21	15:31
15:56		17:06		18:11		20:19	21:25	22:16	22:10	21:10	19:47	18:23	20	15:32
08:52		07:54	15:57 (4)	06:41		20:20	21:26	22:17	22:11	21:11	19:48	18:24	20	15:33
15:58		17:08		18:13		20:21	21:27	22:17	22:09	21:07	19:44	18:20	17	15:34
08:51		07:52	15:59 (4)	06:38		20:22	21:28	22:18	22:12	21:08	19:43	18:17	16	15:35
16:00		17:11		18:15		20:23	21:29	22:18	22:07	21:05	19:41	18:		

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Minutes with flicker	Last time (hh:mm) with flicker
			(WTG causing flicker last time)

Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Marstalu iela 6 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (681)
 Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:14 17:46	06:48 19:55	05:28 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
2	09:00 15:41	08:19 16:42	07:11 17:48	06:45 19:57	05:25 21:04	04:25 22:04	04:21 22:20	05:11 21:33	06:17 20:15	07:21 18:51	07:30 16:30	08:35 15:36
3	09:00 15:42	08:17 16:45	07:08 17:50	06:42 19:59	05:23 21:06	04:24 22:06	04:21 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:37 15:35
4	08:59 15:43	08:15 16:47	07:05 17:53	06:39 20:02	05:20 21:08	04:23 22:07	04:22 22:18	05:15 21:29	06:21 20:09	07:25 18:45	07:35 16:25	08:38 15:34
5	08:59 15:45	08:13 16:49	07:03 17:55	06:37 20:04	05:18 21:10	04:22 22:09	04:24 22:18	05:17 21:27	06:23 20:06	07:27 18:42	07:37 16:23	08:40 15:33
6	08:58 15:46	08:10 16:52	07:00 17:57	06:34 20:06	05:16 21:12	04:21 22:10	04:25 22:17	05:19 21:24	06:25 20:04	07:29 18:39	07:39 16:20	08:42 15:32
7	08:58 15:48	08:08 16:54	06:57 18:00	06:31 20:08	05:13 21:15	04:20 22:11	04:26 22:16	05:21 21:22	06:28 20:01	07:31 18:37	07:41 16:18	08:43 15:32
8	08:57 15:49	08:06 16:56	06:55 18:02	06:28 20:11	05:11 21:17	04:19 22:12	04:27 22:15	05:24 21:20	06:30 19:58	07:34 18:34	07:44 16:16	08:45 15:31
9	08:56 15:51	08:04 16:59	06:52 18:04	06:25 20:13	05:09 21:19	04:18 22:13	04:28 22:14	05:26 21:17	06:32 19:55	07:36 18:31	07:46 16:14	08:46 15:31
10	08:55 15:53	08:01 17:01	06:49 18:06	06:23 20:15	05:06 21:21	04:18 22:14	04:30 22:13	05:28 21:15	06:34 19:52	07:38 18:29	07:48 16:12	08:48 15:30
11	08:54 15:55	07:59 17:04	06:46 18:09	06:20 20:17	05:04 21:23	04:17 22:15	04:31 22:12	05:30 21:12	06:36 19:50	07:40 18:26	07:51 16:10	08:49 15:30
12	08:53 15:57	07:57 17:06	06:44 18:11	06:17 20:19	05:02 21:25	04:17 22:16	04:33 22:10	05:32 21:10	06:38 19:47	07:42 18:23	07:53 16:08	08:50 15:29
13	08:52 15:58	07:54 17:08	06:41 18:13	06:15 20:22	05:00 21:27	04:16 22:17	04:34 22:09	05:34 21:07	06:40 19:44	07:45 18:20	07:55 16:06	08:51 15:29
14	08:51 16:00	07:52 17:11	06:38 18:15	06:12 20:24	04:58 21:30	04:16 22:18	04:36 22:08	05:36 21:05	06:42 19:41	07:47 18:18	07:57 16:04	08:53 15:29
15	08:50 16:02	07:49 17:13	06:35 18:18	06:09 20:26	04:56 21:32	04:15 22:19	04:37 22:06	05:38 21:02	06:44 19:38	07:49 18:15	08:00 16:02	08:54 15:29
16	08:48 16:04	07:47 17:15	06:32 18:20	06:06 20:28	04:54 21:34	04:15 22:19	04:39 22:05	05:41 21:00	06:47 19:36	07:51 18:12	08:02 16:00	08:55 15:29
17	08:47 16:06	07:45 17:18	06:30 18:22	06:04 20:30	04:52 21:36	04:15 22:20	04:40 22:04	05:43 20:57	06:49 19:33	07:53 18:10	08:04 15:58	08:56 15:29
18	08:46 16:08	07:42 17:20	06:27 18:24	06:01 20:33	04:50 21:38	04:15 22:20	04:42 22:02	05:45 20:55	06:51 19:30	07:56 18:07	08:06 15:56	08:57 15:29
19	08:44 16:11	07:40 17:22	06:24 18:26	05:58 20:35	04:48 21:40	04:15 22:21	04:44 22:00	05:47 20:52	06:53 19:27	07:58 18:04	08:09 15:54	08:57 15:29
20	08:43 16:13	07:37 17:25	06:21 18:29	05:56 20:37	04:46 21:42	04:15 22:21	04:46 21:59	05:49 20:50	06:55 19:24	08:00 18:02	08:11 15:53	08:58 15:29
21	08:41 16:15	07:34 17:27	06:18 18:31	05:53 20:39	04:44 21:44	04:15 22:22	04:47 21:57	05:51 20:47	06:57 19:21	08:02 17:59	08:13 15:51	08:59 15:30
22	08:40 16:17	07:32 17:30	06:16 18:33	05:50 20:42	04:42 21:46	04:15 22:22	04:49 21:55	05:53 20:44	06:59 19:19	08:05 17:57	08:15 15:49	08:59 15:30
23	08:38 16:19	07:29 17:32	06:13 18:35	05:48 20:44	04:40 21:47	04:15 22:22	04:51 21:53	05:56 20:42	07:01 19:16	08:07 17:54	08:17 15:48	09:00 15:31
24	08:36 16:21	07:27 17:34	06:10 18:37	05:45 20:46	04:39 21:49	04:15 22:22	04:53 21:52	05:58 20:39	07:03 19:13	08:09 17:52	08:19 15:46	09:00 15:31
25	08:35 16:24	07:24 17:37	06:07 18:40	05:43 20:48	04:37 21:51	04:16 22:22	04:55 21:50	06:00 20:36	07:06 19:10	07:12 16:49	08:21 15:45	09:00 15:32
26	08:33 16:26	07:21 17:39	06:04 18:42	05:40 20:50	04:35 21:53	04:16 22:22	04:57 21:48	06:02 20:34	07:08 19:07	07:14 16:46	08:23 15:43	09:01 15:33
27	08:31 16:28	07:19 17:41	06:02 18:44	05:38 20:53	04:34 21:55	04:17 22:22	04:59 21:46	06:04 20:31	07:10 19:05	07:16 16:44	08:25 15:42	09:01 15:34
28	08:29 16:30	07:16 17:43	05:59 18:46	05:35 20:55	04:32 21:56	04:17 22:21	05:01 21:44	06:06 20:28	07:12 19:02	07:18 16:42	08:27 15:41	09:01 15:35
29	08:27 16:33		05:56 19:48	05:33 20:57	04:31 21:58	04:18 22:21	05:03 21:42	06:08 20:26	07:14 18:59	07:21 16:39	08:29 15:39	09:01 15:35
30	08:25 16:35		05:53 19:51	05:30 20:59	04:29 22:00	04:19 22:21	05:05 21:40	06:11 20:23	07:16 18:56	07:23 16:37	08:31 15:38	09:01 15:37
31	08:23 16:37		05:50 19:53		04:28 22:01		05:07 21:38	06:13 20:20		07:25 16:34		09:01 15:38
Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Naglinas - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (594)
 Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:00 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:27 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:27 16:32	08:33 15:37
2	09:00 15:40	08:19 16:42	07:11 17:48	06:45 19:57	05:25 21:04	04:25 22:04	04:20 22:20	05:11 21:33	06:17 20:15	07:20 18:50	07:30 16:29	08:35 15:36
3	09:00 15:42	08:17 16:44	07:08 17:50	06:42 19:59	05:23 21:06	04:24 22:06	04:21 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:37 15:35
4	08:59 15:43	08:15 16:47	07:05 17:53	06:39 20:02	05:20 21:08	04:23 22:07	04:22 22:18	05:15 21:29	06:21 20:09	07:25 18:45	07:34 16:25	08:38 15:34
5	08:59 15:45	08:13 16:49	07:03 17:55	06:36 20:04	05:18 21:10	04:22 22:08	04:23 22:17	05:17 21:26	06:23 20:06	07:27 18:42	07:37 16:23	08:40 15:33
6	08:58 15:46	08:10 16:52	07:00 17:57	06:34 20:06	05:15 21:12	04:21 22:10	04:25 22:17	05:19 21:24	06:25 20:03	07:29 18:39	07:39 16:20	08:42 15:32
7	08:57 15:48	08:08 16:54	06:57 17:59	06:31 20:08	05:13 21:14	04:20 22:11	04:26 22:16	05:21 21:22	06:27 20:01	07:31 18:37	07:41 16:18	08:43 15:32
8	08:57 15:49	08:06 16:56	06:54 18:02	06:28 20:10	05:11 21:17	04:19 22:12	04:27 22:15	05:23 21:19	06:30 19:58	07:33 18:34	07:44 16:16	08:45 15:31
9	08:56 15:51	08:04 16:59	06:52 18:04	06:25 20:13	05:09 21:19	04:18 22:13	04:28 22:14	05:26 21:17	06:32 19:55	07:36 18:31	07:46 16:14	08:46 15:30
10	08:55 15:53	08:01 17:01	06:49 18:06	06:23 20:15	05:06 21:21	04:18 22:14	04:30 22:13	05:28 21:15	06:34 19:52	07:38 18:28	07:48 16:12	08:47 15:30
11	08:54 15:55	07:59 17:03	06:46 18:08	06:20 20:17	05:04 21:23	04:17 22:15	04:31 22:12	05:30 21:12	06:36 19:49	07:40 18:26	07:51 16:09	08:49 15:30
12	08:53 15:56	07:57 17:06	06:43 18:11	06:17 20:19	05:02 21:25	04:16 22:16	04:33 22:10	05:32 21:10	06:38 19:47	07:42 18:23	07:53 16:07	08:50 15:29
13	08:52 15:58	07:54 17:08	06:41 18:13	06:14 20:21	05:00 21:27	04:16 22:17	04:34 22:09	05:34 21:07	06:40 19:44	07:44 18:20	07:55 16:05	08:51 15:29
14	08:51 16:00	07:52 17:11	06:38 18:15	06:12 20:24	04:58 21:29	04:16 22:18	04:36 22:08	05:36 21:05	06:42 19:41	07:47 18:18	07:57 16:03	08:52 15:29
15	08:50 16:02	07:49 17:13	06:35 18:17	06:09 20:26	04:56 21:31	04:15 22:19	04:37 22:06	05:38 21:02	06:44 19:38	07:49 18:15	08:00 16:02	08:54 15:29
16	08:48 16:04	07:47 17:15	06:32 18:20	06:06 20:28	04:53 21:33	04:15 22:19	04:39 22:05	05:40 21:00	06:46 19:35	07:51 18:12	08:02 16:00	08:55 15:29
17	08:47 16:06	07:44 17:18	06:30 18:22	06:04 20:30	04:51 21:36	04:15 22:20	04:40 22:03	05:43 20:57	06:49 19:33	07:53 18:10	08:04 15:58	08:55 15:29
18	08:46 16:08	07:42 17:20	06:27 18:24	06:01 20:33	04:49 21:38	04:15 22:20	04:42 22:02	05:45 20:55	06:51 19:30	07:56 18:07	08:06 15:56	08:56 15:29
19	08:44 16:10	07:39 17:22	06:24 18:26	05:58 20:35	04:48 21:40	04:14 22:21	04:44 22:00	05:47 20:52	06:53 19:27	07:58 18:04	08:08 15:54	08:57 15:29
20	08:43 16:13	07:37 17:25	06:21 18:29	05:56 20:37	04:46 21:42	04:15 22:21	04:46 21:59	05:49 20:49	06:55 19:24	08:00 18:02	08:11 15:52	08:58 15:29
21	08:41 16:15	07:34 17:27	06:18 18:31	05:53 20:39	04:44 21:43	04:15 22:21	04:47 21:57	05:51 20:47	06:57 19:21	08:02 17:59	08:13 15:51	08:59 15:30
22	08:39 16:17	07:32 17:29	06:16 18:33	05:50 20:41	04:42 21:45	04:15 22:22	04:49 21:55	05:53 20:44	06:59 19:18	08:05 17:57	08:15 15:49	08:59 15:30
23	08:38 16:19	07:29 17:32	06:13 18:35	05:48 20:44	04:40 21:47	04:15 22:22	04:51 21:53	05:55 20:42	07:01 19:16	08:07 17:54	08:17 15:48	09:00 15:31
24	08:36 16:21	07:27 17:34	06:10 18:37	05:45 20:46	04:38 21:49	04:15 22:22	04:53 21:51	05:58 20:39	07:03 19:13	08:09 17:51	08:19 15:46	09:00 15:31
25	08:34 16:24	07:24 17:36	06:07 18:40	05:43 20:48	04:37 21:51	04:16 22:22	04:55 21:50	06:00 20:36	07:05 19:10	07:11 16:49	08:21 15:45	09:00 15:32
26	08:33 16:26	07:21 17:39	06:04 18:42	05:40 20:50	04:35 21:53	04:16 22:22	04:57 21:48	06:02 20:34	07:08 19:07	07:14 16:46	08:23 15:43	09:01 15:33
27	08:31 16:28	07:19 17:41	06:02 18:44	05:37 20:52	04:34 21:54	04:17 22:22	04:59 21:46	06:04 20:31	07:10 19:04	07:16 16:44	08:25 15:42	09:01 15:34
28	08:29 16:30	07:16 17:43	05:59 18:46	05:35 20:55	04:32 21:56	04:17 22:21	05:01 21:44	06:06 20:28	07:12 19:02	07:18 16:41	08:27 15:41	09:01 15:34
29	08:27 16:33		06:56 19:48	05:32 20:57	04:31 21:58	04:18 22:21	05:03 21:42	06:08 20:25	07:14 18:59	07:21 16:39	08:29 15:39	09:01 15:35
30	08:25 16:35		06:53 19:51	05:30 20:59	04:29 22:00	04:19 22:21	05:05 21:40	06:10 20:23	07:16 18:56	07:23 16:37	08:31 15:38	09:01 15:36
31	08:23 16:37		06:50 19:53		04:28 22:01		05:07 21:37	06:13 20:20		07:25 16:34		09:01 15:38
Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Last time (hh:mm) with flicker	(WTG causing flicker last time)

Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Niedras - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (461)
Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:00	08:21	15:59 (4)	07:13								
15:39	16:40	4	16:03 (4)	17:46								
2	09:00	08:19	15:59 (4)	07:11								
15:40	16:42	7	16:06 (4)	17:48								
3	09:00	08:17	15:58 (4)	07:08								
15:42	16:44	10	16:08 (4)	17:50								
4	08:59	08:15	15:58 (4)	07:05								
15:43	16:47	13	16:11 (4)	17:52								
5	08:59	08:12	15:58 (4)	07:02								
15:45	16:49	16	16:14 (4)	17:55								
6	08:58	08:10	15:57 (4)	07:00								
15:46	16:52	19	16:16 (4)	17:57								
7	08:57	08:08	15:58 (4)	06:57								
15:48	16:54	20	16:18 (4)	17:59								
8	08:56	08:06	15:57 (4)	06:54								
15:49	16:56	20	16:17 (4)	18:02								
9	08:56	08:03	15:58 (4)	06:52								
15:51	16:59	19	16:17 (4)	18:04								
10	08:55	08:01	15:59 (4)	06:49								
15:53	17:01	17	16:16 (4)	18:06								
11	08:54	07:59	16:00 (4)	06:46								
15:55	17:03	16	16:16 (4)	18:08								
12	08:53	07:56	16:01 (4)	06:43								
15:56	17:06	13	16:14 (4)	18:11								
13	08:52	07:54	16:03 (4)	06:41								
15:58	17:08	10	16:13 (4)	18:13								
14	08:51	07:52		06:38								
16:00	17:11		18:15									
15	08:49	07:49		06:35								
16:02	17:13		18:17									
16	08:48	07:47		06:32								
16:04	17:15		18:20									
17	08:47	07:44		06:29								
16:06	17:18		18:22									
18	08:45	07:42		06:27								
16:08	17:20		18:24									
19	08:44	07:39		06:24								
16:10	17:22		18:26									
20	08:42	07:37		06:21								
16:13	17:25		18:28									
21	08:41	07:34		06:18								
16:15	17:27		18:31									
22	08:39	07:32		06:15								
16:17	17:29		18:33									
23	08:38	07:29		06:13								
16:19	17:32		18:35									
24	08:36	07:26		06:10								
16:21	17:34		18:37									
25	08:34	07:24		06:07								
16:24	17:36		18:39									
26	08:32	07:21		06:04								
16:26	17:39		18:42									
27	08:31	07:19		06:01								
16:28	17:41		18:44									
28	08:29	07:16		05:59								
16:30	17:43		18:46									
29	08:27		06:56									
16:33			19:48									
30	08:25		06:53									
16:35			19:50									
31	08:23		06:50									
16:37			19:53									
Potential sun hours	227	262	365		429	515	539	538	474	386	321	241
Total, worst case											212	148
Sun reduction		0.19		0.40							0.28	0.08
Oper. time red.		1.00		1.00							1.00	1.00
Wind dir. red.		1.00		1.00							1.00	1.00
Total reduction		0.19		0.40							0.28	0.08
Total, real		36		66							60	12

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Last time (hh:mm) with flicker	(WTG causing flicker last time)

Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa
Assumptions for shadow calculations

Shadow receptor: Noras - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (502)
Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January		February		March		April	May	June
1	09:00	14:31 (4)	08:21	15:39 (14)	07:13		06:48	05:27	04:27
	15:39	22	14:53 (4)	16:40	17:46		19:55	21:01	22:02
2	09:00	14:31 (4)	08:19	15:41 (14)	07:11		06:45	05:25	04:25
	15:41	23	14:54 (4)	16:42	17:48		19:57	21:03	22:04
3	09:00	14:32 (4)	08:17	15:42 (14)	07:08		06:42	05:23	04:24
	15:42	23	14:55 (4)	16:44	17:50		19:59	21:06	22:05
4	08:59	14:32 (4)	08:15	15:43 (14)	07:05		06:39	05:20	04:23
	15:43	23	14:57 (4)	16:47	17:53		20:01	21:08	22:07
5	08:59	14:32 (4)	08:12	15:46 (14)	07:03		06:36	05:18	04:22
	15:45	24	14:56 (4)	16:49	17:55		20:04	21:10	22:08
6	08:58	14:32 (4)	08:10	15:52 (14)	07:00		06:34	05:15	04:21
	15:46	24	14:56 (4)	16:52	17:57		20:06	21:12	22:09
7	08:57	14:32 (4)	08:08		06:57		06:31	05:13	04:20
	15:48	25	14:57 (4)	16:54	17:59		20:08	21:14	22:11
8	08:57	14:33 (4)	08:06		06:54		06:28	05:11	04:19
	15:49	24	14:57 (4)	16:56	18:02		20:10	21:16	22:12
9	08:56	14:33 (4)	08:03		06:52		06:25	05:09	04:19
	15:51	25	14:58 (4)	16:59	18:04		20:13	21:19	22:13
10	08:55	14:34 (4)	08:01	16:20 (2)	06:49		06:23	05:06	04:18
	15:53	25	14:59 (4)	17:01	16:27 (2)		20:15	21:21	22:14
11	08:54	14:34 (4)	07:59	16:19 (2)	06:46		06:20	05:04	04:17
	15:55	24	14:58 (4)	17:03	16:30 (2)		20:17	21:23	22:15
12	08:53	14:34 (4)	07:56	16:17 (2)	06:43		06:17	05:02	04:17
	15:57	25	14:59 (4)	17:06	16:32 (2)		20:19	21:25	22:16
13	08:52	14:34 (4)	07:54	16:16 (2)	06:41		06:14	05:00	04:16
	15:58	25	14:59 (4)	17:08	16:35 (2)		20:21	21:27	22:17
14	08:51	14:35 (4)	07:52	16:15 (2)	06:38		06:12	04:58	04:16
	16:00	25	15:00 (4)	17:11	16:38 (2)		20:24	21:29	22:18
15	08:49	14:35 (4)	07:49	16:14 (2)	06:35		06:09	04:56	04:15
	16:02	24	14:59 (4)	17:13	16:40 (2)		20:26	21:31	22:18
16	08:48	14:37 (4)	07:47	16:14 (2)	06:32		06:06	04:54	04:15
	16:04	23	15:00 (4)	17:15	16:41 (2)		20:28	21:33	22:19
17	08:47	14:37 (4)	07:44	16:13 (2)	06:29		06:04	04:51	04:15
	16:06	23	15:00 (4)	17:18	16:41 (2)		20:30	21:35	22:20
18	08:45	14:38 (4)	07:42	16:13 (2)	06:27	17:53 (1)	06:01	04:50	04:15
	16:08	22	15:00 (4)	17:20	16:48 (3)	17:55 (1)	20:32	21:37	22:20
19	08:44	14:38 (4)	07:39	16:13 (2)	06:24	17:51 (1)	05:58	04:48	04:15
	16:10	21	14:59 (4)	17:22	16:51 (3)	17:57 (1)	20:35	21:39	22:21
20	08:42	14:40 (4)	07:37	16:12 (2)	06:21	17:50 (1)	05:56	04:46	04:15
	16:13	20	15:00 (4)	17:25	16:53 (3)	17:59 (1)	20:37	21:41	22:21
21	08:41	14:41 (4)	07:34	16:12 (2)	06:18	17:50 (1)	05:53	04:44	04:15
	16:15	18	14:59 (4)	17:27	16:55 (3)	18:01 (1)	20:39	21:43	22:21
22	08:39	14:42 (4)	07:32	16:13 (2)	06:16	17:49 (1)	05:50	04:42	04:15
	16:17	16	14:58 (4)	17:29	16:58 (3)	18:03 (1)	20:41	21:45	22:21
23	08:38	14:44 (4)	07:29	16:13 (2)	06:13	17:50 (1)	05:48	04:40	04:15
	16:19	14	15:40 (14)	17:32	17:00 (3)	18:06 (1)	20:43	21:47	22:22
24	08:36	14:46 (4)	07:26	16:14 (2)	06:10	17:51 (1)	05:45	04:39	04:15
	16:21	14	15:42 (14)	17:34	16:59 (3)	18:05 (1)	20:46	21:49	22:22
25	08:34	15:38 (14)	07:24	16:15 (2)	06:07	17:52 (1)	05:43	04:37	04:16
	16:24	7	15:45 (14)	17:36	16:58 (3)	18:03 (1)	20:48	21:51	22:22
26	08:32	15:38 (14)	07:21	16:16 (2)	06:04	17:54 (1)	05:40	04:35	04:16
	16:26	10	15:48 (14)	17:39	16:56 (3)	18:00 (1)	20:50	21:53	22:21
27	08:31	15:37 (14)	07:19	16:18 (2)	06:02		05:37	04:34	04:17
	16:28	13	15:50 (14)	17:41	16:53 (3)		20:52	21:54	22:21
28	08:29	15:38 (14)	07:16	16:20 (2)	05:59		05:35	04:32	04:17
	16:30	14	15:52 (14)	17:43	16:31 (2)		20:55	21:56	22:21
29	08:27	15:38 (14)			06:56		05:32	04:31	04:18
	16:33	17	15:55 (14)		19:48		20:57	21:58	22:21
30	08:25	15:39 (14)			06:53		05:30	04:29	04:19
	16:35	18	15:57 (14)		19:50		20:59	21:59	22:20
31	08:23	15:39 (14)			06:50			04:28	
	16:37	18	15:57 (14)		19:53			22:01	
Potential sun hours	227		262		365		429	515	539
Total, worst case	629		599		89				
Sun reduction	0.11		0.19		0.40				
Oper. time red.	1.00		1.00		1.00				
Wind dir. red.	1.00		1.00		1.00				
Total reduction	0.11		0.19		0.40				
Total, real	69		116		36				

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Noras - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (502)
Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	July	August	September	October	November	December
1	04:20	05:09	06:15	07:18	07:27	15:51 (2)
	22:20	21:35	20:17	18:53	16:32	15:56 (2)
2	04:21	05:11	06:17	07:20	07:30	15:37
	22:19	21:33	20:14	18:50	16:29	15:36
3	04:21	05:13	06:19	07:23	07:32	15:36
	22:19	21:31	20:12	18:48	16:27	15:35
4	04:22	05:15	06:21	07:25	07:34	15:38
	22:18	21:28	20:09	18:45	16:25	15:34
5	04:24	05:17	06:23	07:27	07:37	15:40
	22:17	21:26	20:06	18:42	16:23	15:33
6	04:25	05:19	06:25	07:29	07:39	15:16 (14)
	22:16	21:24	20:03	18:39	16:20	15:22 (14)
7	04:26	05:21	06:27	07:31	07:41	15:14 (14)
	22:16	21:22	20:01	18:37	16:18	15:25 (14)
8	04:27	05:23	06:29	07:33	07:43	15:12 (14)
	22:15	21:19	19:58	18:34	16:16	15:26 (14)
9	04:28	05:26	06:32	07:36	07:46	15:11 (14)
	22:14	21:17	19:55	18:31	16:14	15:27 (14)
10	04:30	05:28	06:34	07:38	07:48	15:10 (14)
	22:12	21:14	19:52	18:28	16:12	15:27 (14)
11	04:31	05:30	06:36	07:40	07:50	15:10 (14)
	22:11	21:12	19:49	18:26	16:10	15:28 (14)
12	04:33	05:32	06:38	07:42	07:53	15:09 (14)
	22:10	21:10	19:47	18:23	16:07	15:28 (14)
13	04:34	05:34	06:40	07:44	16:57 (2)	15:10 (14)
	22:09	21:07	19:44	18:20	17:02 (2)	15:27 (14)
14	04:36	05:36	06:42	07:47	16:52 (2)	15:10 (14)
	22:08	21:05	19:41	18:18	17:06 (2)	15:25 (14)
15	04:37	05:38	06:44	07:49	16:50 (2)	15:10 (14)
	22:06	21:02	19:38	18:15	17:27 (3)	15:22 (14)
16	04:39	05:40	06:46	07:51	16:48 (2)	15:11 (14)
	22:05	21:00	19:35	18:12	17:29 (3)	15:21 (14)
17	04:40	05:43	06:48	18:43 (1)	07:53	16:46 (2)
	22:03	20:57	19:33	18:10	17:30 (3)	15:58
18	04:42	05:45	06:51	18:40 (1)	07:55	16:46 (2)
	22:02	20:55	19:30	18:50 (1)	18:07	17:31 (3)
19	04:44	05:47	06:53	18:38 (1)	07:58	16:44 (2)
	22:00	20:52	19:27	18:51 (1)	18:04	17:31 (3)
20	04:46	05:49	06:55	18:36 (1)	08:00	16:43 (2)
	21:58	20:49	19:24	18:52 (1)	18:02	17:28 (3)
21	04:47	05:51	06:57	18:35 (1)	08:02	16:43 (2)
	21:57	20:47	19:21	18:50 (1)	17:59	17:26 (3)
22	04:49	05:53	06:59	18:35 (1)	08:04	16:43 (2)
	21:55	20:44	19:18	18:48 (1)	17:57	17:22 (3)
23	04:51	05:55	07:01	18:35 (1)	08:07	16:43 (2)
	21:53	20:41	19:16	18:45 (1)	17:54	17:20 (3)
24	04:53	05:58	07:03	18:35 (1)	08:09	16:43 (2)
	21:51	20:39	19:13	18:42 (1)	17:51	17:17 (3)
25	04:55	06:00	07:05	18:35 (1)	07:11	15:43 (2)
	21:49	20:36	19:10	18:39 (1)	16:49	16:11 (2)
26	04:57	06:02	07:08		07:14	15:43 (2)
	21:47	20:33	19:07		16:46	16:10 (2)
27	04:59	06:04	07:10		07:16	15:44 (2)
	21:45	20:31	19:04		16:44	16:10 (2)
28	05:01	06:06	07:12		07:18	15:44 (2)
	21:43	20:28	19:02		16:41	16:06 (2)
29	05:03	06:08	07:14		07:20	15:46 (2)
	21:41	20:25	18:59		16:39	16:04 (2)
30	05:05	06:10	07:16		07:23	15:47 (2)
	21:39	20:23	18:56		16:37	16:01 (2)
31	05:07	06:13			07:25	15:49 (2)
	21:37	20:20			16:34	15:59 (2)
Potential sun hours	538	474	386	321	241	207
Total, worst case			92	536	436	617
Sun reduction			0.46	0.28	0.08	0.06
Oper. time red.			1.00	1.00	1.00	1.00
Wind dir. red.			1.00	1.00	1.00	1.00
Total reduction			0.46	0.28	0.08	0.06
Total, real			43	152	34	38

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Ozolkalni - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (799)
 Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January			February			March			April	May	June
1	09:01		09:46 (7)	08:21		08:54 (6)	07:14		07:41 (5)	06:48	05:28	04:27
	15:40	20	10:06 (7)	16:40	15	09:09 (6)	17:46	8	08:04 (9)	19:55	21:01	22:03
2	09:00		09:47 (7)	08:19		08:51 (6)	07:11		07:38 (5)	06:45	05:25	04:26
	15:41	20	10:07 (7)	16:42	19	09:10 (6)	17:48	7	07:45 (5)	19:57	21:04	22:04
3	09:00		09:47 (7)	08:17		08:49 (8)	07:08		07:35 (5)	06:42	05:23	04:25
	15:42	20	10:07 (7)	16:45	22	09:11 (6)	17:51	11	07:46 (5)	20:00	21:06	22:06
4	08:59		09:47 (7)	08:15		08:48 (8)	07:06		07:33 (5)	06:40	05:21	04:23
	15:44	20	10:07 (7)	16:47	23	09:11 (6)	17:53	14	07:47 (5)	20:02	21:08	22:07
5	08:59		09:48 (7)	08:13		08:48 (8)	07:03		07:30 (5)	06:37	05:18	04:22
	15:45	20	10:08 (7)	16:49	23	09:11 (6)	17:55	17	07:47 (5)	20:04	21:10	22:09
6	08:58		09:49 (7)	08:11		08:49 (6)	07:00		07:27 (5)	06:34	05:16	04:21
	15:47	20	10:09 (7)	16:52	23	09:12 (6)	17:57	20	07:47 (5)	20:06	21:12	22:10
7	08:58		09:49 (7)	08:08		08:49 (6)	06:57		07:26 (5)	06:31	05:13	04:20
	15:48	19	10:08 (7)	16:54	23	09:12 (6)	18:00	21	07:47 (5)	20:08	21:15	22:11
8	08:57		09:49 (7)	08:06		08:50 (6)	06:55		07:26 (5)	06:28	05:11	04:20
	15:50	20	10:09 (7)	16:57	22	09:12 (6)	18:02	20	07:46 (5)	20:11	21:17	22:12
9	08:56		09:50 (7)	08:04		08:50 (6)	06:52		07:27 (5)	06:26	05:09	04:19
	15:51	19	10:09 (7)	16:59	21	09:11 (6)	18:04	19	07:46 (5)	20:13	21:19	22:13
10	08:55		09:51 (7)	08:01		08:51 (6)	06:49		07:27 (5)	06:23	05:07	04:18
	15:53	19	10:10 (7)	17:01	20	09:11 (6)	18:06	18	07:45 (5)	20:15	21:21	22:14
11	08:54		09:52 (7)	07:59		08:51 (6)	06:46		07:28 (5)	06:20	05:04	04:17
	15:55	18	10:10 (7)	17:04	19	09:10 (6)	18:09	15	07:43 (5)	20:17	21:23	22:15
12	08:53		09:52 (7)	07:57		08:53 (6)	06:44		07:29 (5)	06:17	05:02	04:17
	15:57	18	10:10 (7)	17:06	17	09:10 (6)	18:11	12	07:41 (5)	20:19	21:25	22:16
13	08:52		09:53 (7)	07:54		08:54 (6)	06:41		07:07 (1)	06:15	05:00	04:16
	15:59	17	10:10 (7)	17:09	14	09:08 (6)	18:13	5	07:37 (5)	20:22	21:27	22:17
14	08:51		09:53 (7)	07:52		08:55 (6)	06:38		07:04 (1)	06:12	04:58	04:16
	16:01	16	10:09 (7)	17:11	10	09:05 (6)	18:15	5	07:09 (1)	20:24	21:30	22:18
15	08:50		09:55 (7)	07:50			06:35		07:02 (1)	06:09	04:56	04:16
	16:03	15	10:10 (7)	17:13			18:18	8	07:10 (1)	20:26	21:32	22:19
16	08:48		09:56 (7)	07:47			06:33		06:59 (1)	06:07	04:54	04:15
	16:05	13	10:09 (7)	17:16			18:20	11	07:10 (1)	20:28	21:34	22:19
17	08:47		09:57 (7)	07:45			06:30		06:56 (1)	06:04	04:52	04:15
	16:07	11	10:08 (7)	17:18			18:22	13	07:09 (1)	20:31	21:36	22:20
18	08:46		09:59 (7)	07:42			06:27		06:53 (1)	06:01	04:50	04:15
	16:09	8	10:07 (7)	17:20			18:24	15	07:08 (1)	20:33	21:38	22:20
19	08:44			07:40			06:24		06:54 (1)	05:59	04:48	04:15
	16:11			17:23			18:27	13	07:07 (1)	20:35	21:40	22:21
20	08:43			07:37		08:05 (9)	06:21		06:55 (1)	05:56	04:46	04:15
	16:13			17:25	4	08:09 (9)	18:29	10	07:05 (1)	20:37	21:42	22:21
21	08:41			07:35		08:03 (9)	06:19		06:58 (1)	05:53	04:44	04:15
	16:15			17:27	7	08:10 (9)	18:31	4	07:02 (1)	20:39	21:44	22:22
22	08:40			07:32		08:00 (9)	06:16			05:51	04:42	04:15
	16:17			17:30	10	08:10 (9)	18:33			20:42	21:46	22:22
23	08:38			07:29		07:57 (9)	06:13			05:48	04:41	04:15
	16:19			17:32	13	08:10 (9)	18:35			20:44	21:47	22:22
24	08:36			07:27		07:55 (9)	06:10			05:45	04:39	04:16
	16:22			17:34	16	08:11 (9)	18:38			20:46	21:49	22:22
25	08:35			07:24		07:53 (9)	06:07			05:43	04:37	04:16
	16:24			17:37	17	08:10 (9)	18:40			20:48	21:51	22:22
26	08:33			07:22		07:54 (9)	06:05			05:40	04:36	04:17
	16:26			17:39	15	08:09 (9)	18:42			20:50	21:53	22:22
27	08:31			07:19		07:54 (9)	06:02			05:38	04:34	04:17
	16:28			17:41	14	08:08 (9)	18:44			20:53	21:55	22:22
28	08:29			07:16		07:56 (9)	05:59			05:35	04:32	04:18
	16:31			17:44	11	08:07 (9)	18:46			20:55	21:56	22:21
29	08:27		09:00 (6)				06:56			05:33	04:31	04:18
	16:33	4	09:04 (6)				19:49			20:57	21:58	22:21
30	08:25		08:58 (6)				06:53			05:30	04:30	04:19
	16:35	8	09:06 (6)				19:51			20:59	22:00	22:21
31	08:23		08:56 (6)				06:51				04:28	
	16:38	12	09:08 (6)				19:53				22:01	
Potential sun hours	227			262			365		429	515	539	
Total, worst case		337			378		266					
Sun reduction		0.11			0.19		0.40					
Oper. time red.		1.00			1.00		1.00					
Wind dir. red.		1.00			1.00		1.00					
Total reduction		0.11			0.19		0.40					
Total, real		37			73		107					

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Ozolkalni - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (799)
Sunshine probability S (Average daily sunshine hours) []

Assumptions for shadow calculations

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
0.80 1.82 4.75 6.09 9.67 10.05 8.16 7.72 5.94 2.93 0.63 0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	July	August	September	October	November	December
1	04:20	05:09	06:15	07:19	08:10 (5)	07:28
	22:20	21:35	20:17	18:54	9	08:19 (5)
2	04:21	05:11	06:17	07:21	08:07 (5)	16:32
	22:20	21:33	20:15	18:51	14	08:21 (5)
3	04:22	05:13	06:19	07:23	08:06 (5)	16:30
	22:19	21:31	20:12	18:48	17	08:23 (5)
4	04:23	05:15	06:21	07:25	08:05 (5)	16:27
	22:18	21:29	20:09	18:45	18	08:23 (5)
5	04:24	05:17	06:23	07:27	08:03 (5)	16:25
	22:18	21:27	20:06	18:42	20	08:23 (5)
6	04:25	05:20	06:26	07:29	08:03 (5)	16:23
	22:17	21:24	20:04	18:40	20	08:23 (5)
7	04:26	05:22	06:28	07:32	08:02 (5)	16:21
	22:16	21:22	20:01	18:37	20	08:22 (5)
8	04:27	05:24	06:30	07:34	08:04 (5)	16:18
	22:15	21:20	19:58	18:34	19	08:23 (5)
9	04:29	05:26	06:32	07:36	08:06 (5)	16:16
	22:14	21:17	19:55	18:31	16	08:22 (5)
10	04:30	05:28	06:34	07:38	08:08 (5)	16:14
	22:13	21:15	19:53	18:29	12	08:20 (5)
11	04:31	05:30	06:36	07:40	08:11 (5)	16:12
	22:12	21:12	19:50	18:26	9	08:20 (5)
12	04:33	05:32	06:38	07:42	08:13 (5)	16:10
	22:10	21:10	19:47	18:23	5	08:18 (5)
13	04:34	05:34	06:40	07:45	08:30 (9)	16:08
	22:09	21:07	19:44	18:21	9	08:39 (9)
14	04:36	05:37	06:42	07:47	08:27 (9)	16:06
	22:08	21:05	19:41	18:18	13	08:40 (9)
15	04:38	05:39	06:45	07:49	08:27 (9)	16:04
	22:06	21:02	19:38	18:15	14	08:41 (9)
16	04:39	05:41	06:47	07:51	08:25 (9)	16:02
	22:05	21:00	19:36	18:13	17	08:42 (9)
17	04:41	05:43	06:49	07:54	08:25 (9)	16:00
	22:04	20:57	19:33	18:10	17	08:42 (9)
18	04:43	05:45	06:51	07:56	08:27 (9)	15:58
	22:02	20:55	19:30	18:07	15	08:42 (9)
19	04:44	05:47	06:53	07:58	08:29 (9)	15:56
	22:00	20:52	19:27	18:05	12	08:41 (9)
20	04:46	05:49	06:55	08:00	08:32 (9)	15:55
	21:59	20:50	19:24	18:02	9	08:41 (9)
21	04:48	05:51	06:57	08:03	08:34 (9)	15:53
	21:57	20:47	19:22	17:59	6	08:40 (9)
22	04:50	05:54	06:59	08:05	08:37 (9)	15:51
	21:55	20:44	19:19	17:57	2	08:39 (9)
23	04:51	05:56	07:01	08:07	08:17	15:50
	21:53	20:42	19:16	9	07:49 (1)	15:48
24	04:53	05:58	07:04	08:09	08:19	15:48
	21:52	20:39	19:13	12	07:50 (1)	15:46
25	04:55	06:00	07:06	08:11	08:21	15:46
	21:50	20:36	19:10	14	07:51 (1)	15:45
26	04:57	06:02	07:08	08:13	08:23	15:45
	21:48	20:34	19:08	14	07:51 (1)	15:44
27	04:59	06:04	07:10	08:15	08:25	15:44
	21:46	20:31	19:05	11	07:50 (1)	15:42
28	05:01	06:06	07:12	08:17	08:27	15:42
	21:44	20:28	19:02	9	07:51 (1)	15:41
29	05:03	06:09	07:14	08:19	08:29	15:41
	21:42	20:26	18:59	6	07:50 (1)	15:40
30	05:05	06:11	07:16	08:21	08:31	15:40
	21:40	20:23	18:56	3	07:49 (1)	15:38
31	05:07	06:13		07:25	08:20 (6)	15:38
	21:38	20:20		16:34	20	08:40 (6)
Potential sun hours	538	474	386	321	241	207
Total, worst case			78	360	334	579
Sun reduction			0.46	0.28	0.08	0.06
Oper. time red.			1.00	1.00	1.00	1.00
Wind dir. red.			1.00	1.00	1.00	1.00
Total reduction			0.46	0.28	0.08	0.06
Total, real			36	102	26	36

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Last time (hh:mm) with flicker	(WTG causing flicker last time)
	Minutes with flicker		

Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa
Assumptions for shadow calculations

Shadow receptor: OŠ i - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (448)
Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January		February		March		April	May	June
1	09:00	14:29 (4)	08:21	15:39 (14)	07:13		06:48	05:27	04:27
	15:39	22	14:51 (4)	16:40	5	15:44 (14)	17:46	19:55	21:01
2	09:00	14:29 (4)	08:19				07:11	06:45	05:25
	15:40	22	14:51 (4)	16:42			17:48	19:57	21:03
3	09:00	14:30 (4)	08:17				07:08	06:42	05:23
	15:42	22	14:52 (4)	16:44			17:50	19:59	21:06
4	08:59	14:30 (4)	08:15	16:06 (2)	07:05		06:39	05:20	04:23
	15:43	22	14:52 (4)	16:47	5	16:11 (2)	17:53	20:01	21:08
5	08:59	14:30 (4)	08:12	16:05 (2)	07:03		06:36	05:18	04:22
	15:45	23	14:53 (4)	16:49	9	16:14 (2)	17:55	20:04	21:10
6	08:58	14:31 (4)	08:10	16:03 (2)	07:00		06:34	05:15	04:21
	15:46	22	14:53 (4)	16:52	13	16:16 (2)	17:57	20:06	21:12
7	08:57	14:31 (4)	08:08	16:03 (2)	06:57		06:31	05:13	04:20
	15:48	22	14:53 (4)	16:54	16	16:19 (2)	17:59	20:08	21:14
8	08:57	14:32 (4)	08:06	16:02 (2)	06:54		06:28	05:11	04:19
	15:49	22	14:54 (4)	16:56	20	16:22 (2)	18:02	20:10	21:16
9	08:56	14:32 (4)	08:03	16:02 (2)	06:52		06:25	05:09	04:18
	15:51	22	14:54 (4)	16:59	23	16:25 (2)	18:04	20:13	21:19
10	08:55	14:33 (4)	08:01	16:01 (2)	06:49		06:23	05:06	04:18
	15:53	22	14:55 (4)	17:01	25	16:26 (2)	18:06	20:15	21:21
11	08:54	14:33 (4)	07:59	16:01 (2)	06:46		06:20	05:04	04:17
	15:55	21	14:54 (4)	17:03	26	16:27 (2)	18:08	20:17	21:23
12	08:53	14:34 (4)	07:56	16:01 (2)	06:43	17:41 (1)	06:17	05:02	04:17
	15:57	21	14:55 (4)	17:06	25	16:26 (2)	18:11	20:19	21:25
13	08:52	14:34 (4)	07:54	16:01 (2)	06:41	17:39 (1)	06:14	05:00	04:16
	15:58	20	14:54 (4)	17:08	27	16:35 (3)	18:13	20:21	21:27
14	08:51	14:36 (4)	07:52	16:01 (2)	06:38	17:38 (1)	06:12	04:58	04:16
	16:00	19	14:55 (4)	17:11	30	16:38 (3)	18:15	20:24	21:29
15	08:49	14:36 (4)	07:49	16:01 (2)	06:35	17:38 (1)	06:09	04:56	04:15
	16:02	18	14:54 (4)	17:13	32	16:40 (3)	18:17	20:26	21:31
16	08:48	14:38 (4)	07:47	16:02 (2)	06:32	17:38 (1)	06:06	04:53	04:15
	16:04	17	14:55 (4)	17:15	34	16:43 (3)	18:20	20:28	21:33
17	08:47	14:39 (4)	07:44	16:03 (2)	06:29	17:39 (1)	06:04	04:51	04:15
	16:06	15	14:54 (4)	17:18	34	16:45 (3)	18:22	20:30	21:35
18	08:45	14:40 (4)	07:42	16:04 (2)	06:27	17:39 (1)	06:01	04:49	04:15
	16:08	13	14:53 (4)	17:20	35	16:48 (3)	18:24	20:32	21:37
19	08:44	14:41 (4)	07:39	16:05 (2)	06:24	17:40 (1)	05:58	04:48	04:15
	16:10	11	14:52 (4)	17:22	32	16:49 (3)	18:26	20:35	21:39
20	08:42	14:45 (4)	07:37	16:07 (2)	06:21	17:44 (1)	05:56	04:46	04:15
	16:13	6	14:51 (4)	17:25	26	16:47 (3)	18:28	20:37	21:41
21	08:41	15:31 (14)	07:34	16:11 (2)	06:18		05:53	04:44	04:15
	16:15	4	15:35 (14)	17:27	14	16:45 (3)	18:31	20:39	21:43
22	08:39	15:31 (14)	07:32	16:39 (3)	06:16		05:50	04:42	04:15
	16:17	6	15:37 (14)	17:29	4	16:43 (3)	18:33	20:41	21:45
23	08:38	15:31 (14)	07:29				06:13	05:48	04:40
	16:19	9	15:40 (14)	17:32			18:35	20:43	21:47
24	08:36	15:32 (14)	07:26				06:10	05:45	04:39
	16:21	10	15:42 (14)	17:34			18:37	20:46	21:49
25	08:34	15:32 (14)	07:24				06:07	05:43	04:37
	16:24	13	15:45 (14)	17:36			18:39	20:48	21:51
26	08:32	15:32 (14)	07:21				06:04	05:40	04:35
	16:26	16	15:48 (14)	17:39			18:42	20:50	21:53
27	08:31	15:32 (14)	07:19				06:02	05:37	04:34
	16:28	17	15:49 (14)	17:41			18:44	20:52	21:54
28	08:29	15:33 (14)	07:16				05:59	05:35	04:32
	16:30	16	15:49 (14)	17:43			18:46	20:55	21:56
29	08:27	15:34 (14)					06:56	05:32	04:31
	16:33	14	15:48 (14)				19:48	20:57	21:58
30	08:25	15:35 (14)					06:53	05:30	04:29
	16:35	13	15:48 (14)				19:50	20:59	21:59
31	08:23	15:37 (14)					06:50		04:28
	16:37	10	15:47 (14)				19:53		22:01
Potential sun hours	227		262		365		429	515	539
Total, worst case	510		435		74				
Sun reduction	0.11		0.19		0.40				
Oper. time red.	1.00		1.00		1.00				
Wind dir. red.	1.00		1.00		1.00				
Total reduction	0.11		0.19		0.40				
Total, real	56		85		30				

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

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Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: OŠ i - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (448)
Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) []

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
0.80 1.82 4.75 6.09 9.67 10.05 8.16 7.72 5.94 2.93 0.63 0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	July	August	September	October	November	December			
1	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	18:19 (1) 18:22 (1)	07:27 15:30 (2)	08:33 14:15 (4)		
2	04:21 22:19	05:11 21:33	06:17 20:14	07:20 18:50		15:31 (2) 15:54 (2)	08:35 15:36	21 22	14:15 (4) 14:37 (4)
3	04:21 22:19	05:13 21:31	06:19 20:12	07:23 18:48		15:31 (2) 15:51 (2)	08:36 15:35	21	14:16 (4) 14:37 (4)
4	04:22 22:18	05:15 21:28	06:21 20:09	07:25 18:45		15:33 (2) 15:49 (2)	08:38 15:34	22	14:16 (4) 14:38 (4)
5	04:24 22:17	05:17 21:26	06:23 20:06	07:27 18:42		15:33 (2) 16:23	08:40 15:33	22	14:16 (4) 14:38 (4)
6	04:25 22:16	05:19 21:24	06:25 20:03	07:29 18:39		15:35 (2) 16:20	08:41 15:32	22	14:17 (4) 14:39 (4)
7	04:26 22:16	05:21 21:22	06:27 20:01	07:31 18:37		15:37 (2) 16:18	08:43 15:32	23	14:17 (4) 14:40 (4)
8	04:27 22:15	05:23 21:19	06:29 19:58	07:33 18:34		15:42 (2) 16:16	15:32 15:31	22	14:40 (4) 14:40 (4)
9	04:28 22:14	05:26 21:17	06:32 19:55	07:36 18:31		16:16 16:14	08:46 15:31	22	14:18 (4) 14:40 (4)
10	04:30 22:12	05:28 21:14	06:34 19:52	07:38 18:28		16:14 16:12	15:31 15:15 (14)	22	14:19 (4) 14:41 (4)
11	04:31 22:11	05:30 21:12	06:36 19:49	07:40 18:26		15:08 (14) 16:10	08:49 15:18 (14)	22	14:19 (4) 14:41 (4)
12	04:33 22:10	05:32 21:10	06:38 19:47	07:42 18:23		15:07 (14) 16:07	08:50 15:20 (14)	22	14:20 (4) 14:42 (4)
13	04:34 22:09	05:34 21:07	06:40 19:44	07:44 18:20		15:06 (14) 16:05	08:51 15:20 (14)	22	14:20 (4) 14:42 (4)
14	04:36 22:08	05:36 21:05	06:42 19:41	07:47 18:18		15:06 (14) 16:03	08:52 15:22 (14)	22	14:20 (4) 14:42 (4)
15	04:37 22:06	05:38 21:02	06:44 19:38	07:49 18:15		15:05 (14) 16:02	08:53 15:22 (14)	20	14:21 (4) 14:41 (4)
16	04:39 22:05	05:40 21:00	06:46 19:35	07:51 18:12		15:05 (14) 16:00	08:54 15:21 (14)	20	14:21 (4) 14:41 (4)
17	04:40 22:03	05:43 20:57	06:48 19:33	07:53 18:10		15:05 (14) 15:58	08:55 15:18 (14)	19	14:22 (4) 14:41 (4)
18	04:42 22:02	05:45 20:55	06:51 19:30	07:55 18:07		15:06 (14) 15:56	08:56 15:16 (14)	19	14:22 (4) 14:41 (4)
19	04:44 22:00	05:47 20:52	06:53 19:27	07:58 18:04		15:05 (14) 15:54	08:57 15:14 (14)	19	14:23 (4) 14:42 (4)
20	04:46 21:58	05:49 20:49	06:55 19:24	08:00 18:02	17:08 (3)	15:06 (14) 15:52	08:58 15:12 (14)	18	14:24 (4) 14:42 (4)
21	04:47 21:57	05:51 20:47	06:57 19:21	08:02 17:59	16:40 (2)	15:06 (14) 15:51	08:58 15:10 (14)	18	14:24 (4) 14:42 (4)
22	04:49 21:55	05:53 20:44	06:59 19:18	08:04 17:56	16:37 (2)	14:21 (4) 15:49	08:59 15:30	18	14:25 (4) 14:43 (4)
23	04:51 21:53	05:55 20:41	07:01 19:16	08:07 17:54	16:35 (2)	14:18 (4) 14:29 (4)	08:59 15:31	18	14:25 (4) 14:43 (4)
24	04:53 21:51	05:58 20:39	07:03 19:13	08:09 17:51	16:33 (2)	14:17 (4) 15:46	09:00 14:30 (4)	18	14:25 (4) 14:43 (4)
25	04:55 21:49	06:00 20:36	07:05 19:10	08:11 18:22 (1)	15:33 (2)	14:17 (4) 15:45	09:00 14:32 (4)	19	14:26 (4) 14:45 (4)
26	04:57 21:47	06:02 20:33	07:08 19:07	08:14 18:21 (1)	15:31 (2)	14:16 (4) 15:43	09:00 15:33	19	14:27 (4) 14:46 (4)
27	04:59 21:45	06:04 20:31	07:10 19:04	08:16 18:33 (1)	15:31 (2)	14:15 (4) 15:42	09:01 15:34	20	14:27 (4) 14:47 (4)
28	05:01 21:43	06:06 20:28	07:12 19:02	08:18 18:19 (1)	15:31 (2)	14:16 (4) 15:41	09:01 14:35 (4)	20	14:28 (4) 14:48 (4)
29	05:03 21:41	06:08 20:25	07:14 18:59	08:20 18:18 (1)	15:31 (2)	14:15 (4) 15:39	09:01 14:35 (4)	21	14:27 (4) 14:48 (4)
30	05:05 21:39	06:10 20:23	07:16 18:56	08:23 18:19 (1)	15:30 (2)	14:15 (4) 15:38	09:01 15:37	22	14:28 (4) 14:50 (4)
31	05:07 21:37	06:13 20:20		08:25 16:34	15:31 (2) 15:56 (2)		09:00 15:38	21	14:29 (4) 14:50 (4)
Potential sun hours	538	474	386	321	241		207		
Total, worst case			73	328	385		636		
Sun reduction			0.46	0.28	0.08		0.06		
Oper. time red.			1.00	1.00	1.00		1.00		
Wind dir. red.			1.00	1.00	1.00		1.00		
Total reduction			0.46	0.28	0.08		0.06		
Total, real			34	93	30		39		

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Last time (hh:mm) with flicker	(WTG causing flicker last time)
	Minutes with flicker		

Project:

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Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Pakalnini - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (472)
Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []
Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
0.80 1.82 4.75 6.09 9.67 10.05 8.16 7.72 5.94 2.93 0.63 0.41

No operational time reduction. It is assumed the WTGs are always running
with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:00 15:39	08:21 16:40	07:13 17:46		06:47 19:55	05:27 21:01	04:27 22:02	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	
2	09:00 15:40	08:19 16:42	07:11 17:48	17:16 (2)	06:45 19:57	05:25 21:03	04:25 22:04	04:21 22:19	05:11 21:33	06:17 20:14	07:20 18:50	6 17:56 (2)
3	08:59 15:42	08:17 16:44	16:06 (4) 17:50	17:14 (2)	06:42 19:59	05:23 21:06	04:24 22:05	04:21 22:19	05:13 21:31	06:19 20:12	07:22 18:48	11 18:04 (2)
4	08:59 15:43	08:15 16:47	16:05 (4) 17:52	17:13 (2)	06:39 20:01	05:20 21:08	04:23 22:07	04:22 22:18	05:15 21:28	06:21 20:09	07:25 18:45	15 18:05 (2)
5	08:59 15:45	08:12 16:49	16:05 (4) 17:55	17:12 (2)	06:36 20:04	05:18 21:10	04:22 22:08	04:24 22:17	05:17 21:26	06:23 20:06	07:27 18:42	18 18:07 (2)
6	08:58 15:46	08:10 16:52	16:04 (4) 17:57	17:12 (2)	06:34 20:06	05:15 21:12	04:21 22:09	04:25 22:16	05:19 21:24	06:25 20:03	07:29 18:39	19 18:07 (2)
7	08:57 15:48	08:08 16:54	16:04 (4) 17:59	17:12 (2)	06:31 20:08	05:13 21:14	04:20 22:11	04:26 22:15	05:21 21:22	06:27 20:01	07:31 18:37	17 18:04 (2)
8	08:56 15:49	08:06 16:56	16:04 (4) 18:02	17:11 (2)	06:28 20:10	05:11 21:16	04:19 22:12	04:27 22:15	05:23 21:19	06:29 20:00	07:33 18:34	14 18:01 (2)
9	08:56 15:51	08:03 16:59	16:04 (4) 18:04	17:11 (2)	06:25 20:12	05:09 21:19	04:18 22:13	04:28 22:14	05:26 21:17	06:32 20:00	07:35 18:31	11 17:59 (2)
10	08:55 15:53	08:01 17:01	16:04 (4) 18:06	17:12 (2)	06:23 20:15	05:06 21:21	04:18 22:14	04:30 22:12	05:28 21:14	06:34 20:00	07:38 18:28	8 17:56 (2)
11	08:54 15:55	07:59 17:03	16:05 (4) 18:08	17:13 (2)	06:20 20:17	05:04 21:23	04:17 22:15	04:31 22:11	05:30 21:12	06:36 20:00	07:40 18:26	4 17:53 (2)
12	08:53 15:56	07:56 17:06	16:05 (4) 18:11	17:15 (2)	06:17 20:19	05:02 21:25	04:17 22:16	04:33 22:10	05:32 21:10	06:38 20:00	07:42 18:23	17:48 (2)
13	08:52 15:58	07:54 17:08	16:07 (4) 18:13		06:14 20:21	05:00 21:27	04:16 22:17	04:34 22:09	05:34 21:07	06:40 20:00	07:44 18:20	17:48 (2)
14	08:51 16:00	07:52 17:11	16:08 (4) 18:15		06:12 20:23	04:58 21:29	04:16 22:18	04:36 22:07	05:36 21:05	06:42 20:00	07:46 18:17	17:48 (2)
15	08:49 16:02	07:49 17:13	16:12 (4) 18:17		06:09 20:26	04:56 21:31	04:15 22:18	04:37 22:06	05:38 21:02	06:44 20:00	07:49 18:15	17:48 (2)
16	08:48 16:04	07:47 17:15	16:15 (4) 18:20		06:06 20:28	04:53 21:33	04:15 22:19	04:39 22:05	05:40 21:00	06:46 20:00	07:51 18:12	17:48 (2)
17	08:47 16:06	07:44 17:18	16:19 (4) 18:22		06:04 20:30	04:51 21:35	04:15 22:20	04:40 22:03	05:43 20:57	06:48 20:00	07:53 18:09	17:48 (2)
18	08:45 16:08	07:42 17:20	16:22 (4) 18:24		06:01 20:32	04:49 21:37	04:15 22:20	04:42 22:02	05:45 20:54	06:51 20:00	07:55 18:07	17:48 (2)
19	08:44 16:10	07:39 17:22	16:25 (4) 18:26		05:58 20:35	04:48 21:39	04:15 22:20	04:44 22:00	05:47 20:52	06:53 20:00	07:58 18:04	17:48 (2)
20	08:42 16:13	07:37 17:25	16:28 (4) 18:28		05:56 20:37	04:46 21:41	04:15 22:21	04:46 22:00	05:49 20:52	06:55 20:00	08:00 18:04	17:48 (2)
21	08:41 16:15	07:34 17:27	16:31 (4) 18:31		05:53 20:39	04:44 21:43	04:15 22:21	04:47 22:00	05:51 20:47	06:57 20:00	08:02 18:00	17:48 (2)
22	08:39 16:17	07:32 17:29	16:34 (4) 18:33		05:50 20:41	04:42 21:45	04:15 22:21	04:49 22:00	05:53 20:44	06:59 20:00	08:04 18:00	17:48 (2)
23	08:38 16:19	07:29 17:32	16:37 (4) 18:35		05:48 20:43	04:40 21:47	04:15 22:21	04:51 22:00	05:55 20:41	07:01 20:00	08:07 18:00	17:48 (2)
24	08:36 16:21	07:26 17:34	16:40 (4) 18:37		05:45 20:46	04:38 21:49	04:15 22:22	04:53 22:00	05:58 20:39	07:03 20:00	08:09 18:00	17:48 (2)
25	08:34 16:24	07:24 17:36	16:43 (4) 18:39		05:43 20:48	04:37 21:51	04:16 22:21	04:55 22:00	06:00 20:36	07:05 20:00	07:11 18:00	17:48 (2)
26	08:32 16:26	07:21 17:39	16:46 (4) 18:42		05:40 20:50	04:35 21:52	04:16 22:21	04:57 22:00	06:02 20:33	07:07 20:00	07:13 18:00	17:48 (2)
27	08:31 16:28	07:19 17:41	16:49 (4) 18:44		05:37 20:52	04:34 21:54	04:17 22:21	04:59 22:00	06:04 20:31	07:10 20:00	07:16 18:00	17:48 (2)
28	08:29 16:30	07:16 17:43	16:52 (4) 18:46		05:35 20:54	04:32 21:56	04:17 22:21	05:01 22:00	06:06 20:28	07:12 20:00	07:18 18:00	17:48 (2)
29	08:27 16:33		16:55 (4) 19:48		05:32 20:57	04:31 21:58	04:18 22:21	05:03 22:00	06:08 20:25	07:14 20:00	07:20 18:00	17:48 (2)
30	08:25 16:35		16:58 (4) 19:50		05:30 20:59	04:29 21:59	04:19 22:20	05:05 22:00	06:10 20:23	07:16 20:00	07:23 18:00	17:48 (2)
31	08:23 16:37		17:00 (4) 19:53		05:28 21:01	04:28 22:01	04:17 22:21	05:07 22:00	06:12 20:20	07:25 20:00	07:25 18:00	17:48 (2)
Potential sun hours	227	262	365	429	515	539	538	474	386	321	241	207
Total, worst case												
Sun reduction		0.19	0.40								0.08	
Oper. time red.		1.00	1.00								1.00	
Wind dir. red.		1.00	1.00								1.00	
Total reduction		0.19	0.40								0.08	
Total, real		31	56								8	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Last time (hh:mm) with flicker	(WTG causing flicker last time)

Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa
Assumptions for shadow calculations

Shadow receptor: Pastisli - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (790)
Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March		April		May	June	July	August		September		October	November	December			
1	09:01	08:21	07:14		06:48		05:28	04:27	04:20	05:09		06:15		06:46 (6)	07:19	07:28	08:33		
	15:40	16:40	17:46		19:55		21:01	22:03	22:20	21:35		20:18	13	06:59 (6)	18:54	16:32	15:38		
2	09:00	08:19	07:11		06:45		05:25	04:26	04:21	05:11		06:17		06:48 (6)	07:21	07:30	08:35		
	15:41	16:43	17:48		19:57		21:04	22:04	22:20	21:33		20:15	10	06:58 (6)	18:51	16:30	15:36		
3	09:00	08:17	07:08		06:42		05:23	04:25	04:22	05:13		06:19		06:50 (6)	07:23	07:32	08:37		
	15:42	16:45	17:51		20:00		21:06	22:06	22:19	21:31		20:12	6	06:56 (6)	18:48	16:28	15:35		
4	08:59	08:15	07:06		06:40		05:21	04:24	04:23	05:16		06:21		06:52 (6)	07:25	07:35	08:38		
	15:44	16:47	17:53		20:02		21:08	22:07	22:18	21:29		20:09	2	06:54 (6)	18:45	16:25	15:35		
5	08:59	08:13	07:03		06:37		05:18	04:23	04:24	05:18		06:24			07:27	07:37	08:40		
	15:45	16:50	17:55		20:04		21:10	22:08	22:18	21:27		20:06			18:42	16:23	15:34		
6	08:58	08:11	07:00		06:34		05:16	04:22	04:25	05:20		06:26			07:29	07:39	08:42		
	15:47	16:52	17:57		20:06		21:12	22:10	22:17	21:24		20:04			18:40	16:21	15:33		
7	08:58	08:08	06:57		06:31		05:14	04:21	04:26	05:22		06:28			07:32	07:42	08:43		
	15:48	16:54	18:00		20:08		21:15	22:11	22:16	21:22		20:01			18:37	16:19	15:32		
8	08:57	08:06	06:55		06:29		05:11	04:20	04:28	05:24		06:30			07:34	07:44	08:45		
	15:50	16:57	18:02		20:11	2	06:57 (6)	21:17	22:12	21:25		19:58			18:34	16:16	15:32		
9	08:56	08:04	06:52		06:26		06:52 (6)	05:09	04:19	04:29		06:32			07:36	07:46	08:46		
	15:52	16:59	18:04		20:13	6	06:58 (6)	21:19	22:13	21:14		19:55			18:31	16:14	15:31		
10	08:55	08:01	06:49		06:23		06:49 (6)	05:07	04:18	04:30		06:34			07:38	07:48	08:48		
	15:53	17:02	18:07		20:15	10	06:59 (6)	21:21	22:14	21:13		19:53			18:29	16:12	15:31		
11	08:54	07:59	06:47		06:20		06:47 (6)	05:05	04:18	04:32		06:36			07:40	07:51	08:49		
	15:55	17:04	18:09		20:17	13	07:00 (6)	21:23	22:15	21:12		19:50			18:26	16:10	15:30		
12	08:53	07:57	06:44		06:18		06:44 (6)	05:02	04:17	04:33		06:38			07:42	07:53	08:50		
	15:57	17:06	18:11		20:19	15	06:59 (6)	21:25	22:16	21:10		19:47			18:23	16:08	15:30		
13	08:52	07:54	06:41		06:15		06:43 (6)	05:00	04:17	04:35		06:40			07:45	07:55	08:51		
	15:59	17:09	18:13		20:22	16	06:59 (6)	21:27	22:17	21:07		19:44			18:21	16:06	15:30		
14	08:51	07:52	06:38		06:12		06:43 (6)	04:58	04:16	04:36		06:43			07:47	07:58	08:53		
	16:01	17:11	18:16		20:24	16	06:59 (6)	21:30	22:18	21:05		19:41			18:18	16:04	15:29		
15	08:50	07:50	06:35		06:09		06:43 (6)	04:56	04:16	04:38		06:45			07:49	08:00	08:54		
	16:03	17:13	18:18		20:26	15	06:58 (6)	21:32	22:19	21:02		19:39			18:15	16:02	15:29		
16	08:48	07:47	06:33		06:07		06:44 (6)	04:54	04:15	04:39		06:47			07:51	08:02	08:55		
	16:05	17:16	18:20		20:28	13	06:57 (6)	21:34	22:19	21:00		19:36	10	07:45 (7)	18:13	16:00	15:29		
17	08:47	07:45	06:30		06:04		06:45 (6)	04:52	04:15	04:41		06:49			07:54	08:04	08:56		
	16:07	17:18	18:22		20:31	10	06:55 (6)	21:36	22:20	21:03		19:33	13	07:46 (7)	18:10	15:58	15:29		
18	08:46	07:42	06:27		06:01		06:48 (6)	04:50	04:15	04:43		06:51			07:52 (7)	08:06	08:56		
	16:09	17:20	18:24	6	06:59 (7)	20:33	3	06:51 (6)	22:19	22:02		19:30	16	07:48 (7)	18:07	15:56	15:29		
19	08:44	07:40	06:24		06:50 (7)	05:59		04:48	04:15	04:44		06:53			07:51 (7)	08:09	08:57		
	16:11	17:23	18:27	10	07:00 (7)	20:35		21:40	22:21	22:00		19:27	17	07:48 (7)	18:05	15:55	15:30		
20	08:43	07:37	06:22		06:48 (7)	05:56		04:46	04:15	04:46		06:55			07:50 (7)	08:00	08:11	08:58	
	16:13	17:25	18:29	14	07:02 (7)	20:37		21:42	22:21	21:59		19:24	18	07:48 (7)	18:02	15:53	15:30		
21	08:41	07:35	06:19		06:45 (7)	05:53		04:44	04:15	04:48		06:57			07:50 (7)	08:03	08:13	08:59	
	16:15	17:27	18:31	17	07:02 (7)	20:39		21:44	22:21	21:57		19:22	17	07:47 (7)	18:00	15:51	15:30		
22	08:40	07:32	06:16		06:44 (7)	05:51		04:42	04:15	04:50		06:59			07:52 (7)	08:05	08:15	08:59	
	16:17	17:30	18:33	18	07:02 (7)	20:42		21:45	22:22	21:55		19:19	18	07:47 (7)	17:57	15:50	15:31		
23	08:38	07:29	06:13		06:44 (7)	05:48		04:41	04:16	04:52		07:02			07:51 (7)	08:07	08:17	09:00	
	16:20	17:32	18:35	17	07:01 (7)	20:44		21:47	22:22	21:53		19:16	15	07:46 (7)	17:54	15:48	15:31		
24	08:36	07:27	06:10		06:43 (7)	05:46		04:39	04:16	04:54		07:04			07:53 (7)	08:09	08:19	09:00	
	16:22	17:34	18:38	17	07:00 (7)	20:46		21:49	22:22	21:52		19:13	11	07:44 (7)	17:52	15:47	15:32		
25	08:35	07:24	06:08		06:43 (7)	05:43		04:37	04:16	04:55		07:06			07:55 (7)	08:12	08:21	09:00	
	16:24	17:37	18:40	16	06:59 (7)	20:48		21:51	22:22	21:50		4	06:55 (6)	19:10	8	07:43 (7)	16:49	15:45	15:32
26	08:33	07:22	06:05		06:45 (7)	05:40		04:36	04:17	04:57		06:02			07:56 (6)	08:13	08:23	09:01	
	16:26	17:39	18:42	14	06:59 (7)	20:50		21:53	22:22	21:48		10	06:58 (6)	19:08	3	07:40 (7)	16:47	15:44	15:33
27	08:31	07:19	06:02		06:46 (7)	05:38		04:34	04:17	04:59		06:04			07:57 (6)	08:16	08:25	09:01	
	16:29	17:41	18:44	11	06:57 (7)	20:53		21:55	22:22	21:46		13	06:59 (6)	19:05		16:44	15:42	15:34	
28	08:29	07:16	06:00		06:49 (7)	05:35		04:33	04:18	05:01		06:07			07:58 (6)	08:17	08:27	09:01	
	16:31	17:44	18:46	4	06:53 (7)	20:55		21:56	22:21	21:44		15	07:00 (6)	19:02		16:42	15:41	15:35	
29	08:27		06:56		05:33	04:31		04:31	04:19	05:03		06:09			06:44 (6)	07:14	07:21	08:29	09:01
	16:33		19:49		20:57	21:58		22:21	21:42	20:26		16	07:00 (6)	18:59		16:39	15:40	15:36	
30	08:25		06:54		05:30	04:30		04:19	05:05	06:11		06:44 (6)			07:16	07:23	08:31	09:01	
	16:36		19:51		20:59	22:00		22:21	21:40	20:23		16	07:00 (6)	18:56		16:37	15:39	15:37	
31	08:23		06:51			04:28			05:07	06:13		06:44 (6)				07:25		09:01	
	16:38		19:53			22:01			21:38	20:20		15	06:59 (6)			16:35		15:38	
Potential sun hours	227	262	365		429		515	539		538		474	386			321	241		207
Total, worst case				144		119						89		177					
Sun reduction				0.40		0.43						0.50		0.46					
Oper. time red.				1.00		1.00						1.00		1.00					
Wind dir. red.				1.00		1.00						1.00		1.00					
Total reduction				0.40		0.43						0.50		0.46					
Total, real			58			51						45		82					

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Last time (hh:mm) with flicker	(WTG causing flicker last time)

Flickering_Valka_Siemens_Gamesa

SIA Estonian, Latvian & Lithuanian environment
Vilandes 3-6
LV-1010 Riga
0037167242411
Baiba / baiba.ozolina@environment.lv
Calculated:
15/01/2026 18:42/4.1.254

Calculation: Flickering_Valka_Siemens_Gameša Shadow receptor: Pilenieš i - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (779)
Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) []
Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec.

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

		January	February	March	April	May	June	July	August	September	October	November	December
1	09:00		14:01 (14)	08:21	08:53 (2)	07:13	06:48	05:28	04:27	04:20	05:09	06:15	07:18
	15:39	118	14:09 (6)	16:40	59	10:46 (1)	17:46	19:55	21:01	22:03	22:20	21:35	20:17
2	09:00		10:02 (14)	08:19	08:51 (2)	07:11	06:45	05:25	04:26	04:21	05:11	06:17	07:21
	15:41	118	14:10 (6)	16:42	61	10:46 (1)	17:48	19:57	21:04	22:04	22:20	21:33	20:15
3	09:00		10:02 (14)	08:17	08:50 (2)	07:08	06:42	05:23	04:24	04:22	05:13	06:19	07:23
	15:42	117	14:10 (6)	16:45	62	10:46 (1)	17:50	19:59	21:06	22:06	22:19	21:31	20:12
4	08:59		10:03 (14)	08:15	08:49 (2)	07:05	06:39	05:20	04:23	04:23	05:15	06:21	07:25
	15:43	114	14:10 (6)	16:47	61	10:45 (1)	17:53	20:02	21:08	22:07	22:18	21:29	20:09
5	08:59		10:03 (1)	08:13	08:50 (2)	07:03	06:37	05:18	04:22	04:24	05:17	06:23	07:27
	15:45	112	14:10 (6)	16:49	60	10:45 (1)	17:55	20:04	21:10	22:08	22:18	21:26	20:06
6	08:58		10:03 (1)	08:10	08:51 (2)	07:00	06:34	05:16	04:21	04:25	05:19	06:25	07:29
	15:46	109	14:10 (6)	16:52	58	10:45 (1)	17:57	20:06	21:12	22:10	22:17	21:24	20:04
7	08:58		10:02 (1)	08:08	08:45 (1)	06:57	06:31	05:13	04:20	04:26	05:22	06:28	07:31
	15:48	108	14:10 (6)	16:54	55	10:44 (1)	18:00	20:08	21:15	22:11	22:16	21:22	20:01
8	08:57		10:02 (1)	08:06	08:42 (2)	06:55	06:28	05:11	04:19	04:27	05:24	06:30	07:34
	15:50	103	14:10 (6)	16:56	52	10:43 (1)	18:02	20:10	21:17	22:12	22:15	21:19	19:58
9	08:56		10:02 (1)	08:04	08:52 (2)	06:52	06:26	05:09	04:19	04:29	05:26	06:32	07:36
	15:51	95	14:11 (6)	16:59	49	10:42 (1)	18:04	20:13	21:19	22:13	22:14	21:17	19:55
10	08:55		10:02 (1)	08:01	08:54 (2)	06:49	06:23	05:06	04:18	04:30	05:28	06:34	07:38
	15:53	94	14:11 (6)	17:01	44	10:41 (1)	18:06	20:15	21:21	22:14	22:13	21:15	19:52
11	08:54		10:02 (1)	07:59	08:45 (2)	06:46	06:20	05:04	04:17	04:31	05:30	06:36	07:40
	15:55	92	14:11 (6)	17:04	36	10:38 (1)	18:09	20:17	21:23	22:15	22:12	21:12	19:50
12	08:53		10:01 (1)	07:57	10:14 (1)	06:44	06:17	05:02	04:17	04:33	05:32	06:38	07:42
	15:57	89	14:09 (6)	17:06	22	10:36 (1)	18:11	20:19	21:25	22:16	22:10	21:10	19:47
13	08:52		10:02 (1)	07:54	10:18 (1)	06:41	06:12	05:00	04:16	04:36	05:35	06:41	07:45
	15:59	87	14:09 (6)	17:08	15	10:33 (1)	18:13	20:22	21:27	22:17	22:09	21:07	19:44
14	08:51		10:01 (1)	07:52		06:38	06:12	04:58	04:16	04:36	05:36	06:42	07:47
	16:00	85	14:07 (6)	17:11		18:15	20:24	21:29	22:18	22:08	21:05	19:41	18:18
15	08:50		10:02 (1)	07:49		06:35	06:09	04:56	04:15	04:37	05:39	06:44	07:49
	16:02	76	13:28 (5)	17									

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Minutes with flicker	Last time (hh:mm) with flicker
			(WTG causing flicker last time)

Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa
Assumptions for shadow calculations

Shadow receptor: Planci - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (575)
Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:00 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:27 21:01	04:26 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:27 16:32	08:33 15:37
2	09:00 15:40	08:19 16:42	07:11 17:48	06:45 19:57	05:25 21:03	04:25 22:04	04:20 22:19	05:11 21:33	06:17 20:14	07:20 18:50	07:30 16:29	08:35 15:36
3	09:00 15:42	08:17 16:44	07:08 17:50	06:42 19:59	05:23 21:06	04:24 22:06	04:21 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:36 15:35
4	08:59 15:43	08:15 16:47	07:05 17:53	06:39 20:02	05:20 21:08	04:23 22:07	04:22 22:18	05:15 21:29	06:21 20:09	07:25 18:45	07:34 16:25	08:38 15:34
5	08:59 15:45	08:12 16:49	07:03 17:55	06:36 20:04	05:18 21:10	04:22 22:08	04:23 22:17	05:17 21:26	06:23 20:06	07:27 18:42	07:37 16:22	08:40 15:33
6	08:58 15:46	08:10 16:51	07:00 17:57	06:34 20:06	05:15 21:12	04:21 22:10	04:25 22:17	05:19 21:24	06:25 20:03	07:29 18:39	07:39 16:20	08:41 15:32
7	08:57 15:48	08:08 16:54	06:57 17:59	06:31 20:08	05:13 21:14	04:20 22:11	04:26 22:16	05:21 21:22	06:27 20:01	07:31 18:37	07:41 16:18	08:43 15:32
8	08:57 15:49	08:06 16:56	06:54 18:02	06:28 20:10	05:11 21:17	04:19 22:12	04:27 22:15	05:23 21:19	06:29 19:58	07:33 18:34	07:44 16:16	08:45 15:31
9	08:56 15:51	08:04 16:59	06:52 18:04	06:25 20:13	05:08 21:19	04:18 22:13	04:28 22:14	05:25 21:17	06:32 19:55	07:36 18:31	07:46 16:14	08:46 15:30
10	08:55 15:53	08:01 17:01	06:49 18:06	06:23 20:15	05:06 21:21	04:18 22:14	04:30 22:13	05:28 21:15	06:34 19:52	07:38 18:28	07:48 16:12	08:47 15:30
11	08:54 15:55	07:59 17:03	06:46 18:08	06:20 20:17	05:04 21:23	04:17 22:15	04:31 22:11	05:30 21:12	06:36 19:49	07:40 18:26	07:50 16:09	08:49 15:30
12	08:53 15:56	07:57 17:06	06:43 18:11	06:17 20:19	05:02 21:25	04:16 22:16	04:32 22:10	05:32 21:10	06:38 19:47	07:42 18:23	07:53 16:07	08:50 15:29
13	08:52 15:58	07:54 17:08	06:41 18:13	06:14 20:21	05:00 21:27	04:16 22:17	04:34 22:09	05:34 21:07	06:40 19:44	07:44 18:20	07:55 16:05	08:51 15:29
14	08:51 16:00	07:52 17:11	06:38 18:15	06:12 20:24	04:58 21:29	04:15 22:18	04:36 22:08	05:36 21:05	06:42 19:41	07:47 18:18	07:57 16:03	08:52 15:29
15	08:50 16:02	07:49 17:13	06:35 18:17	06:09 20:26	04:55 21:31	04:15 22:19	04:37 22:06	05:38 21:02	06:44 19:38	07:49 18:15	08:00 16:01	08:53 15:29
16	08:48 16:04	07:47 17:15	06:32 18:20	06:06 20:28	04:53 21:33	04:15 22:19	04:39 22:05	05:40 21:00	06:46 19:35	07:51 18:12	08:02 16:00	08:55 15:29
17	08:47 16:06	07:44 17:18	06:30 18:22	06:04 20:30	04:51 21:35	04:15 22:20	04:40 22:03	05:43 20:57	06:48 19:33	07:53 18:10	08:04 15:58	08:55 15:29
18	08:46 16:08	07:42 17:20	06:27 18:24	06:01 20:32	04:49 21:37	04:15 22:20	04:42 22:02	05:45 20:55	06:51 19:30	07:55 18:07	08:06 15:56	08:56 15:29
19	08:44 16:10	07:39 17:22	06:24 18:26	05:58 20:35	04:47 21:39	04:14 22:21	04:44 22:00	05:47 20:52	06:53 19:27	07:58 18:04	08:08 15:54	08:57 15:29
20	08:43 16:12	07:37 17:25	06:21 18:28	05:56 20:37	04:46 21:41	04:14 22:21	04:46 21:58	05:49 20:49	06:55 19:24	08:00 18:02	08:11 15:52	08:58 15:29
21	08:41 16:15	07:34 17:27	06:18 18:31	05:53 20:39	04:44 21:43	04:15 22:21	04:47 21:57	05:51 20:47	06:57 19:21	08:02 17:59	08:13 15:51	08:58 15:30
22	08:39 16:17	07:32 17:29	06:16 18:33	05:50 20:41	04:42 21:45	04:15 22:22	04:49 21:55	05:53 20:44	06:59 19:18	08:05 17:56	08:15 15:49	08:59 15:30
23	08:38 16:19	07:29 17:32	06:13 18:35	05:48 20:44	04:40 21:47	04:15 22:22	04:51 21:53	05:55 20:42	07:01 19:16	08:07 17:54	08:17 15:48	09:00 15:31
24	08:36 16:21	07:27 17:34	06:10 18:37	05:45 20:46	04:38 21:49	04:15 22:22	04:53 21:51	05:58 20:39	07:03 19:13	08:09 17:51	08:19 15:46	09:00 15:31
25	08:34 16:24	07:24 17:36	06:07 18:39	05:43 20:48	04:37 21:51	04:16 22:22	04:55 21:50	06:00 20:36	07:05 19:10	07:11 16:49	08:21 15:45	09:00 15:32
26	08:33 16:26	07:21 17:39	06:04 18:42	05:40 20:50	04:35 21:53	04:16 22:22	04:57 21:48	06:02 20:34	07:08 19:07	07:14 16:46	08:23 15:43	09:01 15:33
27	08:31 16:28	07:19 17:41	06:02 18:44	05:37 20:52	04:34 21:54	04:17 22:21	04:59 21:46	06:04 20:31	07:10 19:04	07:16 16:44	08:25 15:42	09:01 15:33
28	08:29 16:30	07:16 17:43	05:59 18:46	05:35 20:55	04:32 21:56	04:17 22:21	05:01 21:44	06:06 20:28	07:12 19:02	07:18 16:41	08:27 15:40	09:01 15:34
29	08:27 16:33		06:56 19:48	05:32 20:57	04:31 21:58	04:18 22:21	05:03 21:42	06:08 20:25	07:14 18:59	07:21 16:39	08:29 15:39	09:01 15:35
30	08:25 16:35		06:53 19:51	05:30 20:59	04:29 21:59	04:19 22:21	05:05 21:39	06:10 20:23	07:16 18:56	07:23 16:36	08:31 15:38	09:01 15:36
31	08:23 16:37		06:50 19:53		04:28 22:01		05:07 21:37	06:12 20:20		07:25 16:34		09:01 15:38
Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment
Vilandes 3-6
LV-1010 Riga
0037167242411
Baiba / baiba.ozolina@environment.lv
Calculated:
15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa
Assumptions for shadow calculations

Shadow receptor: Plumes - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (490)
Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:00 15:39	08:21 16:40	15:49 (4) 07:13	17:06 (2) 06:47	05:27 21:01	04:27 22:02	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:27 16:32	15:23 (4) 08:33
2	09:00 15:40	08:19 16:42	15:49 (4) 07:11	17:05 (2) 06:45	05:25 21:03	04:25 22:04	04:21 22:19	05:11 21:33	06:17 20:14	07:20 18:50	07:30 16:29	15:22 (4) 08:35
3	09:00 15:42	08:17 16:44	15:48 (4) 07:08	17:04 (2) 06:42	05:23 21:06	04:24 22:05	04:21 22:19	05:13 21:31	06:19 20:12	07:22 18:48	17:46 (2) 07:32	15:20 (4) 08:36
4	08:59 15:43	08:15 16:47	15:49 (4) 07:05	17:03 (2) 06:39	05:20 21:08	04:23 22:07	04:22 22:18	05:15 21:28	06:21 20:09	07:25 18:45	17:43 (2) 07:34	15:20 (4) 08:38
5	08:59 15:45	08:12 16:49	15:50 (4) 07:02	17:03 (2) 06:36	05:18 21:00	04:22 22:08	04:24 22:17	05:17 21:26	06:23 20:06	07:27 18:42	17:42 (2) 07:37	15:19 (4) 08:40
6	08:58 15:46	08:10 16:52	15:49 (4) 07:00	17:04 (2) 06:34	05:15 21:10	04:21 22:08	04:25 22:17	05:19 21:26	06:25 20:06	07:29 18:42	17:40 (2) 07:39	15:19 (4) 08:41
7	08:57 15:48	08:08 16:54	15:51 (4) 06:57	17:04 (2) 06:31	05:13 21:12	04:20 22:09	04:26 22:16	05:21 21:24	06:27 20:03	07:31 18:39	17:39 (2) 07:41	15:20 (4) 08:43
8	08:56 15:49	08:06 16:56	15:51 (4) 06:54	17:04 (2) 06:28	05:11 21:16	04:19 22:12	04:27 22:15	05:23 21:19	06:29 20:06	07:33 18:34	17:38 (2) 07:43	15:19 (4) 08:44
9	08:56 15:51	08:03 16:59	15:53 (4) 06:52	17:05 (2) 06:25	05:09 21:19	04:18 22:13	04:28 22:14	05:26 21:17	06:32 20:06	07:36 18:31	17:38 (2) 07:46	15:20 (4) 08:46
10	08:55 15:53	08:01 17:01	15:54 (4) 06:49	17:06 (2) 06:23	05:06 21:21	04:18 22:14	04:30 22:12	05:28 21:14	06:34 20:06	07:38 18:28	17:38 (2) 07:48	15:20 (4) 08:47
11	08:54 15:55	07:59 17:03	15:57 (4) 06:46	17:10 (2) 06:20	05:04 21:23	04:17 22:15	04:31 22:11	05:30 21:12	06:36 20:06	07:40 18:26	17:38 (2) 07:50	15:21 (4) 08:49
12	08:53 15:56	07:56 17:06	16:03 (4) 06:43	17:15 (2) 06:17	05:02 21:25	04:17 22:16	04:33 22:10	05:32 21:10	06:38 20:06	07:42 18:23	17:38 (2) 07:53	15:21 (4) 08:50
13	08:52 15:58	07:54 17:08	06:41 18:13	06:14 20:21	05:00 21:27	04:16 22:22	04:34 22:09	05:34 21:07	06:40 20:06	07:44 18:20	17:39 (2) 07:55	15:22 (4) 08:51
14	08:51 16:00	07:52 17:11	06:38 18:15	06:12 20:24	04:58 21:29	04:16 22:18	04:36 22:07	05:36 21:05	06:42 20:06	07:47 18:18	17:40 (2) 07:57	15:24 (4) 08:52
15	08:49 16:02	07:49 17:13	06:35 18:17	06:09 20:26	04:56 21:31	04:15 22:18	04:37 22:06	05:38 21:02	06:44 20:06	07:49 18:15	17:45 (2) 07:59	15:25 (4) 08:53
16	08:48 16:04	07:47 17:15	06:32 18:20	06:06 20:28	04:53 21:33	04:15 22:19	04:39 22:05	05:40 21:00	06:46 20:06	07:51 18:12	17:53 (2) 08:04	15:26 (4) 08:54
17	08:47 16:06	07:44 17:18	06:29 18:22	06:04 20:30	04:51 21:35	04:15 22:20	04:40 22:03	05:43 20:57	06:48 20:06	07:53 18:10	17:53 (2) 08:06	15:27 (4) 08:55
18	08:45 16:08	07:42 17:20	06:27 18:24	06:01 20:32	04:49 21:37	04:15 22:20	04:42 22:02	05:45 20:54	06:51 20:06	07:55 18:07	17:53 (2) 08:08	15:28 (4) 08:56
19	08:44 16:10	07:39 17:22	06:24 18:26	05:58 20:35	04:48 21:39	04:15 22:20	04:44 22:00	05:47 20:52	06:53 20:06	07:58 18:04	17:53 (2) 08:08	15:29 (4) 08:57
20	08:42 16:13	07:37 17:25	06:21 18:28	05:56 20:37	04:46 21:41	04:15 22:21	04:46 21:58	05:49 20:49	06:55 20:06	07:59 18:04	17:53 (2) 08:08	15:30 (4) 08:58
21	08:41 16:15	07:34 17:27	06:18 18:31	05:53 20:39	04:44 21:43	04:15 22:21	04:47 21:57	05:51 20:47	06:57 20:06	07:59 18:04	17:53 (2) 08:08	15:31 (4) 08:59
22	08:39 16:17	07:32 17:29	06:15 18:33	05:50 20:41	04:42 21:45	04:15 22:21	04:49 21:55	05:53 20:44	06:59 20:06	08:04 17:56	17:53 (2) 08:07	15:32 (4) 08:59
23	08:38 16:19	07:29 17:32	06:13 18:35	05:48 20:43	04:40 21:47	04:15 22:21	04:51 21:53	05:55 20:41	07:01 20:06	08:07 17:54	17:53 (2) 08:09	15:33 (4) 09:00
24	08:36 16:21	07:26 17:34	06:10 18:37	05:45 20:46	04:38 21:49	04:15 22:22	04:53 21:51	05:58 20:39	07:03 20:06	08:09 17:51	17:53 (2) 08:10	15:34 (4) 09:01
25	08:34 16:24	07:24 17:36	06:07 18:39	05:43 20:48	04:37 21:51	04:16 22:22	04:55 21:49	06:00 20:36	07:05 20:06	07:11 16:49	17:53 (2) 08:11	15:35 (4) 09:02
26	08:32 16:26	07:21 17:39	06:04 18:42	05:40 20:50	04:35 21:52	04:16 22:21	04:57 21:47	06:02 20:33	07:07 20:06	07:14 16:46	17:53 (2) 08:12	15:36 (4) 09:03
27	08:31 16:28	07:19 17:41	17:09 (2) 06:01	05:37 20:52	04:34 21:54	04:17 22:21	04:59 21:45	06:04 20:31	07:10 20:06	07:16 16:44	17:53 (2) 08:13	15:37 (4) 09:04
28	08:29 16:30	15:51 (4) 07:16	17:06 (2) 05:59	05:35 20:54	04:32 21:56	04:17 22:21	05:01 21:43	06:06 20:28	07:12 20:06	07:18 16:41	17:53 (2) 08:14	15:38 (4) 09:05
29	08:27 16:33	15:51 (4) 07:14	17:13 (2) 05:56	05:32 20:57	04:31 21:58	04:18 22:21	05:03 21:41	06:08 20:25	07:14 20:06	07:20 16:39	17:53 (2) 08:15	15:39 (4) 09:06
30	08:25 16:35	15:50 (4) 07:15	06:53 19:50	05:30 20:59	04:29 21:59	04:19 22:20	05:05 21:39	06:10 20:23	07:16 20:06	07:23 16:37	17:53 (2) 08:16	15:40 (4) 09:07
31	08:23 16:37	15:49 (4) 07:16	06:50 19:53	05:28 20:57	04:28 22:01	04:18 22:21	05:07 21:37	06:12 20:20	07:25 20:06	07:26 16:34	17:53 (2) 08:17	15:41 (4) 09:08
Potential sun hours	227	262	365	429	515	539	538	474	386	321	241	207
Total, worst case	24	184	167	167	167	167	167	167	167	167	167	167
Sun reduction	0.11	0.19	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40
Oper. time red.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Wind dir. red.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Total reduction	0.11	0.19	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40
Total, real	3	36	67	67	67	67	67	67	67	67	67	67

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Last time (hh:mm) with flicker	(WTG causing flicker last time)

Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Plumites - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (780)
Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:40 09:00	08:21 16:40 08:19	08:54 (7) 09:07 (7) 08:51 (7)	07:14 17:46 07:11	07:49 (6) 08:05 (6) 07:49 (6)	06:48 19:55 06:45	05:28 21:02 05:25	04:27 22:03 04:26	04:20 22:20 04:21	05:09 21:35 05:11	06:15 20:18 06:17	07:19 18:54 07:21
2	15:41 09:00	16:42 08:17	09:06 (7) 08:50 (7)	17:48 07:08	15 08:04 (6)	19:57 06:42	21:04 05:23	22:04 04:25	22:20 04:22	21:33 05:13	20:15 06:19	07:23 07:32
3	15:42 08:59	16:45 08:15	09:07 (7) 08:50 (7)	17:51 07:06	12 08:02 (6)	20:00 06:40	21:06 05:21	22:06 04:23	22:19 04:23	21:31 05:15	20:12 06:21	07:25 07:35
4	15:44 08:59	16:47 08:13	09:07 (7) 08:50 (7)	17:53 07:03	6 08:00 (6)	20:02 06:37	21:08 05:18	22:07 04:22	22:18 04:24	21:29 05:18	20:09 06:24	07:27 07:37
5	15:45 08:58	16:50 08:11	09:07 (7) 08:51 (7)	17:55 07:00		20:04 06:34	21:10 05:16	22:09 04:21	22:18 04:25	21:27 05:20	20:06 06:26	07:29 07:39
6	15:47 08:58	16:52 08:08	09:07 (7) 08:51 (7)	17:57 06:57		20:06 06:31	21:12 05:14	22:10 04:21	22:17 04:26	21:24 05:22	20:04 06:28	07:32 07:42
7	15:48 08:57	16:54 08:06	09:05 (7) 08:53 (7)	18:00 06:55		20:08 06:28	21:15 05:11	22:11 04:20	22:16 04:27	21:22 05:24	20:01 06:30	07:37 07:44
8	15:50 08:56	16:57 08:04	09:05 (7) 08:55 (7)	18:02 06:52		20:11 06:26	21:17 05:09	22:12 04:19	22:15 04:29	21:20 05:26	19:58 06:32	07:46 07:53
9	15:52 08:55	16:59 08:01	09:02 (7) 08:51 (7)	18:04 06:49		20:13 06:23	21:19 05:07	22:13 04:18	22:14 04:30	21:17 05:28	19:55 06:34	07:51 07:58
10	15:53 08:54	17:01 07:59		18:07 06:46		20:15 06:20	21:21 05:04	22:14 04:18	22:13 04:32	21:15 05:30	19:53 06:36	07:58 08:05
11	15:55 08:53	17:04 07:57		18:09 06:44		20:17 06:18	21:23 05:02	22:15 04:17	22:12 04:33	21:12 05:32	19:50 06:38	08:06 08:13
12	15:57 08:52	17:06 07:54		18:11 06:41		20:19 06:15	21:25 05:00	22:16 04:16	22:10 04:34	21:10 05:34	19:47 06:40	08:14 08:21
13	15:59 08:51	17:09 07:52		18:13 06:38		20:22 06:12	21:27 04:58	22:17 04:16	22:09 04:36	21:07 05:37	19:44 06:43	08:22 08:29
14	16:01 08:50	17:11 07:50		18:15 06:35		20:24 06:09	21:30 04:56	22:18 04:16	22:08 04:38	21:05 05:39	19:41 06:45	08:30 08:37
15	16:03 08:48	17:13 07:47		18:18 06:33		20:26 06:07	21:32 04:54	22:19 04:15	22:06 04:39	21:02 05:41	19:39 06:47	08:38 08:45
16	16:05 08:47	17:16 07:45		18:20 06:30		20:28 06:04	21:34 04:52	22:19 04:15	22:05 04:41	21:00 05:43	19:36 06:49	08:46 08:53
17	16:07 08:46	17:18 07:42		18:22 06:27		20:31 06:01	21:36 04:50	22:20 04:15	22:04 04:43	20:57 05:45	19:33 06:51	08:54 09:01
18	16:09 08:44	17:20 07:40		18:24 06:24		20:33 05:59	21:38 04:48	22:20 04:15	22:02 04:44	20:55 05:47	19:30 06:53	09:02 09:09
19	16:11 08:43	17:23 07:37		18:27 06:21		20:35 05:56	21:40 04:46	22:21 04:15	22:00 04:46	20:52 05:49	19:27 06:55	09:10 09:17
20	16:13 08:41	17:25 07:35		18:29 06:19		20:37 05:53	21:42 04:44	22:21 04:15	22:00 04:48	20:52 05:52	19:27 06:57	09:18 09:25
21	16:15 08:40	17:27 07:32		18:31 06:16		20:39 05:51	21:44 04:42	22:22 04:15	22:00 04:50	20:50 05:54	19:24 06:59	09:26 09:33
22	16:17 08:38	17:30 07:29	4 08:04 (6)	18:33 06:13		20:42 05:48	21:46 04:41	22:22 04:15	22:00 04:52	20:54 05:56	19:22 07:02	09:34 09:41
23	16:19 08:36	17:32 07:27	8 08:05 (6)	18:35 06:10		20:44 05:46	21:47 04:39	22:22 04:16	22:00 04:53	20:42 05:58	19:16 07:04	09:42 09:49
24	16:22 08:35	17:34 07:24	11 08:06 (6)	18:38 06:07		20:46 05:43	21:49 04:37	22:22 04:16	22:00 04:55	20:39 06:00	19:13 07:06	09:50 09:57
25	16:24 08:33	17:37 07:22	14 08:06 (6)	18:40 06:05		20:48 05:40	21:51 04:36	22:22 04:17	22:00 04:57	20:36 06:02	19:10 07:08	10:00 10:07
26	16:26 08:31	17:39 07:19	17 08:06 (6)	18:42 06:02		20:50 05:38	21:53 04:34	22:22 04:17	22:00 04:59	20:34 06:04	19:08 07:10	10:08 10:15
27	16:29 08:29	17:41 07:16	18 08:06 (6)	18:44 05:59		20:53 05:35	21:55 04:33	22:22 04:18	22:00 05:01	20:31 06:06	19:05 07:12	10:16 10:23
28	16:31 08:27	17:44 09:00 (7)	17 08:06 (6)	18:46 06:56		20:55 05:33	21:56 04:31	22:21 04:18	22:00 05:03	20:28 06:09	19:02 07:14	10:24 10:31
29	16:33 08:25	3 09:03 (7)		19:49 06:53		20:57 05:30	21:58 04:30	22:21 04:19	22:00 05:05	20:26 06:11	18:59 07:16	10:32 10:39
30	16:35 08:23	7 09:05 (7)		19:51 06:51		20:59 05:28	22:00 04:28	22:21 04:19	22:00 05:07	20:23 06:13	18:56 07:18	10:40 10:47
31	16:38 08:23	10 09:06 (7)		19:53 06:51		22:01 05:28	22:01 04:28	21:38 05:07	20:20 06:13	18:56 07:18	18:56 07:18	10:48 10:55
Potential sun hours	227	262	365	429	515	539	538	474	386	321	241	207
Total, worst case	20	217	49	429	515	539	538	474	386	321	241	207
Sun reduction	0.11	0.19	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40
Oper. time red.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Wind dir. red.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Total reduction	0.11	0.19	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40
Total, real	2	42	20	429	515	539	538	474	386	321	241	207

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Last time (hh:mm) with flicker	(WTG causing flicker last time)

Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Poruka iela 13 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (617)
 Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:28 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
2	09:00 15:40	08:19 16:42	07:11 17:48	06:45 19:57	05:25 21:04	04:25 22:04	04:20 22:20	05:11 21:33	06:17 20:15	07:21 18:51	07:30 16:29	08:35 15:36
3	09:00 15:42	08:17 16:44	07:08 17:50	06:42 19:59	05:23 21:06	04:24 22:06	04:21 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:37 15:35
4	08:59 15:43	08:15 16:47	07:05 17:53	06:39 20:02	05:20 21:08	04:23 22:07	04:22 22:18	05:15 21:29	06:21 20:09	07:25 18:45	07:35 16:25	08:38 15:34
5	08:59 15:45	08:13 16:49	07:03 17:55	06:37 20:04	05:18 21:10	04:22 22:09	04:23 22:18	05:17 21:26	06:23 20:06	07:27 18:42	07:37 16:23	08:40 15:33
6	08:58 15:46	08:10 16:52	07:00 17:57	06:34 20:06	05:15 21:12	04:21 22:10	04:25 22:17	05:19 21:24	06:25 20:04	07:29 18:39	07:39 16:20	08:42 15:32
7	08:58 15:48	08:08 16:54	06:57 17:59	06:31 20:08	05:13 21:15	04:20 22:11	04:26 22:16	05:21 21:22	06:27 20:01	07:31 18:37	07:41 16:18	08:43 15:32
8	08:57 15:49	08:06 16:56	06:55 18:02	06:28 20:10	05:11 21:17	04:19 22:12	04:27 22:15	05:23 21:20	06:30 19:58	07:34 18:34	07:44 16:16	08:45 15:31
9	08:56 15:51	08:04 16:59	06:52 18:04	06:25 20:13	05:09 21:19	04:18 22:13	04:28 22:14	05:26 21:17	06:32 19:55	07:36 18:31	07:46 16:14	08:46 15:30
10	08:55 15:53	08:01 17:01	06:49 18:06	06:23 20:15	05:06 21:21	04:18 22:14	04:30 22:13	05:28 21:15	06:34 19:52	07:38 18:28	07:48 16:12	08:48 15:30
11	08:54 15:55	07:59 17:03	06:46 18:09	06:20 20:17	05:04 21:23	04:17 22:15	04:31 22:12	05:30 21:12	06:36 19:50	07:40 18:26	07:51 16:10	08:49 15:30
12	08:53 15:56	07:57 17:06	06:44 18:11	06:17 20:19	05:02 21:25	04:16 22:16	04:33 22:10	05:32 21:10	06:38 19:47	07:42 18:23	07:53 16:07	08:50 15:29
13	08:52 15:58	07:54 17:08	06:41 18:13	06:14 20:22	05:00 21:27	04:16 22:17	04:34 22:09	05:34 21:07	06:40 19:44	07:45 18:20	07:55 16:05	08:51 15:29
14	08:51 16:00	07:52 17:11	06:38 18:15	06:12 20:24	04:58 21:29	04:16 22:18	04:36 22:08	05:36 21:05	06:42 19:41	07:47 18:18	07:57 16:03	08:53 15:29
15	08:50 16:02	07:49 17:13	06:35 18:17	06:09 20:26	04:56 21:32	04:15 22:19	04:37 22:06	05:38 21:02	06:44 19:38	07:49 18:15	08:00 16:02	08:54 15:29
16	08:48 16:04	07:47 17:15	06:32 18:20	06:06 20:28	04:53 21:34	04:15 22:19	04:39 22:05	05:41 21:00	06:46 19:35	07:51 18:12	08:02 16:00	08:55 15:29
17	08:47 16:06	07:44 17:18	06:30 18:22	06:04 20:30	04:51 21:36	04:15 22:20	04:40 22:03	05:43 20:57	06:49 19:33	07:53 18:10	08:04 15:58	08:56 15:29
18	08:46 16:08	07:42 17:20	06:27 18:24	06:01 20:33	04:49 21:38	04:15 22:20	04:42 22:02	05:45 20:55	06:51 19:30	07:56 18:07	08:06 15:56	08:56 15:29
19	08:44 16:10	07:39 17:22	06:24 18:26	05:58 20:35	04:48 21:40	04:15 22:21	04:44 22:00	05:47 20:52	06:53 19:27	07:58 18:04	08:09 15:54	08:57 15:29
20	08:43 16:13	07:37 17:25	06:21 18:29	05:56 20:37	04:46 21:42	04:15 22:21	04:46 21:59	05:49 20:50	06:55 19:24	08:00 18:02	08:11 15:52	08:58 15:29
21	08:41 16:15	07:34 17:27	06:18 18:31	05:53 20:39	04:44 21:44	04:15 22:22	04:47 21:57	05:51 20:47	06:57 19:21	08:02 17:59	08:13 15:51	08:59 15:30
22	08:40 16:17	07:32 17:29	06:16 18:33	05:50 20:41	04:42 21:45	04:15 22:22	04:49 21:55	05:53 20:44	06:59 19:19	08:05 17:57	08:15 15:49	08:59 15:30
23	08:38 16:19	07:29 17:32	06:13 18:35	05:48 20:44	04:40 21:47	04:15 22:22	04:51 21:53	05:55 20:42	07:01 19:16	08:07 17:54	08:17 15:48	09:00 15:31
24	08:36 16:21	07:27 17:34	06:10 18:37	05:45 20:46	04:38 21:49	04:15 22:22	04:53 21:52	05:58 20:39	07:03 19:13	08:09 17:51	08:19 15:46	09:00 15:31
25	08:35 16:24	07:24 17:36	06:07 18:40	05:43 20:48	04:37 21:51	04:16 22:22	04:55 21:50	06:00 20:36	07:06 19:10	07:11 16:49	08:21 15:45	09:00 15:32
26	08:33 16:26	07:21 17:39	06:04 18:42	05:40 20:50	04:35 21:53	04:16 22:22	04:57 21:48	06:02 20:34	07:08 19:07	07:14 16:46	08:23 15:43	09:01 15:33
27	08:31 16:28	07:19 17:41	06:02 18:44	05:38 20:53	04:34 21:55	04:17 22:22	04:59 21:46	06:04 20:31	07:10 19:05	07:16 16:44	08:25 15:42	09:01 15:34
28	08:29 16:30	07:16 17:43	05:59 18:46	05:35 20:55	04:32 21:56	04:17 22:21	05:01 21:44	06:06 20:28	07:12 19:02	07:18 16:41	08:27 15:41	09:01 15:34
29	08:27 16:33		05:56 19:48	05:32 20:57	04:31 21:58	04:18 22:21	05:03 21:42	06:08 20:26	07:14 18:59	07:21 16:39	08:29 15:39	09:01 15:35
30	08:25 16:35		05:53 19:51	05:30 20:59	04:29 22:00	04:19 22:21	05:05 21:40	06:10 20:23	07:16 18:56	07:23 16:37	08:31 15:38	09:01 15:36
31	08:23 16:37		05:50 19:53		04:28 22:01		05:07 21:38	06:13 20:20		07:25 16:34		09:01 15:38
Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Poruka iela 15 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (739)
 Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:28 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
2	09:00 15:40	08:19 16:42	07:11 17:48	06:45 19:57	05:25 21:04	04:25 22:04	04:20 22:20	05:11 21:33	06:17 20:15	07:21 18:51	07:30 16:29	08:35 15:36
3	09:00 15:42	08:17 16:44	07:08 17:50	06:42 19:59	05:23 21:06	04:24 22:06	04:21 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:37 15:35
4	08:59 15:43	08:15 16:47	07:05 17:53	06:39 20:02	05:20 21:08	04:23 22:07	04:22 22:18	05:15 21:29	06:21 20:09	07:25 18:45	07:34 16:25	08:38 15:34
5	08:59 15:45	08:13 16:49	07:03 17:55	06:37 20:04	05:18 21:10	04:22 22:09	04:23 22:18	05:17 21:26	06:23 20:06	07:27 18:42	07:37 16:23	08:40 15:33
6	08:58 15:46	08:10 16:52	07:00 17:57	06:34 20:06	05:15 21:12	04:21 22:10	04:25 22:17	05:19 21:24	06:25 20:04	07:29 18:39	07:39 16:20	08:42 15:32
7	08:58 15:48	08:08 16:54	06:57 17:59	06:31 20:08	05:13 21:15	04:20 22:11	04:26 22:16	05:21 21:22	06:27 20:01	07:31 18:37	07:41 16:18	08:43 15:32
8	08:57 15:49	08:06 16:56	06:55 18:02	06:28 20:10	05:11 21:17	04:19 22:12	04:27 22:15	05:23 21:20	06:30 19:58	07:34 18:34	07:44 16:16	08:45 15:31
9	08:56 15:51	08:04 16:59	06:52 18:04	06:25 20:13	05:09 21:19	04:18 22:13	04:28 22:14	05:26 21:17	06:32 19:55	07:36 18:31	07:46 16:14	08:46 15:30
10	08:55 15:53	08:01 17:01	06:49 18:06	06:23 20:15	05:06 21:21	04:18 22:14	04:30 22:13	05:28 21:15	06:34 19:52	07:38 18:28	07:48 16:12	08:48 15:30
11	08:54 15:55	07:59 17:03	06:46 18:08	06:20 20:17	05:04 21:23	04:17 22:15	04:31 22:12	05:30 21:12	06:36 19:50	07:40 18:26	07:51 16:10	08:49 15:30
12	08:53 15:56	07:57 17:06	06:44 18:11	06:17 20:19	05:02 21:25	04:16 22:16	04:33 22:10	05:32 21:10	06:38 19:47	07:42 18:23	07:53 16:07	08:50 15:29
13	08:52 15:58	07:54 17:08	06:41 18:13	06:14 20:22	05:00 21:27	04:16 22:17	04:34 22:09	05:34 21:07	06:40 19:44	07:45 18:20	07:55 16:05	08:51 15:29
14	08:51 16:00	07:52 17:11	06:38 18:15	06:12 20:24	04:58 21:29	04:16 22:18	04:36 22:08	05:36 21:05	06:42 19:41	07:47 18:18	07:57 16:03	08:53 15:29
15	08:50 16:02	07:49 17:13	06:35 18:17	06:09 20:26	04:56 21:32	04:15 22:19	04:37 22:06	05:38 21:02	06:44 19:38	07:49 18:15	08:00 16:02	08:54 15:29
16	08:48 16:04	07:47 17:15	06:32 18:20	06:06 20:28	04:53 21:34	04:15 22:19	04:39 22:05	05:41 21:00	06:46 19:35	07:51 18:12	08:02 16:00	08:55 15:29
17	08:47 16:06	07:44 17:18	06:30 18:22	06:04 20:30	04:51 21:36	04:15 22:20	04:40 22:03	05:43 20:57	06:49 19:33	07:53 18:10	08:04 15:58	08:56 15:29
18	08:46 16:08	07:42 17:20	06:27 18:24	06:01 20:33	04:49 21:38	04:15 22:20	04:42 22:02	05:45 20:55	06:51 19:30	07:56 18:07	08:06 15:56	08:56 15:29
19	08:44 16:10	07:39 17:22	06:24 18:26	05:58 20:35	04:48 21:40	04:15 22:21	04:44 22:00	05:47 20:52	06:53 19:27	07:58 18:04	08:09 15:54	08:57 15:29
20	08:43 16:13	07:37 17:25	06:21 18:29	05:56 20:37	04:46 21:42	04:15 22:21	04:46 21:59	05:49 20:50	06:55 19:24	08:00 18:02	08:11 15:52	08:58 15:29
21	08:41 16:15	07:34 17:27	06:18 18:31	05:53 20:39	04:44 21:44	04:15 22:22	04:47 21:57	05:51 20:47	06:57 19:21	08:02 17:59	08:13 15:51	08:59 15:30
22	08:40 16:17	07:32 17:29	06:16 18:33	05:50 20:41	04:42 21:45	04:15 22:22	04:49 21:55	05:53 20:44	06:59 19:19	08:05 17:57	08:15 15:49	08:59 15:30
23	08:38 16:19	07:29 17:32	06:13 18:35	05:48 20:44	04:40 21:47	04:15 22:22	04:51 21:53	05:55 20:42	07:01 19:16	08:07 17:54	08:17 15:48	09:00 15:31
24	08:36 16:21	07:27 17:34	06:10 18:37	05:45 20:46	04:38 21:49	04:15 22:22	04:53 21:52	05:58 20:39	07:03 19:13	08:09 17:51	08:19 15:46	09:00 15:31
25	08:34 16:24	07:24 17:36	06:07 18:40	05:43 20:48	04:37 21:51	04:16 22:22	04:55 21:50	06:00 20:36	07:06 19:10	07:11 16:49	08:21 15:45	09:00 15:32
26	08:33 16:26	07:21 17:39	06:04 18:42	05:40 20:50	04:35 21:53	04:16 22:22	04:57 21:48	06:02 20:34	07:08 19:07	07:14 16:46	08:23 15:43	09:01 15:33
27	08:31 16:28	07:19 17:41	06:02 18:44	05:38 20:53	04:34 21:55	04:17 22:22	04:59 21:46	06:04 20:31	07:10 19:05	07:16 16:44	08:25 15:42	09:01 15:34
28	08:29 16:30	07:16 17:43	05:59 18:46	05:35 20:55	04:32 21:56	04:17 22:21	05:01 21:44	06:06 20:28	07:12 19:02	07:18 16:41	08:27 15:41	09:01 15:34
29	08:27 16:33		05:56 19:48	05:32 20:57	04:31 21:58	04:18 22:21	05:03 21:42	06:08 20:26	07:14 18:59	07:21 16:39	08:29 15:39	09:01 15:35
30	08:25 16:35		05:53 19:51	05:30 20:59	04:29 22:00	04:19 22:21	05:05 21:40	06:10 20:23	07:16 18:56	07:23 16:37	08:31 15:38	09:01 15:36
31	08:23 16:37		05:50 19:53		04:28 22:01		05:07 21:38	06:13 20:20		07:25 16:34		09:01 15:38
Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Poruka iela 17 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (618)
 Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:28 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
2	09:00 15:40	08:19 16:42	07:11 17:48	06:45 19:57	05:25 21:04	04:25 22:04	04:20 22:20	05:11 21:33	06:17 20:15	07:21 18:51	07:30 16:29	08:35 15:36
3	09:00 15:42	08:17 16:44	07:08 17:50	06:42 19:59	05:23 21:06	04:24 22:06	04:21 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:37 15:35
4	08:59 15:43	08:15 16:47	07:05 17:53	06:39 20:02	05:20 21:08	04:23 22:07	04:22 22:18	05:15 21:29	06:21 20:09	07:25 18:45	07:34 16:25	08:38 15:34
5	08:59 15:45	08:13 16:49	07:03 17:55	06:37 20:04	05:18 21:10	04:22 22:09	04:23 22:18	05:17 21:26	06:23 20:06	07:27 18:42	07:37 16:23	08:40 15:33
6	08:58 15:46	08:10 16:52	07:00 17:57	06:34 20:06	05:15 21:12	04:21 22:10	04:25 22:17	05:19 21:24	06:25 20:04	07:29 18:39	07:39 16:20	08:42 15:32
7	08:58 15:48	08:08 16:54	06:57 17:59	06:31 20:08	05:13 21:15	04:20 22:11	04:26 22:16	05:21 21:22	06:27 20:01	07:31 18:37	07:41 16:18	08:43 15:32
8	08:57 15:49	08:06 16:56	06:55 18:02	06:28 20:10	05:11 21:17	04:19 22:12	04:27 22:15	05:23 21:19	06:30 19:58	07:34 18:34	07:44 16:16	08:45 15:31
9	08:56 15:51	08:04 16:59	06:52 18:04	06:25 20:13	05:09 21:19	04:18 22:13	04:28 22:14	05:26 21:17	06:32 19:55	07:36 18:31	07:46 16:14	08:46 15:30
10	08:55 15:53	08:01 17:01	06:49 18:06	06:23 20:15	05:06 21:21	04:18 22:14	04:30 22:13	05:28 21:15	06:34 19:52	07:38 18:28	07:48 16:12	08:48 15:30
11	08:54 15:55	07:59 17:03	06:46 18:08	06:20 20:17	05:04 21:23	04:17 22:15	04:31 22:12	05:30 21:12	06:36 19:50	07:40 18:26	07:51 16:10	08:49 15:30
12	08:53 15:56	07:57 17:06	06:44 18:11	06:17 20:19	05:02 21:25	04:16 22:16	04:33 22:10	05:32 21:10	06:38 19:47	07:42 18:23	07:53 16:07	08:50 15:29
13	08:52 15:58	07:54 17:08	06:41 18:13	06:14 20:22	05:00 21:27	04:16 22:17	04:34 22:09	05:34 21:07	06:40 19:44	07:45 18:20	07:55 16:05	08:51 15:29
14	08:51 16:00	07:52 17:11	06:38 18:15	06:12 20:24	04:58 21:29	04:16 22:18	04:36 22:08	05:36 21:05	06:42 19:41	07:47 18:18	07:57 16:03	08:53 15:29
15	08:50 16:02	07:49 17:13	06:35 18:17	06:09 20:26	04:56 21:32	04:15 22:19	04:37 22:06	05:38 21:02	06:44 19:38	07:49 18:15	08:00 16:02	08:54 15:29
16	08:48 16:04	07:47 17:15	06:32 18:20	06:06 20:28	04:53 21:34	04:15 22:19	04:39 22:05	05:41 21:00	06:46 19:35	07:51 18:12	08:02 16:00	08:55 15:29
17	08:47 16:06	07:44 17:18	06:30 18:22	06:04 20:30	04:51 21:36	04:15 22:20	04:40 22:03	05:43 20:57	06:49 19:33	07:53 18:10	08:04 15:58	08:56 15:29
18	08:46 16:08	07:42 17:20	06:27 18:24	06:01 20:33	04:49 21:38	04:15 22:20	04:42 22:02	05:45 20:55	06:51 19:30	07:56 18:07	08:06 15:56	08:56 15:29
19	08:44 16:10	07:39 17:22	06:24 18:26	05:58 20:35	04:48 21:40	04:15 22:21	04:44 22:00	05:47 20:52	06:53 19:27	07:58 18:04	08:09 15:54	08:57 15:29
20	08:43 16:13	07:37 17:25	06:21 18:29	05:56 20:37	04:46 21:42	04:15 22:21	04:46 21:59	05:49 20:50	06:55 19:24	08:00 18:02	08:11 15:52	08:58 15:29
21	08:41 16:15	07:34 17:27	06:18 18:31	05:53 20:39	04:44 21:44	04:15 22:22	04:47 21:57	05:51 20:47	06:57 19:21	08:02 17:59	08:13 15:51	08:59 15:30
22	08:40 16:17	07:32 17:29	06:16 18:33	05:50 20:41	04:42 21:45	04:15 22:22	04:49 21:55	05:53 20:44	06:59 19:19	08:05 17:57	08:15 15:49	08:59 15:30
23	08:38 16:19	07:29 17:32	06:13 18:35	05:48 20:44	04:40 21:47	04:15 22:22	04:51 21:53	05:55 20:42	07:01 19:16	08:07 17:54	08:17 15:48	09:00 15:31
24	08:36 16:21	07:27 17:34	06:10 18:37	05:45 20:46	04:38 21:49	04:15 22:22	04:53 21:52	05:58 20:39	07:03 19:13	08:09 17:51	08:19 15:46	09:00 15:31
25	08:34 16:24	07:24 17:36	06:07 18:40	05:43 20:48	04:37 21:51	04:16 22:22	04:55 21:50	06:00 20:36	07:06 19:10	07:11 16:49	08:21 15:45	09:00 15:32
26	08:33 16:26	07:21 17:39	06:04 18:42	05:40 20:50	04:35 21:53	04:16 22:22	04:57 21:48	06:02 20:34	07:08 19:07	07:14 16:46	08:23 15:43	09:01 15:33
27	08:31 16:28	07:19 17:41	06:02 18:44	05:38 20:53	04:34 21:55	04:17 22:22	04:59 21:46	06:04 20:31	07:10 19:05	07:16 16:44	08:25 15:42	09:01 15:34
28	08:29 16:30	07:16 17:43	05:59 18:46	05:35 20:55	04:32 21:56	04:17 22:21	05:01 21:44	06:06 20:28	07:12 19:02	07:18 16:41	08:27 15:41	09:01 15:34
29	08:27 16:33		05:56 19:48	05:32 20:57	04:31 21:58	04:18 22:21	05:03 21:42	06:08 20:26	07:14 18:59	07:21 16:39	08:29 15:39	09:01 15:35
30	08:25 16:35		05:53 19:51	05:30 20:59	04:29 22:00	04:19 22:21	05:05 21:40	06:10 20:23	07:16 18:56	07:23 16:37	08:31 15:38	09:01 15:36
31	08:23 16:37		05:50 19:53		04:28 22:01		05:07 21:38	06:13 20:20		07:25 16:34		09:01 15:38
Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Poruka iela 19 (94010010924001) - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (609)

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:28 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
2	09:00 15:40	08:19 16:42	07:11 17:48	06:45 19:57	05:25 21:04	04:25 22:04	04:20 22:20	05:11 21:33	06:17 20:15	07:21 18:51	07:30 16:29	08:35 15:36
3	09:00 15:42	08:17 16:44	07:08 17:50	06:42 19:59	05:23 21:06	04:24 22:06	04:21 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:37 15:35
4	08:59 15:43	08:15 16:47	07:05 17:53	06:39 20:02	05:20 21:08	04:23 22:07	04:22 22:18	05:15 21:29	06:21 20:09	07:25 18:45	07:34 16:25	08:38 15:34
5	08:59 15:45	08:13 16:49	07:03 17:55	06:36 20:04	05:18 21:10	04:22 22:09	04:23 22:18	05:17 21:26	06:23 20:06	07:27 18:42	07:37 16:23	08:40 15:33
6	08:58 15:46	08:10 16:52	07:00 17:57	06:34 20:06	05:15 21:12	04:21 22:10	04:25 22:17	05:19 21:24	06:25 20:04	07:29 18:39	07:39 16:20	08:42 15:32
7	08:58 15:48	08:08 16:54	06:57 17:59	06:31 20:08	05:13 21:15	04:20 22:11	04:26 22:16	05:21 21:22	06:27 20:01	07:31 18:37	07:41 16:18	08:43 15:32
8	08:57 15:49	08:06 16:56	06:55 18:02	06:28 20:10	05:11 21:17	04:19 22:12	04:27 22:15	05:23 21:19	06:30 19:58	07:34 18:34	07:44 16:16	08:45 15:31
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10	08:55 15:53	08:01 17:01	06:49 18:06	06:23 20:15	05:06 21:21	04:18 22:14	04:30 22:13	05:28 21:15	06:34 19:52	07:38 18:28	07:48 16:12	08:48 15:30
11	08:54 15:55	07:59 17:03	06:46 18:08	06:20 20:17	05:04 21:23	04:17 22:15	04:31 22:12	05:30 21:12	06:36 19:50	07:40 18:26	07:51 16:10	08:49 15:30
12	08:53 15:56	07:57 17:06	06:44 18:11	06:17 20:19	05:02 21:25	04:16 22:16	04:33 22:10	05:32 21:19	06:38 19:47	07:42 18:23	07:53 16:07	08:50 15:29
13	08:52 15:58	07:54 17:08	06:41 18:13	06:14 20:22	05:00 21:27	04:16 22:17	04:34 22:09	05:34 21:07	06:40 19:44	07:45 18:20	07:55 16:05	08:51 15:29
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16	08:48 16:04	07:47 17:15	06:32 18:20	06:06 20:28	04:53 21:34	04:15 22:19	04:39 22:05	05:41 21:00	06:46 19:35	07:51 18:12	08:02 16:00	08:55 15:29
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19	08:44 16:10	07:39 17:22	06:24 18:26	05:58 20:35	04:48 21:40	04:15 22:21	04:44 22:00	05:47 20:52	06:53 19:27	07:58 18:04	08:09 15:54	08:57 15:29
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22	08:40 16:17	07:32 17:29	06:16 18:33	05:50 20:41	04:42 21:45	04:15 22:22	04:49 21:55	05:53 20:44	06:59 19:19	08:05 17:57	08:15 15:49	08:59 15:30
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24	08:36 16:21	07:27 17:34	06:10 18:37	05:45 20:46	04:38 21:49	04:15 22:22	04:53 21:52	05:58 20:39	07:03 19:13	08:09 17:51	08:19 15:46	09:00 15:31
25	08:34 16:24	07:24 17:36	06:07 18:40	05:43 20:48	04:37 21:51	04:16 22:22	04:55 21:50	06:00 20:36	07:06 19:10	07:11 16:49	08:21 15:45	09:00 15:32
26	08:33 16:26	07:21 17:39	06:04 18:42	05:40 20:50	04:35 21:53	04:16 22:22	04:57 21:48	06:02 20:34	07:08 19:07	07:14 16:46	08:23 15:43	09:01 15:33
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28	08:29 16:30	07:16 17:43	05:59 18:46	05:35 20:55	04:32 21:56	04:17 22:21	05:01 21:44	06:06 20:28	07:12 19:02	07:18 16:41	08:27 15:41	09:01 15:34
29	08:27 16:33		05:56 19:48	05:32 20:57	04:31 21:58	04:18 22:21	05:03 21:42	06:08 20:26	07:14 18:59	07:21 16:39	08:29 15:39	09:01 15:35
30	08:25 16:35		05:53 19:51	05:30 20:59	04:29 22:00	04:19 22:21	05:05 21:40	06:10 20:23	07:16 18:56	07:23 16:37	08:31 15:38	09:01 15:36
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Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Poruka iela 19 (94010010924003) - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (610)

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:28 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
2	09:00 15:40	08:19 16:42	07:11 17:48	06:45 19:57	05:25 21:04	04:25 22:04	04:20 22:20	05:11 21:33	06:17 20:15	07:21 18:51	07:30 16:29	08:35 15:36
3	09:00 15:42	08:17 16:44	07:08 17:50	06:42 19:59	05:23 21:06	04:24 22:06	04:21 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:37 15:35
4	08:59 15:43	08:15 16:47	07:05 17:53	06:39 20:02	05:20 21:08	04:23 22:07	04:22 22:18	05:15 21:29	06:21 20:09	07:25 18:45	07:34 16:25	08:38 15:34
5	08:59 15:45	08:13 16:49	07:03 17:55	06:36 20:04	05:18 21:10	04:22 22:09	04:23 22:18	05:17 21:26	06:23 20:06	07:27 18:42	07:37 16:23	08:40 15:33
6	08:58 15:46	08:10 16:52	07:00 17:57	06:34 20:06	05:15 21:12	04:21 22:10	04:25 22:17	05:19 21:24	06:25 20:04	07:29 18:39	07:39 16:20	08:42 15:32
7	08:58 15:48	08:08 16:54	06:57 17:59	06:31 20:08	05:13 21:15	04:20 22:11	04:26 22:16	05:21 21:22	06:27 20:01	07:31 18:37	07:41 16:18	08:43 15:32
8	08:57 15:49	08:06 16:56	06:55 18:02	06:28 20:10	05:11 21:17	04:19 22:12	04:27 22:15	05:23 21:19	06:30 19:58	07:34 18:34	07:44 16:16	08:45 15:31
9	08:56 15:51	08:04 16:59	06:52 18:04	06:25 20:13	05:09 21:19	04:18 22:13	04:28 22:14	05:26 21:17	06:32 19:55	07:36 18:31	07:46 16:14	08:46 15:30
10	08:55 15:53	08:01 17:01	06:49 18:06	06:23 20:15	05:06 21:21	04:18 22:14	04:30 22:13	05:28 21:15	06:34 19:52	07:38 18:28	07:48 16:12	08:48 15:30
11	08:54 15:55	07:59 17:03	06:46 18:08	06:20 20:17	05:04 21:23	04:17 22:15	04:31 22:12	05:30 21:12	06:36 19:50	07:40 18:26	07:51 16:10	08:49 15:30
12	08:53 15:56	07:57 17:06	06:44 18:11	06:17 20:19	05:02 21:25	04:16 22:16	04:33 22:10	05:32 21:19	06:38 19:47	07:42 18:23	07:53 16:07	08:50 15:29
13	08:52 15:58	07:54 17:08	06:41 18:13	06:14 20:22	05:00 21:27	04:16 22:17	04:34 22:09	05:34 21:07	06:40 19:44	07:45 18:20	07:55 16:05	08:51 15:29
14	08:51 16:00	07:52 17:11	06:38 18:15	06:12 20:24	04:58 21:29	04:16 22:18	04:36 22:08	05:36 21:05	06:42 19:41	07:47 18:18	07:57 16:03	08:53 15:29
15	08:50 16:02	07:49 17:13	06:35 18:17	06:09 20:26	04:56 21:32	04:15 22:19	04:37 22:06	05:38 21:02	06:44 19:38	07:49 18:15	08:00 16:02	08:54 15:29
16	08:48 16:04	07:47 17:15	06:32 18:20	06:06 20:28	04:53 21:34	04:15 22:19	04:39 22:05	05:41 21:00	06:46 19:35	07:51 18:12	08:02 16:00	08:55 15:29
17	08:47 16:06	07:44 17:18	06:30 18:22	06:04 20:30	04:51 21:36	04:15 22:20	04:40 22:03	05:43 20:57	06:49 19:33	07:53 18:10	08:04 15:58	08:56 15:29
18	08:46 16:08	07:42 17:20	06:27 18:24	06:01 20:33	04:49 21:38	04:15 22:20	04:42 22:02	05:45 20:55	06:51 19:30	07:56 18:07	08:06 15:56	08:56 15:29
19	08:44 16:10	07:39 17:22	06:24 18:26	05:58 20:35	04:48 21:40	04:15 22:21	04:44 22:00	05:47 20:52	06:53 19:27	07:58 18:04	08:09 15:54	08:57 15:29
20	08:43 16:13	07:37 17:25	06:21 18:29	05:56 20:37	04:46 21:42	04:15 22:21	04:46 21:59	05:49 20:50	06:55 19:24	08:00 18:02	08:11 15:52	08:58 15:29
21	08:41 16:15	07:34 17:27	06:18 18:31	05:53 20:39	04:44 21:44	04:15 22:22	04:47 21:57	05:51 20:47	06:57 19:21	08:02 17:59	08:13 15:51	08:59 15:30
22	08:40 16:17	07:32 17:29	06:16 18:33	05:50 20:41	04:42 21:45	04:15 22:22	04:49 21:55	05:53 20:44	06:59 19:19	08:05 17:57	08:15 15:49	08:59 15:30
23	08:38 16:19	07:29 17:32	06:13 18:35	05:48 20:44	04:40 21:47	04:15 22:22	04:51 21:53	05:55 20:42	07:01 19:16	08:07 17:54	08:17 15:48	09:00 15:31
24	08:36 16:21	07:27 17:34	06:10 18:37	05:45 20:46	04:38 21:49	04:15 22:22	04:53 21:52	05:58 20:39	07:03 19:13	08:09 17:51	08:19 15:46	09:00 15:31
25	08:34 16:24	07:24 17:36	06:07 18:40	05:43 20:48	04:37 21:51	04:16 22:22	04:55 21:50	06:00 20:36	07:06 19:10	07:11 16:49	08:21 15:45	09:00 15:32
26	08:33 16:26	07:21 17:39	06:04 18:42	05:40 20:50	04:35 21:53	04:16 22:22	04:57 21:48	06:02 20:34	07:08 19:07	07:14 16:46	08:23 15:43	09:01 15:33
27	08:31 16:28	07:19 17:41	06:02 18:44	05:38 20:53	04:34 21:55	04:17 22:22	04:59 21:46	06:04 20:31	07:10 19:05	07:16 16:44	08:25 15:42	09:01 15:34
28	08:29 16:30	07:16 17:43	05:59 18:46	05:35 20:55	04:32 21:56	04:17 22:21	05:01 21:44	06:06 20:28	07:12 19:02	07:18 16:41	08:27 15:41	09:01 15:34
29	08:27 16:33		05:56 19:48	05:32 20:57	04:31 21:58	04:18 22:21	05:03 21:42	06:08 20:26	07:14 18:59	07:21 16:39	08:29 15:39	09:01 15:35
30	08:25 16:35		05:53 19:51	05:30 20:59	04:29 22:00	04:19 22:21	05:05 21:40	06:10 20:23	07:16 18:56	07:23 16:37	08:31 15:38	09:01 15:37
31	08:23 16:37		05:50 19:53		04:28 22:01		05:07 21:38	06:13 20:20		07:25 16:34		09:01 15:38
Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Poruka iela 21 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (638)
Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:28 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
2	09:00 15:40	08:19 16:42	07:11 17:48	06:45 19:57	05:25 21:04	04:25 22:04	04:20 22:20	05:11 21:33	06:17 20:15	07:21 18:51	07:30 16:29	08:35 15:36
3	09:00 15:42	08:17 16:44	07:08 17:50	06:42 19:59	05:23 21:06	04:24 22:06	04:21 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:37 15:35
4	08:59 15:43	08:15 16:47	07:05 17:53	06:39 20:02	05:20 21:08	04:23 22:07	04:22 22:18	05:15 21:29	06:21 20:09	07:25 18:45	07:34 16:25	08:38 15:34
5	08:59 15:45	08:13 16:49	07:03 17:55	06:36 20:04	05:18 21:10	04:22 22:09	04:23 22:18	05:17 21:26	06:23 20:06	07:27 18:42	07:37 16:23	08:40 15:33
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7	08:58 15:48	08:08 16:54	06:57 17:59	06:31 20:08	05:13 21:15	04:20 22:11	04:26 22:16	05:21 21:22	06:27 20:01	07:31 18:37	07:41 16:18	08:43 15:32
8	08:57 15:49	08:06 16:56	06:55 18:02	06:28 20:10	05:11 21:17	04:19 22:12	04:27 22:15	05:23 21:19	06:30 19:58	07:34 18:34	07:44 16:16	08:45 15:31
9	08:56 15:51	08:04 16:59	06:52 18:04	06:25 20:13	05:09 21:19	04:18 22:13	04:28 22:14	05:26 21:17	06:32 19:55	07:36 18:31	07:46 16:14	08:46 15:30
10	08:55 15:53	08:01 17:01	06:49 18:06	06:23 20:15	05:06 21:21	04:18 22:14	04:30 22:13	05:28 21:15	06:34 19:52	07:38 18:28	07:48 16:12	08:48 15:30
11	08:54 15:55	07:59 17:03	06:46 18:08	06:20 20:17	05:04 21:23	04:17 22:15	04:31 22:12	05:30 21:12	06:36 19:50	07:40 18:26	07:51 16:10	08:49 15:30
12	08:53 15:56	07:57 17:06	06:44 18:11	06:17 20:19	05:02 21:25	04:16 22:16	04:33 22:10	05:32 21:10	06:38 19:47	07:42 18:23	07:53 16:07	08:50 15:29
13	08:52 15:58	07:54 17:08	06:41 18:13	06:14 20:22	05:00 21:27	04:16 22:17	04:34 22:09	05:34 21:07	06:40 19:44	07:44 18:20	07:55 16:05	08:51 15:29
14	08:51 16:00	07:52 17:11	06:38 18:15	06:12 20:24	04:58 21:29	04:16 22:18	04:36 22:08	05:36 21:05	06:42 19:41	07:47 18:18	07:57 16:03	08:53 15:29
15	08:50 16:02	07:49 17:13	06:35 18:17	06:09 20:26	04:56 21:32	04:15 22:19	04:37 22:06	05:38 21:02	06:44 19:38	07:49 18:15	08:00 16:02	08:54 15:29
16	08:48 16:04	07:47 17:15	06:32 18:20	06:06 20:28	04:53 21:34	04:15 22:19	04:39 22:05	05:41 21:00	06:46 19:35	07:51 18:12	08:02 16:00	08:55 15:29
17	08:47 16:06	07:44 17:18	06:30 18:22	06:04 20:30	04:51 21:36	04:15 22:20	04:40 22:03	05:43 20:57	06:49 19:33	07:53 18:10	08:04 15:58	08:56 15:29
18	08:46 16:08	07:42 17:20	06:27 18:24	06:01 20:33	04:49 21:38	04:15 22:20	04:42 22:02	05:45 20:55	06:51 19:30	07:56 18:07	08:06 15:56	08:56 15:29
19	08:44 16:10	07:39 17:22	06:24 18:26	05:58 20:35	04:48 21:40	04:15 22:21	04:44 22:00	05:47 20:52	06:53 19:27	07:58 18:04	08:09 15:54	08:57 15:29
20	08:43 16:13	07:37 17:25	06:21 18:29	05:56 20:37	04:46 21:42	04:15 22:21	04:46 21:59	05:49 20:50	06:55 19:24	08:00 18:02	08:11 15:52	08:58 15:29
21	08:41 16:15	07:34 17:27	06:18 18:31	05:53 20:39	04:44 21:44	04:15 22:22	04:47 21:57	05:51 20:47	06:57 19:21	08:02 17:59	08:13 15:51	08:59 15:30
22	08:40 16:17	07:32 17:29	06:16 18:33	05:50 20:41	04:42 21:45	04:15 22:22	04:49 21:55	05:53 20:44	06:59 19:19	08:05 17:57	08:15 15:49	08:59 15:30
23	08:38 16:19	07:29 17:32	06:13 18:35	05:48 20:44	04:40 21:47	04:15 22:22	04:51 21:53	05:55 20:42	07:01 19:16	08:07 17:54	08:17 15:48	09:00 15:31
24	08:36 16:21	07:27 17:34	06:10 18:37	05:45 20:46	04:38 21:49	04:15 22:22	04:53 21:52	05:58 20:39	07:03 19:13	08:09 17:51	08:19 15:46	09:00 15:31
25	08:34 16:24	07:24 17:36	06:07 18:40	05:43 20:48	04:37 21:51	04:16 22:22	04:55 21:50	06:00 20:36	07:06 19:10	07:11 16:49	08:21 15:45	09:00 15:32
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27	08:31 16:28	07:19 17:41	06:02 18:44	05:38 20:53	04:34 21:55	04:17 22:22	04:59 21:46	06:04 20:31	07:10 19:04	07:16 16:44	08:25 15:42	09:01 15:34
28	08:29 16:30	07:16 17:43	05:59 18:46	05:35 20:55	04:32 21:56	04:17 22:21	05:01 21:44	06:06 20:28	07:12 19:02	07:18 16:41	08:27 15:41	09:01 15:34
29	08:27 16:33		05:56 19:48	05:32 20:57	04:31 21:58	04:18 22:21	05:03 21:42	06:08 20:26	07:14 18:59	07:21 16:39	08:29 15:39	09:01 15:35
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31	08:23 16:37		05:50 19:53		04:28 22:01		05:07 21:38	06:13 20:20		07:25 16:34		09:01 15:38
Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment
 Vilandes 3-6
 LV-1010 Riga
 0037167242411
 Baiba / baiba.ozolina@environment.lv
 Calculated:
 15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Poruka iela 21A - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (630)
 Sunshine probability S (Average daily sunshine hours) []

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
 0.80 1.82 4.75 6.09 9.67 10.05 8.16 7.72 5.94 2.93 0.63 0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:28 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
2	09:00 15:40	08:19 16:42	07:11 17:48	06:45 19:57	05:25 21:04	04:25 22:04	04:20 22:20	05:11 21:33	06:17 20:15	07:21 18:51	07:30 16:29	08:35 15:36
3	09:00 15:42	08:17 16:44	07:08 17:50	06:42 19:59	05:23 21:06	04:24 22:06	04:21 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:37 15:35
4	08:59 15:43	08:15 16:47	07:05 17:53	06:39 20:02	05:20 21:08	04:23 22:07	04:22 22:18	05:15 21:29	06:21 20:09	07:25 18:45	07:34 16:25	08:38 15:34
5	08:59 15:45	08:13 16:49	07:03 17:55	06:36 20:04	05:18 21:10	04:22 22:09	04:23 22:18	05:17 21:26	06:23 20:06	07:27 18:42	07:37 16:23	08:40 15:33
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11	08:54 15:55	07:59 17:03	06:46 18:08	06:20 20:17	05:04 21:23	04:17 22:15	04:31 22:12	05:30 21:12	06:36 19:50	07:40 18:26	07:51 16:10	08:49 15:30
12	08:53 15:56	07:57 17:06	06:44 18:11	06:17 20:19	05:02 21:25	04:16 22:16	04:33 22:10	05:32 21:19	06:38 19:47	07:42 18:23	07:53 16:07	08:50 15:29
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14	08:51 16:00	07:52 17:11	06:38 18:15	06:12 20:24	04:58 21:29	04:16 22:18	04:36 22:08	05:36 21:05	06:42 19:41	07:47 18:18	07:57 16:03	08:53 15:29
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17	08:47 16:06	07:44 17:18	06:30 18:22	06:04 20:30	04:51 21:36	04:15 22:20	04:40 22:03	05:43 20:57	06:49 19:33	07:53 18:10	08:04 15:58	08:56 15:29
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20	08:43 16:13	07:37 17:25	06:21 18:29	05:56 20:37	04:46 21:42	04:15 22:21	04:46 21:59	05:49 20:50	06:55 19:24	08:00 18:02	08:11 15:52	08:58 15:29
21	08:41 16:15	07:34 17:27	06:18 18:31	05:53 20:39	04:44 21:44	04:15 22:22	04:47 21:57	05:51 20:47	06:57 19:21	08:02 17:59	08:13 15:51	08:59 15:30
22	08:40 16:17	07:32 17:29	06:16 18:33	05:50 20:41	04:42 21:45	04:15 22:22	04:49 21:55	05:53 20:44	06:59 19:19	08:05 17:57	08:15 15:49	08:59 15:30
23	08:38 16:19	07:29 17:32	06:13 18:35	05:48 20:44	04:40 21:47	04:15 22:22	04:51 21:53	05:55 20:42	07:01 19:16	08:07 17:54	08:17 15:48	09:00 15:31
24	08:36 16:21	07:27 17:34	06:10 18:37	05:45 20:46	04:38 21:49	04:15 22:22	04:53 21:52	05:58 20:39	07:03 19:13	08:09 17:51	08:19 15:46	09:00 15:31
25	08:34 16:24	07:24 17:36	06:07 18:40	05:43 20:48	04:37 21:51	04:16 22:22	04:55 21:50	06:00 20:36	07:06 19:10	07:11 16:49	08:21 15:45	09:00 15:32
26	08:33 16:26	07:21 17:39	06:04 18:42	05:40 20:50	04:35 21:53	04:16 22:22	04:57 21:48	06:02 20:34	07:08 19:07	07:14 16:46	08:23 15:43	09:01 15:33
27	08:31 16:28	07:19 17:41	06:02 18:44	05:38 20:53	04:34 21:55	04:17 22:22	04:59 21:46	06:04 20:31	07:10 19:04	07:16 16:44	08:25 15:42	09:01 15:34
28	08:29 16:30	07:16 17:43	05:59 18:46	05:35 20:55	04:32 21:56	04:17 22:21	05:01 21:44	06:06 20:28	07:12 19:02	07:18 16:41	08:27 15:41	09:01 15:34
29	08:27 16:33		05:56 19:48	05:32 20:57	04:31 21:58	04:18 22:21	05:03 21:42	06:08 20:26	07:14 18:59	07:21 16:39	08:29 15:39	09:01 15:35
30	08:25 16:35		05:53 19:51	05:30 20:59	04:29 22:00	04:19 22:21	05:05 21:40	06:10 20:23	07:16 18:56	07:23 16:37	08:31 15:38	09:01 15:36
31	08:23 16:37		05:50 19:53		04:28 22:01		05:07 21:38	06:13 20:20		07:25 16:34		09:01 15:38
Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Last time (hh:mm) with flicker	(WTG causing flicker last time)
	Minutes with flicker		

Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Poruka iela 21B - Shadow Receptor: 1.0×1.0 Azimuth: 3.1° Slope: 90.0° (613)
 Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:27 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
2	09:00 15:40	08:19 16:42	07:11 17:48	06:45 19:57	05:25 21:04	04:25 22:04	04:20 22:20	05:11 21:33	06:17 20:15	07:21 18:51	07:30 16:29	08:35 15:36
3	09:00 15:42	08:17 16:44	07:08 17:50	06:42 19:59	05:23 21:06	04:24 22:06	04:21 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:37 15:35
4	08:59 15:43	08:15 16:47	07:05 17:53	06:39 20:02	05:20 21:08	04:23 22:07	04:22 22:18	05:15 21:29	06:21 20:09	07:25 18:45	07:34 16:25	08:38 15:34
5	08:59 15:45	08:13 16:49	07:03 17:55	06:36 20:04	05:18 21:10	04:22 22:09	04:23 22:18	05:17 21:26	06:23 20:06	07:27 18:42	07:37 16:23	08:40 15:33
6	08:58 15:46	08:10 16:52	07:00 17:57	06:34 20:06	05:15 21:12	04:21 22:10	04:25 22:17	05:19 21:24	06:25 20:04	07:29 18:39	07:39 16:20	08:42 15:32
7	08:58 15:48	08:08 16:54	06:57 17:59	06:31 20:08	05:13 21:15	04:20 22:11	04:26 22:16	05:21 21:22	06:27 20:01	07:31 18:37	07:41 16:18	08:43 15:32
8	08:57 15:49	08:06 16:56	06:55 18:02	06:28 20:10	05:11 21:17	04:19 22:12	04:27 22:15	05:23 21:19	06:30 19:58	07:34 18:34	07:44 16:16	08:45 15:31
9	08:56 15:51	08:04 16:59	06:52 18:04	06:25 20:13	05:09 21:19	04:18 22:13	04:28 22:14	05:26 21:17	06:32 19:55	07:36 18:31	07:46 16:14	08:46 15:30
10	08:55 15:53	08:01 17:01	06:49 18:06	06:23 20:15	05:06 21:21	04:18 22:14	04:30 22:13	05:28 21:15	06:34 19:52	07:38 18:28	07:48 16:12	08:48 15:30
11	08:54 15:55	07:59 17:03	06:46 18:08	06:20 20:17	05:04 21:23	04:17 22:15	04:31 22:12	05:30 21:12	06:36 19:50	07:40 18:26	07:51 16:10	08:49 15:30
12	08:53 15:56	07:57 17:06	06:44 18:11	06:17 20:19	05:02 21:25	04:16 22:16	04:33 22:10	05:32 21:19	06:38 19:47	07:42 18:23	07:53 16:07	08:50 15:29
13	08:52 15:58	07:54 17:08	06:41 18:13	06:14 20:22	05:00 21:27	04:16 22:17	04:34 22:09	05:34 21:07	06:40 19:44	07:44 18:20	07:55 16:05	08:51 15:29
14	08:51 16:00	07:52 17:11	06:38 18:15	06:12 20:24	04:58 21:29	04:16 22:18	04:36 22:08	05:36 21:05	06:42 19:41	07:47 18:18	07:57 16:03	08:53 15:29
15	08:50 16:02	07:49 17:13	06:35 18:17	06:09 20:26	04:56 21:32	04:15 22:19	04:37 22:06	05:38 21:02	06:44 19:38	07:49 18:15	08:00 16:02	08:54 15:29
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17	08:47 16:06	07:44 17:18	06:30 18:22	06:04 20:30	04:51 21:36	04:15 22:20	04:40 22:03	05:43 20:57	06:49 19:33	07:53 18:10	08:04 15:58	08:56 15:29
18	08:46 16:08	07:42 17:20	06:27 18:24	06:01 20:33	04:49 21:38	04:15 22:20	04:42 22:02	05:45 20:55	06:51 19:30	07:56 18:07	08:06 15:56	08:56 15:29
19	08:44 16:10	07:39 17:22	06:24 18:26	05:58 20:35	04:48 21:40	04:15 22:21	04:44 22:00	05:47 20:52	06:53 19:27	07:58 18:04	08:09 15:54	08:57 15:29
20	08:43 16:13	07:37 17:25	06:21 18:29	05:56 20:37	04:46 21:42	04:15 22:21	04:46 21:59	05:49 20:50	06:55 19:24	08:00 18:02	08:11 15:52	08:58 15:29
21	08:41 16:15	07:34 17:27	06:18 18:31	05:53 20:39	04:44 21:44	04:15 22:22	04:47 21:57	05:51 20:47	06:57 19:21	08:02 17:59	08:13 15:51	08:59 15:30
22	08:40 16:17	07:32 17:29	06:16 18:33	05:50 20:41	04:42 21:45	04:15 22:22	04:49 21:55	05:53 20:44	06:59 19:19	08:05 17:57	08:15 15:49	08:59 15:30
23	08:38 16:19	07:29 17:32	06:13 18:35	05:48 20:44	04:40 21:47	04:15 22:22	04:51 21:53	05:55 20:42	07:01 19:16	08:07 17:54	08:17 15:48	09:00 15:31
24	08:36 16:21	07:27 17:34	06:10 18:37	05:45 20:46	04:38 21:49	04:15 22:22	04:53 21:52	05:58 20:39	07:03 19:13	08:09 17:51	08:19 15:46	09:00 15:31
25	08:34 16:24	07:24 17:36	06:07 18:40	05:43 20:48	04:37 21:51	04:16 22:22	04:55 21:50	06:00 20:36	07:06 19:10	07:11 16:49	08:21 15:45	09:00 15:32
26	08:33 16:26	07:21 17:39	06:04 18:42	05:40 20:50	04:35 21:53	04:16 22:22	04:57 21:48	06:02 20:34	07:08 19:07	07:14 16:46	08:23 15:43	09:01 15:33
27	08:31 16:28	07:19 17:41	06:02 18:44	05:38 20:53	04:34 21:55	04:17 22:22	04:59 21:46	06:04 20:31	07:10 19:04	07:16 16:44	08:25 15:42	09:01 15:34
28	08:29 16:30	07:16 17:43	05:59 18:46	05:35 20:55	04:32 21:56	04:17 22:21	05:01 21:44	06:06 20:28	07:12 19:02	07:18 16:41	08:27 15:41	09:01 15:34
29	08:27 16:33		06:56 19:48	05:32 20:57	04:31 21:58	04:18 22:21	05:03 21:42	06:08 20:26	07:14 18:59	07:21 16:39	08:29 15:39	09:01 15:35
30	08:25 16:35		06:53 19:51	05:30 20:59	04:29 22:00	04:19 22:21	05:05 21:40	06:10 20:23	07:16 18:56	07:23 16:37	08:31 15:38	09:01 15:36
31	08:23 16:37		06:50 19:53		04:28 22:01		05:07 21:38	06:13 20:20		07:25 16:34		09:01 15:38
Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Poruka iela 23 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (633)
 Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:27 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
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4	08:59 15:43	08:15 16:47	07:05 17:53	06:39 20:02	05:20 21:08	04:23 22:07	04:22 22:18	05:15 21:29	06:21 20:09	07:25 18:45	07:34 16:25	08:38 15:34
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10	08:55 15:53	08:01 17:01	06:49 18:06	06:23 20:15	05:06 21:21	04:18 22:14	04:30 22:13	05:28 21:15	06:34 19:52	07:38 18:28	07:48 16:12	08:48 15:30
11	08:54 15:55	07:59 17:03	06:46 18:08	06:20 20:17	05:04 21:23	04:17 22:15	04:31 22:12	05:30 21:12	06:36 19:50	07:40 18:26	07:51 16:10	08:49 15:30
12	08:53 15:56	07:57 17:06	06:44 18:11	06:17 20:19	05:02 21:25	04:16 22:16	04:33 22:10	05:32 21:10	06:38 19:47	07:42 18:23	07:53 16:07	08:50 15:29
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14	08:51 16:00	07:52 17:11	06:38 18:15	06:12 20:24	04:58 21:29	04:16 22:18	04:36 22:08	05:36 21:05	06:42 19:41	07:47 18:18	07:57 16:03	08:53 15:29
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Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Poruka iela 23A - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (636)
 Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
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4	08:59 15:43	08:15 16:47	07:05 17:53	06:39 20:02	05:20 21:08	04:23 22:07	04:22 22:18	05:15 21:29	06:21 20:09	07:25 18:45	07:34 16:25	08:38 15:34
5	08:59 15:45	08:13 16:49	07:03 17:55	06:36 20:04	05:18 21:10	04:22 22:08	04:23 22:18	05:17 21:26	06:23 20:06	07:27 18:42	07:37 16:23	08:40 15:33
6	08:58 15:46	08:10 16:52	07:00 17:57	06:34 20:06	05:15 21:12	04:21 22:10	04:25 22:17	05:19 21:24	06:25 20:04	07:29 18:39	07:39 16:20	08:42 15:32
7	08:58 15:48	08:08 16:54	06:57 17:59	06:31 20:08	05:13 21:15	04:20 22:11	04:26 22:16	05:21 21:22	06:27 20:01	07:31 18:37	07:41 16:18	08:43 15:32
8	08:57 15:49	08:06 16:56	06:55 18:02	06:28 20:10	05:11 21:17	04:19 22:12	04:27 22:15	05:23 21:19	06:30 19:58	07:34 18:34	07:44 16:16	08:45 15:31
9	08:56 15:51	08:04 16:59	06:52 18:04	06:25 20:13	05:09 21:19	04:18 22:13	04:28 22:14	05:26 21:17	06:32 19:55	07:36 18:31	07:46 16:14	08:46 15:30
10	08:55 15:53	08:01 17:01	06:49 18:06	06:23 20:15	05:06 21:21	04:18 22:14	04:30 22:13	05:28 21:15	06:34 19:52	07:38 18:28	07:48 16:12	08:48 15:30
11	08:54 15:55	07:59 17:03	06:46 18:08	06:20 20:17	05:04 21:23	04:17 22:15	04:31 22:12	05:30 21:12	06:36 19:50	07:40 18:26	07:51 16:10	08:49 15:30
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31	08:23 16:37		05:50 19:53		04:28 22:01		05:07 21:38	06:13 20:20		07:25 16:34		09:01 15:38
Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Priedulaji - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (442)
Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:00 15:40	08:21 16:40	07:13 17:46	06:48 19:55	05:28 21:01	04:27 22:02	04:20 22:19	05:09 21:35	06:15 20:17	07:18 18:53	07:27 16:32	08:32 15:37
2	09:00 15:41	08:19 16:42	07:11 17:48	06:45 19:57	05:25 21:03	04:26 22:04	04:21 22:19	05:11 21:33	06:17 20:14	07:20 18:50	07:29 16:30	08:34 15:36
3	08:59 15:42	08:16 16:45	07:08 17:50	06:42 19:59	05:23 21:05	04:25 22:05	04:22 22:18	05:13 21:30	06:19 20:12	07:22 18:48	07:32 16:27	08:36 15:35
4	08:59 15:44	08:14 16:47	07:05 17:53	06:39 20:01	05:20 21:08	04:23 22:06	04:23 22:18	05:15 21:28	06:21 20:09	07:25 18:45	07:34 16:25	08:38 15:34
5	08:58 15:45	08:12 16:49	07:02 17:55	06:36 20:04	05:18 21:10	04:22 22:08	04:24 22:17	05:17 21:26	06:23 20:06	07:27 18:42	07:36 16:23	08:39 15:34
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8	08:56 15:50	08:06 16:56	06:54 18:02	06:28 20:10	05:11 21:16	04:20 22:11	04:27 22:14	05:24 21:19	06:30 19:58	07:33 18:34	07:43 16:16	08:44 15:31
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18	08:45 16:09	07:42 17:20	06:27 18:24	06:01 20:32	04:50 21:37	04:15 22:20	04:43 22:01	05:45 20:54	06:51 19:30	07:55 18:07	08:06 15:56	08:56 15:29
19	08:44 16:11	07:39 17:22	06:24 18:26	05:58 20:34	04:48 21:39	04:15 22:20	04:44 22:00	05:47 20:52	06:53 19:27	07:58 18:04	08:08 15:54	08:57 15:29
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31	08:23 16:38		06:50 19:53		04:28 22:01		05:07 21:37	06:13 20:20		07:25 16:34		09:00 15:38
Potential sun hours	228	262	365	429	515	539	538	474	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Pumpura iela 10A - Shadow Receptor: 1.0×1.0 Azimuth: 3.1° Slope: 90.0° (668)
 Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:14 17:46	06:48 19:55	05:28 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
2	09:00 15:40	08:19 16:42	07:11 17:48	06:45 19:57	05:25 21:04	04:25 22:04	04:20 22:20	05:11 21:33	06:17 20:15	07:21 18:51	07:30 16:29	08:35 15:36
3	09:00 15:42	08:17 16:44	07:08 17:50	06:42 19:59	05:23 21:06	04:24 22:06	04:21 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:37 15:35
4	08:59 15:43	08:15 16:47	07:05 17:53	06:39 20:02	05:20 21:08	04:23 22:07	04:22 22:18	05:15 21:29	06:21 20:09	07:25 18:45	07:35 16:25	08:38 15:34
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24	08:36 16:21	07:27 17:34	06:10 18:37	05:45 20:46	04:39 21:49	04:15 22:22	04:53 21:52	05:58 20:39	07:03 19:13	08:09 17:51	08:19 15:46	09:00 15:31
25	08:35 16:24	07:24 17:37	06:07 18:40	05:43 20:48	04:37 21:51	04:16 22:22	04:55 21:50	06:00 20:36	07:06 19:10	07:12 16:49	08:21 15:45	09:00 15:32
26	08:33 16:26	07:21 17:39	06:04 18:42	05:40 20:50	04:35 21:53	04:16 22:22	04:57 21:48	06:02 20:34	07:08 19:07	07:14 16:46	08:23 15:43	09:01 15:33
27	08:31 16:28	07:19 17:41	06:02 18:44	05:38 20:53	04:34 21:55	04:17 22:22	04:59 21:46	06:04 20:31	07:10 19:05	07:16 16:44	08:25 15:42	09:01 15:34
28	08:29 16:30	07:16 17:43	05:59 18:46	05:35 20:55	04:32 21:56	04:17 22:21	05:01 21:44	06:06 20:28	07:12 19:02	07:18 16:42	08:27 15:41	09:01 15:34
29	08:27 16:33		05:56 19:48	05:32 20:57	04:31 21:58	04:18 22:21	05:03 21:42	06:08 20:26	07:14 18:59	07:21 16:39	08:29 15:39	09:01 15:35
30	08:25 16:35		05:53 19:51	05:30 20:59	04:29 22:00	04:19 22:21	05:05 21:40	06:10 20:23	07:16 18:56	07:23 16:37	08:31 15:38	09:01 15:37
31	08:23 16:37		05:50 19:53		04:28 22:01		05:07 21:38	06:13 20:20		07:25 16:34		09:01 15:38
Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Purva iela 5 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (529)
Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) []

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
0.80 1.82 4.75 6.09 9.67 10.05 8.16 7.72 5.94 2.93 0.63 0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:28 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
2	09:00 15:41	08:19 16:42	07:11 17:48	06:45 19:57	05:25 21:04	04:25 22:04	04:21 22:20	05:11 21:33	06:17 20:15	07:21 18:51	07:30 16:30	08:35 15:36
3	09:00 15:42	08:17 16:45	07:08 17:50	06:42 19:59	05:23 21:06	04:24 22:06	04:22 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:37 15:35
4	08:59 15:43	08:15 16:47	07:05 17:53	06:39 20:02	05:20 21:08	04:23 22:07	04:23 22:18	05:15 21:29	06:21 20:09	07:25 18:45	07:34 16:25	08:38 15:34
5	08:59 15:45	08:13 16:49	07:03 17:55	06:37 20:04	05:18 21:10	04:22 22:08	04:24 22:18	05:17 21:26	06:23 20:06	07:27 18:42	07:37 16:23	08:40 15:33
6	08:58 15:46	08:10 16:52	07:00 17:57	06:34 20:06	05:16 21:12	04:21 22:10	04:25 22:17	05:19 21:24	06:25 20:04	07:29 18:39	07:39 16:20	08:42 15:32
7	08:58 15:48	08:08 16:54	06:57 17:59	06:31 20:08	05:13 21:15	04:20 22:11	04:26 22:16	05:21 21:22	06:27 20:01	07:31 18:37	07:41 16:18	08:43 15:32
8	08:57 15:50	08:06 16:56	06:55 18:02	06:28 20:10	05:11 21:17	04:19 22:12	04:27 22:15	05:24 21:19	06:30 19:58	07:34 18:34	07:44 16:16	08:45 15:31
9	08:56 15:51	08:04 16:59	06:52 18:04	06:25 20:13	05:09 21:19	04:19 22:13	04:28 22:14	05:26 21:17	06:32 19:55	07:36 18:31	07:46 16:14	08:46 15:31
10	08:55 15:53	08:01 17:01	06:49 18:06	06:23 20:15	05:06 21:21	04:18 22:14	04:30 22:13	05:28 21:15	06:34 19:52	07:38 18:28	07:48 16:12	08:48 15:30
11	08:54 15:55	07:59 17:04	06:46 18:09	06:20 20:17	05:04 21:23	04:17 22:15	04:31 22:12	05:30 21:12	06:36 19:50	07:40 18:26	07:51 16:10	08:49 15:30
12	08:53 15:57	07:57 17:06	06:44 18:11	06:17 20:19	05:02 21:25	04:17 22:16	04:33 22:10	05:32 21:19	06:38 19:47	07:42 18:23	07:53 16:08	08:50 15:29
13	08:52 15:58	07:54 17:08	06:41 18:13	06:15 20:22	05:00 21:27	04:16 22:17	04:34 22:09	05:34 21:07	06:40 19:44	07:45 18:20	07:55 16:06	08:51 15:29
14	08:51 16:00	07:52 17:11	06:38 18:15	06:12 20:24	04:58 21:29	04:16 22:18	04:36 22:08	05:36 21:05	06:42 19:41	07:47 18:18	07:57 16:04	08:53 15:29
15	08:50 16:02	07:49 17:13	06:35 18:17	06:09 20:26	04:56 21:32	04:15 22:19	04:37 22:06	05:38 21:02	06:44 19:38	07:49 18:15	08:00 16:02	08:54 15:29
16	08:48 16:04	07:47 17:15	06:32 18:20	06:06 20:28	04:54 21:34	04:15 22:19	04:39 22:05	05:41 21:00	06:47 19:36	07:51 18:12	08:02 16:00	08:55 15:29
17	08:47 16:06	07:44 17:18	06:30 18:22	06:04 20:30	04:52 21:36	04:15 22:20	04:41 22:03	05:43 20:57	06:49 19:33	07:53 18:10	08:04 15:58	08:56 15:29
18	08:46 16:08	07:42 17:20	06:27 18:24	06:01 20:33	04:50 21:38	04:15 22:20	04:42 22:02	05:45 20:55	06:51 19:30	07:56 18:07	08:06 15:56	08:56 15:29
19	08:44 16:11	07:39 17:22	06:24 18:26	05:58 20:35	04:48 21:40	04:15 22:21	04:44 22:00	05:47 20:52	06:53 19:27	07:58 18:04	08:09 15:54	08:57 15:29
20	08:43 16:13	07:37 17:25	06:21 18:29	05:56 20:37	04:46 21:42	04:15 22:21	04:46 21:59	05:49 20:50	06:55 19:24	08:00 18:02	08:11 15:53	08:58 15:29
21	08:41 16:15	07:34 17:27	06:18 18:31	05:53 20:39	04:44 21:44	04:15 22:21	04:48 21:57	05:51 20:47	06:57 19:21	08:02 17:59	08:13 15:51	08:59 15:30
22	08:40 16:17	07:32 17:30	06:16 18:33	05:50 20:41	04:42 21:45	04:15 22:22	04:49 21:55	05:53 20:44	06:59 19:19	08:05 17:57	08:15 15:49	08:59 15:30
23	08:38 16:19	07:29 17:32	06:13 18:35	05:48 20:44	04:40 21:47	04:15 22:22	04:51 21:53	05:56 20:42	07:01 19:16	08:07 17:54	08:17 15:48	09:00 15:31
24	08:36 16:21	07:27 17:34	06:10 18:37	05:45 20:46	04:39 21:49	04:15 22:22	04:53 21:52	05:58 20:39	07:03 19:13	08:09 17:52	08:19 15:46	09:00 15:31
25	08:34 16:24	07:24 17:37	06:07 18:40	05:43 20:48	04:37 21:51	04:16 22:22	04:55 21:50	06:00 20:36	07:06 19:10	07:11 16:49	08:21 15:45	09:00 15:32
26	08:33 16:26	07:21 17:39	06:04 18:42	05:40 20:50	04:35 21:53	04:16 22:22	04:57 21:48	06:02 20:34	07:08 19:07	07:14 16:46	08:23 15:43	09:01 15:33
27	08:31 16:28	07:19 17:41	06:02 18:44	05:38 20:53	04:34 21:55	04:17 22:22	04:59 21:46	06:04 20:31	07:10 19:05	07:16 16:44	08:25 15:42	09:01 15:34
28	08:29 16:30	07:16 17:43	05:59 18:46	05:35 20:55	04:32 21:56	04:17 22:21	05:01 21:44	06:06 20:28	07:12 19:02	07:18 16:42	08:27 15:41	09:01 15:35
29	08:27 16:33		05:56 19:48	05:33 20:57	04:31 21:58	04:18 22:21	05:03 21:42	06:08 20:26	07:14 18:59	07:21 16:39	08:29 15:39	09:01 15:36
30	08:25 16:35		05:53 19:51	05:30 20:59	04:29 22:00	04:19 22:21	05:05 21:40	06:11 20:23	07:16 18:56	07:23 16:37	08:31 15:38	09:01 15:37
31	08:23 16:37		05:50 19:53		04:28 22:01		05:07 21:38	06:13 20:20		07:25 16:34		09:01 15:38
Potential sun hours	227	262	365	429	515	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Last time (hh:mm) with flicker	(WTG causing flicker last time)
	Minutes with flicker		

Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Purva iela 7 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (523)
 Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:28 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
2	09:00 15:41	08:19 16:42	07:11 17:48	06:45 19:57	05:25 21:04	04:25 22:04	04:21 22:20	05:11 21:33	06:17 20:15	07:21 18:51	07:30 16:30	08:35 15:36
3	09:00 15:42	08:17 16:45	07:08 17:50	06:42 19:59	05:23 21:06	04:24 22:06	04:21 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:37 15:35
4	08:59 15:43	08:15 16:47	07:05 17:53	06:39 20:02	05:20 21:08	04:23 22:07	04:23 22:18	05:15 21:29	06:21 20:09	07:25 18:45	07:34 16:25	08:38 15:34
5	08:59 15:45	08:13 16:49	07:03 17:55	06:37 20:04	05:18 21:10	04:22 22:08	04:24 22:18	05:17 21:26	06:23 20:06	07:27 18:42	07:37 16:23	08:40 15:33
6	08:58 15:46	08:10 16:52	07:00 17:57	06:34 20:06	05:16 21:12	04:21 22:10	04:25 22:17	05:19 21:24	06:25 20:04	07:29 18:39	07:39 16:20	08:42 15:32
7	08:58 15:48	08:08 16:54	06:57 17:59	06:31 20:08	05:13 21:15	04:20 22:11	04:26 22:16	05:21 21:22	06:27 20:01	07:31 18:37	07:41 16:18	08:43 15:32
8	08:57 15:50	08:06 16:56	06:55 18:02	06:28 20:10	05:11 21:17	04:19 22:12	04:27 22:15	05:24 21:19	06:30 19:58	07:34 18:34	07:44 16:16	08:45 15:31
9	08:56 15:51	08:04 16:59	06:52 18:04	06:25 20:13	05:09 21:19	04:19 22:13	04:28 22:14	05:26 21:17	06:32 19:55	07:36 18:31	07:46 16:14	08:46 15:31
10	08:55 15:53	08:01 17:01	06:49 18:06	06:23 20:15	05:06 21:21	04:18 22:14	04:30 22:13	05:28 21:15	06:34 19:52	07:38 18:28	07:48 16:12	08:48 15:30
11	08:54 15:55	07:59 17:04	06:46 18:09	06:20 20:17	05:04 21:23	04:17 22:15	04:31 22:12	05:30 21:12	06:36 19:50	07:40 18:26	07:51 16:10	08:49 15:30
12	08:53 15:57	07:57 17:06	06:44 18:11	06:17 20:19	05:02 21:25	04:17 22:16	04:33 22:10	05:32 21:19	06:38 19:47	07:42 18:23	07:53 16:08	08:50 15:29
13	08:52 15:58	07:54 17:08	06:41 18:13	06:15 20:22	05:00 21:27	04:16 22:17	04:34 22:09	05:34 21:07	06:40 19:44	07:45 18:20	07:55 16:06	08:51 15:29
14	08:51 16:00	07:52 17:11	06:38 18:15	06:12 20:24	04:58 21:29	04:16 22:18	04:36 22:08	05:36 21:05	06:42 19:41	07:47 18:18	07:57 16:04	08:53 15:29
15	08:50 16:02	07:49 17:13	06:35 18:17	06:09 20:26	04:56 21:32	04:15 22:19	04:37 22:06	05:38 21:02	06:44 19:38	07:49 18:15	08:00 16:02	08:54 15:29
16	08:48 16:04	07:47 17:15	06:32 18:20	06:06 20:28	04:54 21:34	04:15 22:19	04:39 22:05	05:41 21:00	06:46 19:35	07:51 18:12	08:02 16:00	08:55 15:29
17	08:47 16:06	07:44 17:18	06:30 18:22	06:04 20:30	04:52 21:36	04:15 22:20	04:41 22:03	05:43 20:57	06:49 19:33	07:53 18:10	08:04 15:58	08:56 15:29
18	08:46 16:08	07:42 17:20	06:27 18:24	06:01 20:33	04:50 21:38	04:15 22:20	04:42 22:02	05:45 20:55	06:51 19:30	07:56 18:07	08:06 15:56	08:56 15:29
19	08:44 16:11	07:39 17:22	06:24 18:26	05:58 20:35	04:48 21:40	04:15 22:21	04:44 22:00	05:47 20:52	06:53 19:27	07:58 18:04	08:09 15:54	08:57 15:29
20	08:43 16:13	07:37 17:25	06:21 18:29	05:56 20:37	04:46 21:42	04:15 22:21	04:46 21:59	05:49 20:50	06:55 19:24	08:00 18:02	08:11 15:53	08:58 15:29
21	08:41 16:15	07:34 17:27	06:18 18:31	05:53 20:39	04:44 21:44	04:15 22:21	04:48 21:57	05:51 20:47	06:57 19:21	08:02 17:59	08:13 15:51	08:59 15:30
22	08:40 16:17	07:32 17:30	06:16 18:33	05:50 20:41	04:42 21:45	04:15 22:22	04:49 21:55	05:53 20:44	06:59 19:19	08:05 17:57	08:15 15:49	08:59 15:30
23	08:38 16:19	07:29 17:32	06:13 18:35	05:48 20:44	04:40 21:47	04:15 22:22	04:51 21:53	05:56 20:42	07:01 19:16	08:07 17:54	08:17 15:48	09:00 15:31
24	08:36 16:21	07:27 17:34	06:10 18:37	05:45 20:46	04:39 21:49	04:15 22:22	04:53 21:52	05:58 20:39	07:03 19:13	08:09 17:52	08:19 15:46	09:00 15:31
25	08:34 16:24	07:24 17:37	06:07 18:40	05:43 20:48	04:37 21:51	04:16 22:22	04:55 21:50	06:00 20:36	07:06 19:10	07:11 16:49	08:21 15:45	09:00 15:32
26	08:33 16:26	07:21 17:39	06:04 18:42	05:40 20:50	04:35 21:53	04:16 22:22	04:57 21:48	06:02 20:34	07:08 19:07	07:14 16:46	08:23 15:43	09:01 15:33
27	08:31 16:28	07:19 17:41	06:02 18:44	05:38 20:53	04:34 21:55	04:17 22:22	04:59 21:46	06:04 20:31	07:10 19:05	07:16 16:44	08:25 15:42	09:01 15:34
28	08:29 16:30	07:16 17:43	05:59 18:46	05:35 20:55	04:32 21:56	04:17 22:21	05:01 21:44	06:06 20:28	07:12 19:02	07:18 16:42	08:27 15:41	09:01 15:35
29	08:27 16:33		05:56 19:48	05:33 20:57	04:31 21:58	04:18 22:21	05:03 21:42	06:08 20:26	07:14 18:59	07:21 16:39	08:29 15:39	09:01 15:36
30	08:25 16:35		05:53 19:51	05:30 20:59	04:29 22:00	04:19 22:21	05:05 21:40	06:10 20:23	07:16 18:56	07:23 16:37	08:31 15:38	09:01 15:37
31	08:23 16:37		05:50 19:53		04:28 22:01		05:07 21:37	06:13 20:20		07:25 16:34		09:01 15:38
Potential sun hours	227	262	365	429	515	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Purva iela 9 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (524)
 Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:28 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
2	09:00 15:41	08:19 16:42	07:11 17:48	06:45 19:57	05:25 21:04	04:25 22:04	04:21 22:20	05:11 21:33	06:17 20:15	07:21 18:51	07:30 16:30	08:35 15:36
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4	08:59 15:43	08:15 16:47	07:05 17:53	06:39 20:02	05:20 21:08	04:23 22:07	04:23 22:18	05:15 21:29	06:21 20:09	07:25 18:45	07:34 16:25	08:38 15:34
5	08:59 15:45	08:13 16:49	07:03 17:55	06:37 20:04	05:18 21:10	04:22 22:08	04:24 22:18	05:17 21:26	06:23 20:06	07:27 18:42	07:37 16:23	08:40 15:33
6	08:58 15:46	08:10 16:52	07:00 17:57	06:34 20:06	05:16 21:12	04:21 22:10	04:25 22:17	05:19 21:24	06:25 20:04	07:29 18:39	07:39 16:20	08:42 15:32
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8	08:57 15:50	08:06 16:56	06:55 18:02	06:28 20:10	05:11 21:17	04:19 22:12	04:27 22:15	05:24 21:19	06:30 19:58	07:34 18:34	07:44 16:16	08:45 15:31
9	08:56 15:51	08:04 16:59	06:52 18:04	06:25 20:13	05:09 21:19	04:19 22:13	04:28 22:14	05:26 21:17	06:32 19:55	07:36 18:31	07:46 16:14	08:46 15:31
10	08:55 15:53	08:01 17:01	06:49 18:06	06:23 20:15	05:06 21:21	04:18 22:14	04:30 22:13	05:28 21:15	06:34 19:52	07:38 18:28	07:48 16:12	08:48 15:30
11	08:54 15:55	07:59 17:04	06:46 18:09	06:20 20:17	05:04 21:23	04:17 22:15	04:31 22:12	05:30 21:12	06:36 19:50	07:40 18:26	07:51 16:10	08:49 15:30
12	08:53 15:57	07:57 17:06	06:44 18:11	06:17 20:19	05:02 21:25	04:17 22:16	04:33 22:10	05:32 21:19	06:38 19:47	07:42 18:23	07:53 16:08	08:50 15:29
13	08:52 15:58	07:54 17:08	06:41 18:13	06:15 20:22	05:00 21:27	04:16 22:17	04:34 22:09	05:34 21:07	06:40 19:44	07:45 18:20	07:55 16:06	08:51 15:29
14	08:51 16:00	07:52 17:11	06:38 18:15	06:12 20:24	04:58 21:29	04:16 22:18	04:36 22:08	05:36 21:05	06:42 19:41	07:47 18:18	07:57 16:04	08:53 15:29
15	08:50 16:02	07:49 17:13	06:35 18:17	06:09 20:26	04:56 21:32	04:15 22:19	04:37 22:06	05:38 21:02	06:44 19:38	07:49 18:15	08:00 16:02	08:54 15:29
16	08:48 16:04	07:47 17:15	06:32 18:20	06:06 20:28	04:54 21:34	04:15 22:19	04:39 22:05	05:41 21:00	06:46 19:35	07:51 18:12	08:02 16:00	08:55 15:29
17	08:47 16:06	07:44 17:18	06:30 18:22	06:04 20:30	04:52 21:36	04:15 22:20	04:41 22:03	05:43 20:57	06:49 19:33	07:53 18:10	08:04 15:58	08:56 15:29
18	08:46 16:08	07:42 17:20	06:27 18:24	06:01 20:33	04:50 21:38	04:15 22:20	04:42 22:02	05:45 20:55	06:51 19:30	07:56 18:07	08:06 15:56	08:56 15:29
19	08:44 16:11	07:39 17:22	06:24 18:26	05:58 20:35	04:48 21:40	04:15 22:21	04:44 22:00	05:47 20:52	06:53 19:27	07:58 18:04	08:09 15:54	08:57 15:29
20	08:43 16:13	07:37 17:25	06:21 18:29	05:56 20:37	04:46 21:42	04:15 22:21	04:46 21:59	05:49 20:50	06:55 19:24	08:00 18:02	08:11 15:53	08:58 15:29
21	08:41 16:15	07:34 17:27	06:18 18:31	05:53 20:39	04:44 21:44	04:15 22:21	04:48 21:57	05:51 20:47	06:57 19:21	08:02 17:59	08:13 15:51	08:59 15:30
22	08:40 16:17	07:32 17:30	06:16 18:33	05:50 20:41	04:42 21:45	04:15 22:22	04:49 21:55	05:53 20:44	06:59 19:19	08:05 17:57	08:15 15:49	08:59 15:30
23	08:38 16:19	07:29 17:32	06:13 18:35	05:48 20:44	04:40 21:47	04:15 22:22	04:51 21:53	05:56 20:42	07:01 19:16	08:07 17:54	08:17 15:48	09:00 15:31
24	08:36 16:21	07:27 17:34	06:10 18:37	05:45 20:46	04:39 21:49	04:15 22:22	04:53 21:52	05:58 20:39	07:03 19:13	08:09 17:51	08:19 15:46	09:00 15:31
25	08:34 16:24	07:24 17:37	06:07 18:40	05:43 20:48	04:37 21:51	04:16 22:22	04:55 21:50	06:00 20:36	07:06 19:10	07:11 16:49	08:21 15:45	09:00 15:32
26	08:33 16:26	07:21 17:39	06:04 18:42	05:40 20:50	04:35 21:53	04:16 22:22	04:57 21:48	06:02 20:34	07:08 19:07	07:14 16:46	08:23 15:43	09:01 15:33
27	08:31 16:28	07:19 17:41	06:02 18:44	05:38 20:53	04:34 21:55	04:17 22:22	04:59 21:46	06:04 20:31	07:10 19:05	07:16 16:44	08:25 15:42	09:01 15:34
28	08:29 16:30	07:16 17:43	05:59 18:46	05:35 20:55	04:32 21:56	04:17 22:21	05:01 21:44	06:06 20:28	07:12 19:02	07:18 16:42	08:27 15:41	09:01 15:35
29	08:27 16:33		05:56 19:48	05:33 20:57	04:31 21:58	04:18 22:21	05:03 21:42	06:08 20:26	07:14 18:59	07:21 16:39	08:29 15:39	09:01 15:36
30	08:25 16:35		05:53 19:51	05:30 20:59	04:29 22:00	04:19 22:21	05:05 21:40	06:10 20:23	07:16 18:56	07:23 16:37	08:31 15:38	09:01 15:37
31	08:23 16:37		05:50 19:53		04:28 22:01		05:07 21:37	06:13 20:20		07:25 16:34		09:01 15:38
Potential sun hours	227	262	365	429	515	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa
Assumptions for shadow calculations

Shadow receptor: Pinas - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (481)
Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January			February			March	April	May	June
1	09:00		14:41 (4)	08:21		15:42 (14)	07:13	06:48	05:27	04:27
	15:39	12	14:53 (4)	16:40	11	15:53 (14)	17:46	19:55	21:01	22:02
2	09:00		14:41 (4)	08:19		15:44 (14)	07:11	06:45	05:25	04:25
	15:40	13	14:54 (4)	16:42	8	15:52 (14)	17:48	19:57	21:03	22:04
3	09:00		14:42 (4)	08:17			07:08	06:42	05:23	04:24
	15:42	14	14:56 (4)	16:44			17:50	19:59	21:06	22:05
4	08:59		14:42 (4)	08:15			07:05	06:39	05:20	04:23
	15:43	16	14:58 (4)	16:47			17:53	20:01	21:08	22:07
5	08:59		14:42 (4)	08:12			07:03	06:36	05:18	04:22
	15:45	17	14:59 (4)	16:49			17:55	20:04	21:10	22:08
6	08:58		14:42 (4)	08:10		16:14 (2)	07:00	06:34	05:15	04:21
	15:46	19	15:01 (4)	16:52	2	16:16 (2)	17:57	20:06	21:12	22:09
7	08:57		14:43 (4)	08:08		16:12 (2)	06:57	06:31	05:13	04:20
	15:48	20	15:03 (4)	16:54	7	16:19 (2)	17:59	20:08	21:14	22:11
8	08:57		14:43 (4)	08:06		16:11 (2)	06:54	06:28	05:11	04:19
	15:49	21	15:04 (4)	16:56	11	16:22 (2)	18:02	20:10	21:16	22:12
9	08:56		14:44 (4)	08:03		16:10 (2)	06:52	06:25	05:09	04:18
	15:51	21	15:05 (4)	16:59	15	16:25 (2)	18:04	20:12	21:19	22:13
10	08:55		14:44 (4)	08:01		16:09 (2)	06:49	06:23	05:06	04:18
	15:53	21	15:05 (4)	17:01	18	16:27 (2)	18:06	20:15	21:21	22:14
11	08:54		14:44 (4)	07:59		16:09 (2)	06:46	06:20	05:04	04:17
	15:55	21	15:05 (4)	17:03	21	16:30 (2)	18:08	20:17	21:23	22:15
12	08:53		14:45 (4)	07:56		16:08 (2)	06:43	06:17	05:02	04:17
	15:56	21	15:06 (4)	17:06	24	16:32 (2)	18:11	20:19	21:25	22:16
13	08:52		14:45 (4)	07:54		16:09 (2)	06:41	06:14	05:00	04:16
	15:58	20	15:05 (4)	17:08	23	16:32 (2)	18:13	20:21	21:27	22:17
14	08:51		14:46 (4)	07:52		16:08 (2)	06:38	06:12	04:58	04:16
	16:00	20	15:06 (4)	17:11	25	16:38 (3)	18:15	20:24	21:29	22:18
15	08:49		14:46 (4)	07:49		16:08 (2)	06:35	06:09	04:56	04:15
	16:02	20	15:06 (4)	17:13	27	16:40 (3)	18:17	20:26	21:31	22:18
16	08:48		14:47 (4)	07:47		16:09 (2)	06:32	06:06	04:53	04:15
	16:04	19	15:06 (4)	17:15	30	16:43 (3)	18:20	20:28	21:33	22:19
17	08:47		14:48 (4)	07:44		16:09 (2)	06:29	06:04	04:51	04:15
	16:06	18	15:06 (4)	17:18	31	16:45 (3)	18:22	20:30	21:35	22:20
18	08:45		14:48 (4)	07:42		16:11 (2)	06:27	06:01	04:49	04:15
	16:08	18	15:06 (4)	17:20	31	16:48 (3)	18:24	20:32	21:37	22:20
19	08:44		14:49 (4)	07:39		16:11 (2)	06:24	05:58	04:48	04:15
	16:10	16	15:05 (4)	17:22	33	16:51 (3)	18:26	20:35	21:39	22:21
20	08:42		14:51 (4)	07:37		16:12 (2)	06:21	05:56	04:46	04:15
	16:13	15	15:06 (4)	17:25	29	16:51 (3)	18:28	20:37	21:41	22:21
21	08:41		14:52 (4)	07:34		16:14 (2)	06:18	05:53	04:44	04:15
	16:15	13	15:05 (4)	17:27	22	16:49 (3)	18:31	20:39	21:43	22:21
22	08:39		14:54 (4)	07:32		16:40 (3)	06:16	05:50	04:42	04:15
	16:17	9	15:03 (4)	17:29	8	16:48 (3)	18:33	20:41	21:45	22:21
23	08:38		15:39 (14)	07:29			06:13	05:48	04:40	04:15
	16:19	1	15:40 (14)	17:32			18:35	20:43	21:47	22:22
24	08:36		15:39 (14)	07:26			06:10	05:45	04:39	04:15
	16:21	3	15:42 (14)	17:34			18:37	20:46	21:49	22:22
25	08:34		15:39 (14)	07:24			06:07	05:43	04:37	04:16
	16:24	6	15:45 (14)	17:36			18:39	20:48	21:51	22:22
26	08:32		15:39 (14)	07:21			06:04	05:40	04:35	04:16
	16:26	9	15:48 (14)	17:39			18:42	20:50	21:53	22:21
27	08:31		15:38 (14)	07:19			06:02	05:37	04:34	04:17
	16:28	12	15:50 (14)	17:41			18:44	20:52	21:54	22:21
28	08:29		15:39 (14)	07:16			05:59	05:35	04:32	04:17
	16:30	13	15:52 (14)	17:43			18:46	20:55	21:56	22:21
29	08:27		15:39 (14)				06:56	05:32	04:31	04:18
	16:33	16	15:55 (14)				19:48	20:57	21:58	22:21
30	08:25		15:40 (14)				06:53	05:30	04:29	04:19
	16:35	15	15:55 (14)				19:50	20:59	21:59	22:20
31	08:23		15:42 (14)				06:50		04:28	
	16:37	13	15:55 (14)				19:53		22:01	
Potential sun hours	227			262			365	429	515	539
Total, worst case		472		376						
Sun reduction		0.11		0.19						
Oper. time red.		1.00		1.00						
Wind dir. red.		1.00		1.00						
Total reduction		0.11		0.19						
Total, real		52		73						

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa
Assumptions for shadow calculations

Shadow receptor: Pinas - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (481)
Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	July	August	September	October		November		December			
1	04:20	05:09	06:15	07:18		07:27	15:39 (2)	08:33	14:26 (4)		
	22:20	21:35	20:17	18:53		16:32	17	15:56 (2)	15:37	21	14:47 (4)
2	04:21	05:11	06:17	07:20		07:30		15:40 (2)	08:35		14:26 (4)
	22:19	21:33	20:14	18:50		16:29	14	15:54 (2)	15:36	21	14:47 (4)
3	04:21	05:13	06:19	07:23		07:32		15:40 (2)	08:36		14:27 (4)
	22:19	21:31	20:12	18:48		16:27	11	15:51 (2)	15:35	21	14:48 (4)
4	04:22	05:15	06:21	07:25		07:34		15:42 (2)	08:38		14:27 (4)
	22:18	21:28	20:09	18:45		16:25	7	15:49 (2)	15:34	21	14:48 (4)
5	04:24	05:17	06:23	07:27		07:37		15:44 (2)	08:40		14:28 (4)
	22:17	21:26	20:06	18:42		16:22	2	15:46 (2)	15:33	20	14:48 (4)
6	04:25	05:19	06:25	07:29		07:39			08:41		14:28 (4)
	22:16	21:24	20:03	18:39		16:20			15:32	19	14:47 (4)
7	04:26	05:21	06:27	07:31		07:41			08:43		14:29 (4)
	22:16	21:22	20:01	18:37		16:18			15:32	17	14:46 (4)
8	04:27	05:23	06:29	07:33		07:43			08:44		14:30 (4)
	22:15	21:19	19:58	18:34		16:16			15:31	16	14:46 (4)
9	04:28	05:26	06:32	07:36		07:46		15:15 (14)	08:46		14:30 (4)
	22:14	21:17	19:55	18:31		16:14	8	15:23 (14)	15:31	14	14:44 (4)
10	04:30	05:28	06:34	07:38		07:48		15:13 (14)	08:47		14:31 (4)
	22:12	21:14	19:52	18:28		16:12	11	15:24 (14)	15:30	13	14:44 (4)
11	04:31	05:30	06:36	07:40		07:50		15:12 (14)	08:49		14:31 (4)
	22:11	21:12	19:49	18:26		16:09	14	15:26 (14)	15:30	12	14:43 (4)
12	04:33	05:32	06:38	07:42		07:53		15:11 (14)	08:50		14:32 (4)
	22:10	21:10	19:47	18:23		16:07	15	15:26 (14)	15:29	11	14:43 (4)
13	04:34	05:34	06:40	07:44		07:55		15:11 (14)	08:51		14:33 (4)
	22:09	21:07	19:44	18:20		16:05	16	15:27 (14)	15:29	9	14:42 (4)
14	04:36	05:36	06:42	07:47		07:57		15:12 (14)	08:52		14:33 (4)
	22:08	21:05	19:41	18:18		16:03	13	15:25 (14)	15:29	9	14:42 (4)
15	04:37	05:38	06:44	07:49		07:59		15:11 (14)	08:53		14:34 (4)
	22:06	21:02	19:38	18:15		16:02	11	15:22 (14)	15:29	7	14:41 (4)
16	04:39	05:40	06:46	07:51		08:02		15:12 (14)	08:54		14:34 (4)
	22:05	21:00	19:35	18:12		16:00	9	15:21 (14)	15:29	7	14:41 (4)
17	04:40	05:43	06:48	07:53		08:04		15:12 (14)	08:55		14:35 (4)
	22:03	20:57	19:33	18:10		15:58	6	15:18 (14)	15:29	6	14:41 (4)
18	04:42	05:45	06:51	07:55		08:06		15:13 (14)	08:56		14:35 (4)
	22:02	20:54	19:30	18:07		15:56	3	15:16 (14)	15:29	6	14:41 (4)
19	04:44	05:47	06:53	07:58		08:08		15:13 (14)	08:57		14:36 (4)
	22:00	20:52	19:27	18:04		15:54	1	15:14 (14)	15:29	6	14:42 (4)
20	04:46	05:49	06:55	08:00		08:10		14:29 (4)	08:58		14:37 (4)
	21:58	20:49	19:24	18:02	14	17:19 (3)	15:52	14:38 (4)	15:29	5	14:42 (4)
21	04:47	05:51	06:57	08:02		08:13		14:27 (4)	08:58		14:37 (4)
	21:57	20:47	19:21	17:59	25	17:21 (3)	15:51	14:40 (4)	15:30	5	14:42 (4)
22	04:49	05:53	06:59	08:04		08:15		14:27 (4)	08:59		14:38 (4)
	21:55	20:44	19:18	17:56	30	17:21 (3)	15:49	14:42 (4)	15:30	5	14:43 (4)
23	04:51	05:55	07:01	08:07		08:17		14:26 (4)	08:59		14:38 (4)
	21:53	20:41	19:16	17:54	32	17:20 (3)	15:48	14:42 (4)	15:31	5	14:43 (4)
24	04:53	05:58	07:03	08:09		08:19		14:25 (4)	09:00		14:38 (4)
	21:51	20:39	19:13	17:51	31	17:17 (3)	15:46	14:43 (4)	15:31	5	14:43 (4)
25	04:55	06:00	07:05	07:11		08:21		14:26 (4)	09:00		14:39 (4)
	21:49	20:36	19:10	16:49	31	16:15 (3)	15:45	14:44 (4)	15:32	6	14:45 (4)
26	04:57	06:02	07:08	07:14		08:23		14:25 (4)	09:00		14:40 (4)
	21:47	20:33	19:07	16:46	29	16:12 (3)	15:43	14:45 (4)	15:33	6	14:46 (4)
27	04:59	06:04	07:10	07:16		08:25		14:25 (4)	09:01		14:40 (4)
	21:45	20:31	19:04	16:44	27	16:10 (3)	15:42	14:45 (4)	15:34	7	14:47 (4)
28	05:01	06:06	07:12	07:18		08:27		14:26 (4)	09:01		14:40 (4)
	21:43	20:28	19:02	16:41	23	16:01 (2)	15:41	14:46 (4)	15:34	8	14:48 (4)
29	05:03	06:08	07:14	07:20		08:29		14:26 (4)	09:01		14:40 (4)
	21:41	20:25	18:59	16:39	24	16:02 (2)	15:39	14:46 (4)	15:35	8	14:48 (4)
30	05:05	06:10	07:16	07:23		08:31		14:26 (4)	09:01		14:40 (4)
	21:39	20:23	18:56	16:37	23	16:01 (2)	15:38	14:47 (4)	15:37	10	14:50 (4)
31	05:07	06:13		07:25		15:39 (2)			09:00		14:41 (4)
	21:37	20:20		16:34	20	15:59 (2)			15:38	10	14:51 (4)
Potential sun hours	538	474	386	321		241			207		
Total, worst case				309		348			336		
Sun reduction				0.28		0.08			0.06		
Oper. time red.				1.00		1.00			1.00		
Wind dir. red.				1.00		1.00			1.00		
Total reduction				0.28		0.08			0.06		
Total, real				87		27			21		

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Raina iela 37 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (600) Sunshine probability S (Average daily sunshine hours) []

Assumptions for shadow calculations

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
0.80 1.82 4.75 6.09 9.67 10.05 8.16 7.72 5.94 2.93 0.63 0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:28 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
2	09:00 15:40	08:19 16:42	07:11 17:48	06:45 19:57	05:25 21:04	04:25 22:04	04:20 22:20	05:11 21:33	06:17 20:15	07:21 18:51	07:30 16:29	08:35 15:36
3	09:00 15:42	08:17 16:44	07:08 17:50	06:42 19:59	05:23 21:06	04:24 22:06	04:21 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:37 15:35
4	08:59 15:43	08:15 16:47	07:05 17:53	06:39 20:02	05:20 21:08	04:23 22:07	04:22 22:18	05:15 21:29	06:21 20:09	07:25 18:45	07:35 16:25	08:38 15:34
5	08:59 15:45	08:13 16:49	07:03 17:55	06:37 20:04	05:18 21:10	04:22 22:09	04:23 22:18	05:17 21:26	06:23 20:06	07:27 18:42	07:37 16:23	08:40 15:33
6	08:58 15:46	08:10 16:52	07:00 17:57	06:34 20:06	05:15 21:12	04:21 22:10	04:25 22:17	05:19 21:24	06:25 20:04	07:29 18:39	07:39 16:20	08:42 15:32
7	08:58 15:48	08:08 16:54	06:57 17:59	06:31 20:08	05:13 21:15	04:20 22:11	04:26 22:16	05:21 21:22	06:27 20:01	07:31 18:37	07:41 16:18	08:43 15:32
8	08:57 15:49	08:06 16:56	06:55 18:02	06:28 20:10	05:11 21:17	04:19 22:12	04:27 22:15	05:23 21:20	06:30 19:58	07:34 18:34	07:44 16:16	08:45 15:31
9	08:56 15:51	08:04 16:59	06:52 18:04	06:25 20:13	05:09 21:19	04:18 22:13	04:28 22:14	05:26 21:17	06:32 19:55	07:36 18:31	07:46 16:14	08:46 15:30
10	08:55 15:53	08:01 17:01	06:49 18:06	06:23 20:15	05:06 21:21	04:18 22:14	04:30 22:13	05:28 21:15	06:34 19:52	07:38 18:28	07:48 16:12	08:48 15:30
11	08:54 15:55	07:59 17:03	06:46 18:09	06:20 20:17	05:04 21:23	04:17 22:15	04:31 22:12	05:30 21:12	06:36 19:50	07:40 18:26	07:51 16:10	08:49 15:30
12	08:53 15:56	07:57 17:06	06:44 18:11	06:17 20:19	05:02 21:25	04:16 22:16	04:33 22:10	05:32 21:10	06:38 19:47	07:42 18:23	07:53 16:07	08:50 15:29
13	08:52 15:58	07:54 17:08	06:41 18:13	06:14 20:22	05:00 21:27	04:16 22:17	04:34 22:09	05:34 21:07	06:40 19:44	07:45 18:20	07:55 16:05	08:51 15:29
14	08:51 16:00	07:52 17:11	06:38 18:15	06:12 20:24	04:58 21:29	04:16 22:18	04:36 22:08	05:36 21:05	06:42 19:41	07:47 18:18	07:57 16:03	08:53 15:29
15	08:50 16:02	07:49 17:13	06:35 18:17	06:09 20:26	04:56 21:32	04:15 22:19	04:37 22:06	05:38 21:02	06:44 19:38	07:49 18:15	08:00 16:02	08:54 15:29
16	08:48 16:04	07:47 17:15	06:32 18:20	06:06 20:28	04:53 21:34	04:15 22:19	04:39 22:05	05:41 21:00	06:46 19:35	07:51 18:12	08:02 16:00	08:55 15:29
17	08:47 16:06	07:45 17:18	06:30 18:22	06:04 20:30	04:51 21:36	04:15 22:20	04:40 22:03	05:43 20:57	06:49 19:33	07:53 18:10	08:04 15:58	08:56 15:29
18	08:46 16:08	07:42 17:20	06:27 18:24	06:01 20:33	04:49 21:38	04:15 22:20	04:42 22:02	05:45 20:55	06:51 19:30	07:56 18:07	08:06 15:56	08:56 15:29
19	08:44 16:10	07:39 17:22	06:24 18:26	05:58 20:35	04:48 21:40	04:15 22:21	04:44 22:00	05:47 20:52	06:53 19:27	07:58 18:04	08:09 15:54	08:57 15:29
20	08:43 16:13	07:37 17:25	06:21 18:29	05:56 20:37	04:46 21:42	04:15 22:21	04:46 21:59	05:49 20:50	06:55 19:24	08:00 18:02	08:11 15:52	08:58 15:29
21	08:41 16:15	07:34 17:27	06:18 18:31	05:53 20:39	04:44 21:44	04:15 22:22	04:47 21:57	05:51 20:47	06:57 19:21	08:02 17:59	08:13 15:51	08:59 15:30
22	08:40 16:17	07:32 17:29	06:16 18:33	05:50 20:41	04:42 21:45	04:15 22:22	04:49 21:55	05:53 20:44	06:59 19:19	08:05 17:57	08:15 15:49	08:59 15:30
23	08:38 16:19	07:29 17:32	06:13 18:35	05:48 20:44	04:40 21:47	04:15 22:22	04:51 21:53	05:55 20:42	07:01 19:16	08:07 17:54	08:17 15:48	09:00 15:31
24	08:36 16:21	07:27 17:34	06:10 18:37	05:45 20:46	04:38 21:49	04:15 22:22	04:53 21:52	05:58 20:39	07:03 19:13	08:09 17:51	08:19 15:46	09:00 15:31
25	08:35 16:24	07:24 17:36	06:07 18:40	05:43 20:48	04:37 21:51	04:16 22:22	04:55 21:50	06:00 20:36	07:06 19:10	07:11 16:49	08:21 15:45	09:00 15:32
26	08:33 16:26	07:21 17:39	06:04 18:42	05:40 20:50	04:35 21:53	04:16 22:22	04:57 21:48	06:02 20:34	07:08 19:07	07:14 16:46	08:23 15:43	09:01 15:33
27	08:31 16:28	07:19 17:41	06:02 18:44	05:38 20:53	04:34 21:55	04:17 22:22	04:59 21:46	06:04 20:31	07:10 19:05	07:16 16:44	08:25 15:42	09:01 15:34
28	08:29 16:30	07:16 17:43	05:59 18:46	05:35 20:55	04:32 21:56	04:17 22:21	05:01 21:44	06:06 20:28	07:12 19:02	07:18 16:41	08:27 15:41	09:01 15:34
29	08:27 16:33		05:56 19:48	05:32 20:57	04:31 21:58	04:18 22:21	05:03 21:42	06:08 20:26	07:14 18:59	07:21 16:39	08:29 15:39	09:01 15:35
30	08:25 16:35		05:53 19:51	05:30 20:59	04:29 22:00	04:19 22:21	05:05 21:40	06:10 20:23	07:16 18:56	07:23 16:37	08:31 15:38	09:01 15:36
31	08:23 16:37		05:50 19:53		04:28 22:01		05:07 21:38	06:13 20:20		07:25 16:34		09:01 15:38
Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Last time (hh:mm) with flicker	(WTG causing flicker last time)
	Minutes with flicker		

Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Raina iela 41 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (703)
Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:28 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
2	09:00 15:40	08:19 16:42	07:11 17:48	06:45 19:57	05:25 21:04	04:25 22:04	04:20 22:20	05:11 21:33	06:17 20:15	07:21 18:51	07:30 16:29	08:35 15:36
3	09:00 15:42	08:17 16:44	07:08 17:50	06:42 19:59	05:23 21:06	04:24 22:06	04:21 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:37 15:35
4	08:59 15:43	08:15 16:47	07:05 17:53	06:39 20:02	05:20 21:08	04:23 22:07	04:22 22:18	05:15 21:29	06:21 20:09	07:25 18:45	07:35 16:25	08:38 15:34
5	08:59 15:45	08:13 16:49	07:03 17:55	06:37 20:04	05:18 21:10	04:22 22:09	04:24 22:18	05:17 21:26	06:23 20:06	07:27 18:42	07:37 16:23	08:40 15:33
6	08:58 15:46	08:10 16:52	07:00 17:57	06:34 20:06	05:16 21:12	04:21 22:10	04:25 22:17	05:19 21:24	06:25 20:04	07:29 18:39	07:39 16:20	08:42 15:32
7	08:58 15:48	08:08 16:54	06:57 17:59	06:31 20:08	05:13 21:15	04:20 22:11	04:26 22:16	05:21 21:22	06:27 20:01	07:31 18:37	07:41 16:18	08:43 15:32
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9	08:56 15:51	08:04 16:59	06:52 18:04	06:25 20:13	05:09 21:19	04:18 22:13	04:28 22:14	05:26 21:17	06:32 19:55	07:36 18:31	07:46 16:14	08:46 15:31
10	08:55 15:53	08:01 17:01	06:49 18:06	06:23 20:15	05:06 21:21	04:18 22:14	04:30 22:13	05:28 21:15	06:34 19:52	07:38 18:28	07:48 16:12	08:48 15:30
11	08:54 15:55	07:59 17:04	06:46 18:09	06:20 20:17	05:04 21:23	04:17 22:15	04:31 22:12	05:30 21:12	06:36 19:50	07:40 18:26	07:51 16:10	08:49 15:30
12	08:53 15:57	07:57 17:06	06:44 18:11	06:17 20:19	05:02 21:25	04:17 22:16	04:33 22:10	05:32 21:10	06:38 19:47	07:42 18:23	07:53 16:07	08:50 15:29
13	08:52 15:58	07:54 17:08	06:41 18:13	06:15 20:22	05:00 21:27	04:16 22:17	04:34 22:09	05:34 21:07	06:40 19:44	07:45 18:20	07:55 16:05	08:51 15:29
14	08:51 16:00	07:52 17:11	06:38 18:15	06:12 20:24	04:58 21:29	04:16 22:18	04:36 22:08	05:36 21:05	06:42 19:41	07:47 18:18	07:57 16:04	08:53 15:29
15	08:50 16:02	07:49 17:13	06:35 18:17	06:09 20:26	04:56 21:32	04:15 22:19	04:37 22:06	05:38 21:02	06:44 19:38	07:49 18:15	08:00 16:02	08:54 15:29
16	08:48 16:04	07:47 17:15	06:32 18:20	06:06 20:28	04:54 21:34	04:15 22:19	04:39 22:05	05:41 21:00	06:46 19:36	07:51 18:12	08:02 16:00	08:55 15:29
17	08:47 16:06	07:45 17:18	06:30 18:22	06:04 20:30	04:51 21:36	04:15 22:20	04:40 22:03	05:43 20:57	06:49 19:33	07:53 18:10	08:04 15:58	08:56 15:29
18	08:46 16:08	07:42 17:20	06:27 18:24	06:01 20:33	04:50 21:38	04:15 22:20	04:42 22:02	05:45 20:55	06:51 19:30	07:56 18:07	08:06 15:56	08:56 15:29
19	08:44 16:10	07:40 17:22	06:24 18:26	05:58 20:35	04:48 21:40	04:15 22:21	04:44 22:00	05:47 20:52	06:53 19:27	07:58 18:04	08:09 15:54	08:57 15:29
20	08:43 16:13	07:37 17:25	06:21 18:29	05:56 20:37	04:46 21:42	04:15 22:21	04:46 21:59	05:49 20:50	06:55 19:24	08:00 18:02	08:11 15:53	08:58 15:29
21	08:41 16:15	07:34 17:27	06:18 18:31	05:53 20:39	04:44 21:44	04:15 22:22	04:47 21:57	05:51 20:47	06:57 19:21	08:02 17:59	08:13 15:51	08:59 15:30
22	08:40 16:17	07:32 17:30	06:16 18:33	05:50 20:41	04:42 21:45	04:15 22:22	04:49 21:55	05:53 20:44	06:59 19:19	08:05 17:57	08:15 15:49	08:59 15:30
23	08:38 16:19	07:29 17:32	06:13 18:35	05:48 20:44	04:40 21:47	04:15 22:22	04:51 21:53	05:56 20:42	07:01 19:16	08:07 17:54	08:17 15:48	09:00 15:31
24	08:36 16:21	07:27 17:34	06:10 18:37	05:45 20:46	04:39 21:49	04:15 22:22	04:53 21:52	05:58 20:39	07:03 19:13	08:09 17:51	08:19 15:46	09:00 15:31
25	08:35 16:24	07:24 17:36	06:07 18:40	05:43 20:48	04:37 21:51	04:16 22:22	04:55 21:50	06:00 20:36	07:06 19:10	07:11 16:49	08:21 15:45	09:00 15:32
26	08:33 16:26	07:21 17:39	06:04 18:42	05:40 20:50	04:35 21:53	04:16 22:22	04:57 21:48	06:02 20:34	07:08 19:07	07:14 16:46	08:23 15:43	09:01 15:33
27	08:31 16:28	07:19 17:41	06:02 18:44	05:38 20:53	04:34 21:55	04:17 22:22	04:59 21:46	06:04 20:31	07:10 19:05	07:16 16:44	08:25 15:42	09:01 15:34
28	08:29 16:30	07:16 17:43	05:59 18:46	05:35 20:55	04:32 21:56	04:17 22:21	05:01 21:44	06:06 20:28	07:12 19:02	07:18 16:41	08:27 15:41	09:01 15:34
29	08:27 16:33		05:56 19:48	05:32 20:57	04:31 21:58	04:18 22:21	05:03 21:42	06:08 20:26	07:14 18:59	07:21 16:39	08:29 15:39	09:01 15:35
30	08:25 16:35		05:53 19:51	05:30 20:59	04:29 22:00	04:19 22:21	05:05 21:40	06:10 20:23	07:16 18:56	07:23 16:37	08:31 15:38	09:01 15:37
31	08:23 16:37		05:50 19:53		04:28 22:01		05:07 21:38	06:13 20:20		07:25 16:34		09:01 15:38
Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Raina iela 51 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (694)
Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:28 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
2	09:00 15:40	08:19 16:42	07:11 17:48	06:45 19:57	05:25 21:04	04:25 22:04	04:20 22:20	05:11 21:33	06:17 20:15	07:21 18:51	07:30 16:29	08:35 15:36
3	09:00 15:42	08:17 16:44	07:08 17:50	06:42 19:59	05:23 21:06	04:24 22:06	04:21 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:37 15:35
4	08:59 15:43	08:15 16:47	07:05 17:53	06:39 20:02	05:20 21:08	04:23 22:07	04:22 22:18	05:15 21:29	06:21 20:09	07:25 18:45	07:35 16:25	08:38 15:34
5	08:59 15:45	08:13 16:49	07:03 17:55	06:37 20:04	05:18 21:10	04:22 22:09	04:24 22:18	05:17 21:27	06:23 20:06	07:27 18:42	07:37 16:23	08:40 15:33
6	08:58 15:46	08:10 16:52	07:00 17:57	06:34 20:06	05:16 21:12	04:21 22:10	04:25 22:17	05:19 21:24	06:25 20:04	07:29 18:39	07:39 16:20	08:42 15:32
7	08:58 15:48	08:08 16:54	06:57 17:59	06:31 20:08	05:13 21:15	04:20 22:11	04:26 22:16	05:21 21:22	06:27 20:01	07:31 18:37	07:41 16:18	08:43 15:32
8	08:57 15:49	08:06 16:56	06:55 18:02	06:28 20:10	05:11 21:17	04:19 22:12	04:27 22:15	05:23 21:20	06:30 19:58	07:34 18:34	07:44 16:16	08:45 15:31
9	08:56 15:51	08:04 16:59	06:52 18:04	06:25 20:13	05:09 21:19	04:18 22:13	04:28 22:14	05:26 21:17	06:32 19:55	07:36 18:31	07:46 16:14	08:46 15:31
10	08:55 15:53	08:01 17:01	06:49 18:06	06:23 20:15	05:06 21:21	04:18 22:14	04:30 22:13	05:28 21:15	06:34 19:52	07:38 18:28	07:48 16:12	08:48 15:30
11	08:54 15:55	07:59 17:04	06:46 18:09	06:20 20:17	05:04 21:23	04:17 22:15	04:31 22:12	05:30 21:12	06:36 19:50	07:40 18:26	07:51 16:10	08:49 15:30
12	08:53 15:57	07:57 17:06	06:44 18:11	06:17 20:19	05:02 21:25	04:17 22:16	04:33 22:10	05:32 21:10	06:38 19:47	07:42 18:23	07:53 16:08	08:50 15:29
13	08:52 15:58	07:54 17:08	06:41 18:13	06:15 20:22	05:00 21:27	04:16 22:17	04:34 22:09	05:34 21:07	06:40 19:44	07:45 18:20	07:55 16:05	08:51 15:29
14	08:51 16:00	07:52 17:11	06:38 18:15	06:12 20:24	04:58 21:29	04:16 22:18	04:36 22:08	05:36 21:05	06:42 19:41	07:47 18:18	07:57 16:04	08:53 15:29
15	08:50 16:02	07:49 17:13	06:35 18:17	06:09 20:26	04:56 21:32	04:15 22:19	04:37 22:06	05:38 21:02	06:44 19:38	07:49 18:15	08:00 16:02	08:54 15:29
16	08:48 16:04	07:47 17:15	06:32 18:20	06:06 20:28	04:54 21:34	04:15 22:19	04:39 22:05	05:41 21:00	06:47 19:36	07:51 18:12	08:02 16:00	08:55 15:29
17	08:47 16:06	07:45 17:18	06:30 18:22	06:04 20:30	04:51 21:36	04:15 22:20	04:40 22:03	05:43 20:57	06:49 19:33	07:53 18:10	08:04 15:58	08:56 15:29
18	08:46 16:08	07:42 17:20	06:27 18:24	06:01 20:33	04:50 21:38	04:15 22:20	04:42 22:02	05:45 20:55	06:51 19:30	07:56 18:07	08:06 15:56	08:56 15:29
19	08:44 16:10	07:40 17:22	06:24 18:26	05:58 20:35	04:48 21:40	04:15 22:21	04:44 22:00	05:47 20:52	06:53 19:27	07:58 18:04	08:09 15:54	08:57 15:29
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23	08:38 16:19	07:29 17:32	06:13 18:35	05:48 20:44	04:40 21:47	04:15 22:22	04:51 21:53	05:56 20:42	07:01 19:16	08:07 17:54	08:17 15:48	09:00 15:31
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29	08:27 16:33		05:56 19:48	05:32 20:57	04:31 21:58	04:18 22:21	05:03 21:42	06:08 20:26	07:14 18:59	07:21 16:39	08:29 15:39	09:01 15:35
30	08:25 16:35		05:53 19:51	05:30 20:59	04:29 22:00	04:19 22:21	05:05 21:40	06:10 20:23	07:16 18:56	07:23 16:37	08:31 15:38	09:01 15:37
31	08:23 16:37		05:50 19:53		04:28 22:01		05:07 21:38	06:13 20:20		07:25 16:34		09:01 15:38
Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Raina iela 53 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (760) Sunshine probability S (Average daily sunshine hours) []

Assumptions for shadow calculations

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
0.80 1.82 4.75 6.09 9.67 10.05 8.16 7.72 5.94 2.93 0.63 0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:28 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
2	09:00 15:40	08:19 16:42	07:11 17:48	06:45 19:57	05:25 21:04	04:25 22:04	04:20 22:20	05:11 21:33	06:17 20:15	07:21 18:51	07:30 16:29	08:35 15:36
3	09:00 15:42	08:17 16:44	07:08 17:50	06:42 19:59	05:23 21:06	04:24 22:06	04:21 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:37 15:35
4	08:59 15:43	08:15 16:47	07:05 17:53	06:39 20:02	05:20 21:08	04:23 22:07	04:22 22:18	05:15 21:29	06:21 20:09	07:25 18:45	07:35 16:25	08:38 15:34
5	08:59 15:45	08:13 16:49	07:03 17:55	06:37 20:04	05:18 21:10	04:22 22:09	04:24 22:18	05:17 21:27	06:23 20:06	07:27 18:42	07:37 16:23	08:40 15:33
6	08:58 15:46	08:10 16:52	07:00 17:57	06:34 20:06	05:16 21:12	04:21 22:10	04:25 22:17	05:19 21:24	06:25 20:04	07:29 18:39	07:39 16:20	08:42 15:32
7	08:58 15:48	08:08 16:54	06:57 17:59	06:31 20:08	05:13 21:15	04:20 22:11	04:26 22:16	05:21 21:22	06:27 20:01	07:31 18:37	07:41 16:18	08:43 15:32
8	08:57 15:49	08:06 16:56	06:55 18:02	06:28 20:11	05:11 21:17	04:19 22:12	04:27 22:15	05:23 21:20	06:30 19:58	07:34 18:34	07:44 16:16	08:45 15:31
9	08:56 15:51	08:04 16:59	06:52 18:04	06:25 20:13	05:09 21:19	04:18 22:13	04:28 22:14	05:26 21:17	06:32 19:55	07:36 18:31	07:46 16:14	08:46 15:31
10	08:55 15:53	08:01 17:01	06:49 18:06	06:23 20:15	05:06 21:21	04:18 22:14	04:30 22:13	05:28 21:15	06:34 19:52	07:38 18:28	07:48 16:12	08:48 15:30
11	08:54 15:55	07:59 17:04	06:46 18:09	06:20 20:17	05:04 21:23	04:17 22:15	04:31 22:12	05:30 21:12	06:36 19:50	07:40 18:26	07:51 16:10	08:49 15:30
12	08:53 15:57	07:57 17:06	06:44 18:11	06:17 20:19	05:02 21:25	04:17 22:16	04:33 22:10	05:32 21:10	06:38 19:47	07:42 18:23	07:53 16:08	08:50 15:29
13	08:52 15:58	07:54 17:08	06:41 18:13	06:15 20:22	05:00 21:27	04:16 22:17	04:34 22:09	05:34 21:07	06:40 19:44	07:45 18:20	07:55 16:05	08:51 15:29
14	08:51 16:00	07:52 17:11	06:38 18:15	06:12 20:24	04:58 21:29	04:16 22:18	04:36 22:08	05:36 21:05	06:42 19:41	07:47 18:18	07:57 16:04	08:53 15:29
15	08:50 16:02	07:49 17:13	06:35 18:17	06:09 20:26	04:56 21:32	04:15 22:19	04:37 22:06	05:38 21:02	06:44 19:38	07:49 18:15	08:00 16:02	08:54 15:29
16	08:48 16:04	07:47 17:15	06:32 18:20	06:06 20:28	04:54 21:34	04:15 22:19	04:39 22:05	05:41 21:00	06:47 19:36	07:51 18:12	08:02 16:00	08:55 15:29
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18	08:46 16:08	07:42 17:20	06:27 18:24	06:01 20:33	04:50 21:38	04:15 22:20	04:42 22:02	05:45 20:55	06:51 19:30	07:56 18:07	08:06 15:56	08:56 15:29
19	08:44 16:10	07:40 17:22	06:24 18:26	05:58 20:35	04:48 21:40	04:15 22:21	04:44 22:00	05:47 20:52	06:53 19:27	07:58 18:04	08:09 15:54	08:57 15:29
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21	08:41 16:15	07:34 17:27	06:18 18:31	05:53 20:39	04:44 21:44	04:15 22:22	04:47 21:57	05:51 20:47	06:57 19:21	08:02 17:59	08:13 15:51	08:59 15:30
22	08:40 16:17	07:32 17:30	06:16 18:33	05:50 20:41	04:42 21:45	04:15 22:22	04:49 21:55	05:53 20:44	06:59 19:19	08:05 17:57	08:15 15:49	08:59 15:30
23	08:38 16:19	07:29 17:32	06:13 18:35	05:48 20:44	04:40 21:47	04:15 22:22	04:51 21:53	05:56 20:42	07:01 19:16	08:07 17:54	08:17 15:48	09:00 15:31
24	08:36 16:21	07:27 17:34	06:10 18:37	05:45 20:46	04:39 21:49	04:15 22:22	04:53 21:52	05:58 20:39	07:03 19:13	08:09 17:51	08:19 15:46	09:00 15:31
25	08:35 16:24	07:24 17:37	06:07 18:40	05:43 20:48	04:37 21:51	04:16 22:22	04:55 21:50	06:00 20:36	07:06 19:10	07:11 16:49	08:21 15:45	09:00 15:32
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27	08:31 16:28	07:19 17:41	06:02 18:44	05:38 20:53	04:34 21:55	04:17 22:22	04:59 21:46	06:04 20:31	07:10 19:05	07:16 16:44	08:25 15:42	09:01 15:34
28	08:29 16:30	07:16 17:43	05:59 18:46	05:35 20:55	04:32 21:56	04:17 22:21	05:01 21:44	06:06 20:28	07:12 19:02	07:18 16:41	08:27 15:41	09:01 15:34
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31	08:23 16:37		05:50 19:53		04:28 22:01		05:07 21:38	06:13 20:20		07:25 16:34		09:01 15:38
Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Last time (hh:mm) with flicker	(WTG causing flicker last time)
	Minutes with flicker		

Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Raina iela 55 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (723)
 Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:28 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
2	09:00 15:40	08:19 16:42	07:11 17:48	06:45 19:57	05:25 21:04	04:25 22:04	04:21 22:20	05:11 21:33	06:17 20:15	07:21 18:51	07:30 16:29	08:35 15:36
3	09:00 15:42	08:17 16:44	07:08 17:50	06:42 19:59	05:23 21:06	04:24 22:06	04:21 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:37 15:35
4	08:59 15:43	08:15 16:47	07:05 17:53	06:39 20:02	05:20 21:08	04:23 22:07	04:22 22:18	05:15 21:29	06:21 20:09	07:25 18:45	07:35 16:25	08:38 15:34
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7	08:58 15:48	08:08 16:54	06:57 17:59	06:31 20:08	05:13 21:15	04:20 22:11	04:26 22:16	05:21 21:22	06:27 20:01	07:31 18:37	07:41 16:18	08:43 15:32
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Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Raina iela 57 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (704)
Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:28 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
2	09:00 15:40	08:19 16:42	07:11 17:48	06:45 19:57	05:25 21:04	04:25 22:04	04:21 22:20	05:11 21:33	06:17 20:15	07:21 18:51	07:30 16:29	08:35 15:36
3	09:00 15:42	08:17 16:44	07:08 17:50	06:42 19:59	05:23 21:06	04:24 22:06	04:21 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:37 15:35
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5	08:59 15:45	08:13 16:49	07:03 17:55	06:37 20:04	05:18 21:10	04:22 22:09	04:24 22:18	05:17 21:27	06:23 20:06	07:27 18:42	07:37 16:23	08:40 15:33
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Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Raina iela 58 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (648)
 Sunshine probability S (Average daily sunshine hours) []

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Total, worst case												
Sun reduction												
Oper. time red.												
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Total reduction												
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SIA Estonian, Latvian & Lithuanian environment

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SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Raina iela 59 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (705)
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18	08:46 16:08	07:42 17:20	06:27 18:24	06:01 20:33	04:50 21:38	04:15 22:20	04:42 22:02	05:45 20:55	06:51 19:30	07:56 18:07	08:06 15:56	08:57 15:29
19	08:44 16:10	07:40 17:22	06:24 18:26	05:58 20:35	04:48 21:40	04:15 22:21	04:44 22:00	05:47 20:52	06:53 19:27	07:58 18:04	08:09 15:54	08:57 15:29
20	08:43 16:13	07:37 17:25	06:21 18:29	05:56 20:37	04:46 21:42	04:15 22:21	04:46 21:59	05:49 20:50	06:55 19:24	08:00 18:02	08:11 15:53	08:58 15:29
21	08:41 16:15	07:34 17:27	06:18 18:31	05:53 20:39	04:44 21:44	04:15 22:22	04:47 21:57	05:51 20:47	06:57 19:21	08:02 17:59	08:13 15:51	08:59 15:30
22	08:40 16:17	07:32 17:30	06:16 18:33	05:50 20:41	04:42 21:45	04:15 22:22	04:49 21:55	05:53 20:44	06:59 19:19	08:05 17:57	08:15 15:49	08:59 15:30
23	08:38 16:19	07:29 17:32	06:13 18:35	05:48 20:44	04:40 21:47	04:15 22:22	04:51 21:53	05:56 20:42	07:01 19:16	08:07 17:54	08:17 15:48	09:00 15:31
24	08:36 16:21	07:27 17:34	06:10 18:37	05:45 20:46	04:39 21:49	04:15 22:22	04:53 21:52	05:58 20:39	07:03 19:13	08:09 17:51	08:19 15:46	09:00 15:31
25	08:35 16:24	07:24 17:37	06:07 18:40	05:43 20:48	04:37 21:51	04:16 22:22	04:55 21:50	06:00 20:36	07:06 19:10	07:12 16:49	08:21 15:45	09:00 15:32
26	08:33 16:26	07:21 17:39	06:04 18:42	05:40 20:50	04:35 21:53	04:16 22:22	04:57 21:48	06:02 20:34	07:08 19:07	07:14 16:46	08:23 15:43	09:01 15:33
27	08:31 16:28	07:19 17:41	06:02 18:44	05:38 20:53	04:34 21:55	04:17 22:22	04:59 21:46	06:04 20:31	07:10 19:05	07:16 16:44	08:25 15:42	09:01 15:34
28	08:29 16:30	07:16 17:43	05:59 18:46	05:35 20:55	04:32 21:56	04:17 22:21	05:01 21:44	06:06 20:28	07:12 19:02	07:18 16:42	08:27 15:41	09:01 15:34
29	08:27 16:33		05:56 19:48	05:33 20:57	04:31 21:58	04:18 22:21	05:03 21:42	06:08 20:26	07:14 18:59	07:21 16:39	08:29 15:39	09:01 15:35
30	08:25 16:35		05:53 19:51	05:30 20:59	04:29 22:00	04:19 22:21	05:05 21:40	06:10 20:23	07:16 18:56	07:23 16:37	08:31 15:38	09:01 15:37
31	08:23 16:37		05:50 19:53		04:28 22:01		05:07 21:38	06:13 20:20		07:25 16:34		09:01 15:38
Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
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Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Raina iela 60 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (651)
Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:28 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
2	09:00 15:40	08:19 16:42	07:11 17:48	06:45 19:57	05:25 21:04	04:25 22:04	04:20 22:20	05:11 21:33	06:17 20:15	07:21 18:51	07:30 16:29	08:35 15:36
3	09:00 15:42	08:17 16:44	07:08 17:50	06:42 19:59	05:23 21:06	04:24 22:06	04:21 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:37 15:35
4	08:59 15:43	08:15 16:47	07:05 17:53	06:39 20:02	05:20 21:08	04:23 22:07	04:22 22:18	05:15 21:29	06:21 20:09	07:25 18:45	07:35 16:25	08:38 15:34
5	08:59 15:45	08:13 16:49	07:03 17:55	06:37 20:04	05:18 21:10	04:22 22:09	04:24 22:18	05:17 21:27	06:23 20:06	07:27 18:42	07:37 16:23	08:40 15:33
6	08:58 15:46	08:10 16:52	07:00 17:57	06:34 20:06	05:16 21:12	04:21 22:10	04:25 22:17	05:19 21:24	06:25 20:04	07:29 18:39	07:39 16:20	08:42 15:32
7	08:58 15:48	08:08 16:54	06:57 17:59	06:31 20:08	05:13 21:15	04:20 22:11	04:26 22:16	05:21 21:22	06:27 20:01	07:31 18:37	07:41 16:18	08:43 15:32
8	08:57 15:49	08:06 16:56	06:55 18:02	06:28 20:11	05:11 21:17	04:19 22:12	04:27 22:15	05:23 21:20	06:30 19:58	07:34 18:34	07:44 16:16	08:45 15:31
9	08:56 15:51	08:04 16:59	06:52 18:04	06:25 20:13	05:09 21:19	04:18 22:13	04:28 22:14	05:26 21:17	06:32 19:55	07:36 18:31	07:46 16:14	08:46 15:31
10	08:55 15:53	08:01 17:01	06:49 18:06	06:23 20:15	05:06 21:21	04:18 22:14	04:30 22:13	05:28 21:15	06:34 19:52	07:38 18:28	07:48 16:12	08:48 15:30
11	08:54 15:55	07:59 17:04	06:46 18:09	06:20 20:17	05:04 21:23	04:17 22:15	04:31 22:12	05:30 21:12	06:36 19:50	07:40 18:26	07:51 16:10	08:49 15:30
12	08:53 15:57	07:57 17:06	06:44 18:11	06:17 20:19	05:02 21:25	04:17 22:16	04:33 22:10	05:32 21:10	06:38 19:47	07:42 18:23	07:53 16:08	08:50 15:29
13	08:52 15:58	07:54 17:08	06:41 18:13	06:15 20:22	05:00 21:27	04:16 22:17	04:34 22:09	05:34 21:07	06:40 19:44	07:45 18:20	07:55 16:05	08:51 15:29
14	08:51 16:00	07:52 17:11	06:38 18:15	06:12 20:24	04:58 21:29	04:16 22:18	04:36 22:08	05:36 21:05	06:42 19:41	07:47 18:18	07:57 16:04	08:53 15:29
15	08:50 16:02	07:49 17:13	06:35 18:17	06:09 20:26	04:56 21:32	04:15 22:19	04:37 22:06	05:38 21:02	06:44 19:38	07:49 18:15	08:00 16:02	08:54 15:29
16	08:48 16:04	07:47 17:15	06:32 18:20	06:06 20:28	04:54 21:34	04:15 22:19	04:39 22:05	05:41 21:00	06:47 19:36	07:51 18:12	08:02 16:00	08:55 15:29
17	08:47 16:06	07:45 17:18	06:30 18:22	06:04 20:30	04:51 21:36	04:15 22:20	04:40 22:04	05:43 20:57	06:49 19:33	07:53 18:10	08:04 15:58	08:56 15:29
18	08:46 16:08	07:42 17:20	06:27 18:24	06:01 20:33	04:50 21:38	04:15 22:20	04:42 22:02	05:45 20:55	06:51 19:30	07:56 18:07	08:06 15:56	08:57 15:29
19	08:44 16:10	07:40 17:22	06:24 18:26	05:58 20:35	04:48 21:40	04:15 22:21	04:44 22:00	05:47 20:52	06:53 19:27	07:58 18:04	08:09 15:54	08:57 15:29
20	08:43 16:13	07:37 17:25	06:21 18:29	05:56 20:37	04:46 21:42	04:15 22:21	04:46 21:59	05:49 20:50	06:55 19:24	08:00 18:02	08:11 15:53	08:58 15:29
21	08:41 16:15	07:34 17:27	06:18 18:31	05:53 20:39	04:44 21:44	04:15 22:22	04:47 21:57	05:51 20:47	06:57 19:21	08:02 17:59	08:13 15:51	08:59 15:30
22	08:40 16:17	07:32 17:30	06:16 18:33	05:50 20:41	04:42 21:45	04:15 22:22	04:49 21:55	05:53 20:44	06:59 19:19	08:05 17:57	08:15 15:49	08:59 15:30
23	08:38 16:19	07:29 17:32	06:13 18:35	05:48 20:44	04:40 21:47	04:15 22:22	04:51 21:53	05:56 20:42	07:01 19:16	08:07 17:54	08:17 15:48	09:00 15:31
24	08:36 16:21	07:27 17:34	06:10 18:37	05:45 20:46	04:39 21:49	04:15 22:22	04:53 21:52	05:58 20:39	07:03 19:13	08:09 17:51	08:19 15:46	09:00 15:31
25	08:35 16:24	07:24 17:37	06:07 18:40	05:43 20:48	04:37 21:51	04:16 22:22	04:55 21:50	06:00 20:36	07:06 19:10	07:11 16:49	08:21 15:45	09:00 15:32
26	08:33 16:26	07:21 17:39	06:04 18:42	05:40 20:50	04:35 21:53	04:16 22:22	04:57 21:48	06:02 20:34	07:08 19:07	07:14 16:46	08:23 15:43	09:01 15:33
27	08:31 16:28	07:19 17:41	06:02 18:44	05:38 20:53	04:34 21:55	04:17 22:22	04:59 21:46	06:04 20:31	07:10 19:05	07:16 16:44	08:25 15:42	09:01 15:34
28	08:29 16:30	07:16 17:43	05:59 18:46	05:35 20:55	04:32 21:56	04:17 22:21	05:01 21:44	06:06 20:28	07:12 19:02	07:18 16:41	08:27 15:41	09:01 15:34
29	08:27 16:33		05:56 19:48	05:32 20:57	04:31 21:58	04:18 22:21	05:03 21:42	06:08 20:26	07:14 18:59	07:21 16:39	08:29 15:39	09:01 15:35
30	08:25 16:35		05:53 19:51	05:30 20:59	04:29 22:00	04:19 22:21	05:05 21:40	06:10 20:23	07:16 18:56	07:23 16:37	08:31 15:38	09:01 15:37
31	08:23 16:37		05:50 19:53		04:28 22:01		05:07 21:38	06:13 20:20		07:25 16:34		09:01 15:38
Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Raina iela 61 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (715)
 Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:28 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
2	09:00 15:41	08:19 16:42	07:11 17:48	06:45 19:57	05:25 21:04	04:25 22:04	04:21 22:20	05:11 21:33	06:17 20:15	07:21 18:51	07:30 16:29	08:35 15:36
3	09:00 15:42	08:17 16:45	07:08 17:50	06:42 19:59	05:23 21:06	04:24 22:06	04:21 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:37 15:35
4	08:59 15:43	08:15 16:47	07:05 17:53	06:39 20:02	05:20 21:08	04:23 22:07	04:22 22:18	05:15 21:29	06:21 20:09	07:25 18:45	07:35 16:25	08:38 15:34
5	08:59 15:45	08:13 16:49	07:03 17:55	06:37 20:04	05:18 21:10	04:22 22:09	04:24 22:18	05:17 21:27	06:23 20:06	07:27 18:42	07:37 16:23	08:40 15:33
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7	08:58 15:48	08:08 16:54	06:57 17:59	06:31 20:08	05:13 21:15	04:20 22:11	04:26 22:16	05:21 21:22	06:27 20:01	07:31 18:37	07:41 16:18	08:43 15:32
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10	08:55 15:53	08:01 17:01	06:49 18:06	06:23 20:15	05:06 21:21	04:18 22:14	04:30 22:13	05:28 21:15	06:34 19:52	07:38 18:28	07:48 16:12	08:48 15:30
11	08:54 15:55	07:59 17:04	06:46 18:09	06:20 20:17	05:04 21:23	04:17 22:15	04:31 22:12	05:30 21:12	06:36 19:50	07:40 18:26	07:51 16:10	08:49 15:30
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19	08:44 16:10	07:40 17:22	06:24 18:26	05:58 20:35	04:48 21:40	04:15 22:21	04:44 22:00	05:47 20:52	06:53 19:27	07:58 18:04	08:09 15:54	08:57 15:29
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21	08:41 16:15	07:34 17:27	06:18 18:31	05:53 20:39	04:44 21:44	04:15 22:22	04:47 21:57	05:51 20:47	06:57 19:21	08:02 17:59	08:13 15:51	08:59 15:30
22	08:40 16:17	07:32 17:30	06:16 18:33	05:50 20:41	04:42 21:46	04:15 22:22	04:49 21:55	05:53 20:44	06:59 19:19	08:05 17:57	08:15 15:49	08:59 15:30
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29	08:27 16:33		05:56 19:48	05:33 20:57	04:31 21:58	04:18 22:21	05:03 21:42	06:08 20:26	07:14 18:59	07:21 16:39	08:29 15:39	09:01 15:35
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Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Raina iela 62 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (662)
 Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:28 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
2	09:00 15:40	08:19 16:42	07:11 17:48	06:45 19:57	05:25 21:04	04:25 22:04	04:20 22:20	05:11 21:33	06:17 20:15	07:21 18:51	07:30 16:29	08:35 15:36
3	09:00 15:42	08:17 16:44	07:08 17:50	06:42 19:59	05:23 21:06	04:24 22:06	04:21 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:37 15:35
4	08:59 15:43	08:15 16:47	07:05 17:53	06:39 20:02	05:20 21:08	04:23 22:07	04:22 22:18	05:15 21:29	06:21 20:09	07:25 18:45	07:35 16:25	08:38 15:34
5	08:59 15:45	08:13 16:49	07:03 17:55	06:37 20:04	05:18 21:10	04:22 22:09	04:24 22:18	05:17 21:27	06:23 20:06	07:27 18:42	07:37 16:23	08:40 15:33
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31	08:23 16:37		05:50 19:53		04:28 22:01		05:07 21:38	06:13 20:20		07:25 16:34		09:01 15:38
Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Raina iela 64 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (645)
Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:28 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
2	09:00 15:40	08:19 16:42	07:11 17:48	06:45 19:57	05:25 21:04	04:25 22:04	04:20 22:20	05:11 21:33	06:17 20:15	07:21 18:51	07:30 16:29	08:35 15:36
3	09:00 15:42	08:17 16:44	07:08 17:50	06:42 19:59	05:23 21:06	04:24 22:06	04:21 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:37 15:35
4	08:59 15:43	08:15 16:47	07:05 17:53	06:39 20:02	05:20 21:08	04:23 22:07	04:22 22:18	05:15 21:29	06:21 20:09	07:25 18:45	07:35 16:25	08:38 15:34
5	08:59 15:45	08:13 16:49	07:03 17:55	06:37 20:04	05:18 21:10	04:22 22:09	04:24 22:18	05:17 21:27	06:23 20:06	07:27 18:42	07:37 16:23	08:40 15:33
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31	08:23 16:37		05:50 19:53		04:28 22:01		05:07 21:38	06:13 20:20		07:25 16:34		09:01 15:38
Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Raina iela 66 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (647)
 Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:28 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
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21	08:41 16:15	07:34 17:27	06:18 18:31	05:53 20:39	04:44 21:44	04:15 22:22	04:47 21:57	05:51 20:47	06:57 19:21	08:02 17:59	08:13 15:51	08:59 15:30
22	08:40 16:17	07:32 17:30	06:16 18:33	05:50 20:41	04:42 21:46	04:15 22:22	04:49 21:55	05:53 20:44	06:59 19:19	08:05 17:57	08:15 15:49	08:59 15:30
23	08:38 16:19	07:29 17:32	06:13 18:35	05:48 20:44	04:40 21:47	04:15 22:22	04:51 21:53	05:56 20:42	07:01 19:16	08:07 17:54	08:17 15:48	09:00 15:31
24	08:36 16:21	07:27 17:34	06:10 18:37	05:45 20:46	04:39 21:49	04:15 22:22	04:53 21:52	05:58 20:39	07:03 19:13	08:09 17:51	08:19 15:46	09:00 15:31
25	08:35 16:24	07:24 17:37	06:07 18:40	05:43 20:48	04:37 21:51	04:16 22:22	04:55 21:50	06:00 20:36	07:06 19:10	07:12 16:49	08:21 15:45	09:00 15:32
26	08:33 16:26	07:21 17:39	06:04 18:42	05:40 20:50	04:35 21:53	04:16 22:22	04:57 21:48	06:02 20:34	07:08 19:07	07:14 16:46	08:23 15:43	09:01 15:33
27	08:31 16:28	07:19 17:41	06:02 18:44	05:38 20:53	04:34 21:55	04:17 22:22	04:59 21:46	06:04 20:31	07:10 19:05	07:16 16:44	08:25 15:42	09:01 15:34
28	08:29 16:30	07:16 17:43	05:59 18:46	05:35 20:55	04:32 21:56	04:17 22:21	05:01 21:44	06:06 20:28	07:12 19:02	07:18 16:42	08:27 15:41	09:01 15:34
29	08:27 16:33		05:56 19:48	05:32 20:57	04:31 21:58	04:18 22:21	05:03 21:42	06:08 20:26	07:14 18:59	07:21 16:39	08:29 15:39	09:01 15:35
30	08:25 16:35		05:53 19:51	05:30 20:59	04:29 22:00	04:19 22:21	05:05 21:40	06:10 20:23	07:16 18:56	07:23 16:37	08:31 15:38	09:01 15:37
31	08:23 16:37		05:50 19:53		04:28 22:01		05:07 21:38	06:13 20:20		07:25 16:34		09:01 15:38
Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Raina iela 72 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (652)
 Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:28 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
2	09:00 15:40	08:19 16:42	07:11 17:48	06:45 19:57	05:25 21:04	04:25 22:04	04:21 22:20	05:11 21:33	06:17 20:15	07:21 18:51	07:30 16:29	08:35 15:36
3	09:00 15:42	08:17 16:45	07:08 17:50	06:42 19:59	05:23 21:06	04:24 22:06	04:21 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:37 15:35
4	08:59 15:43	08:15 16:47	07:05 17:53	06:39 20:02	05:20 21:08	04:23 22:07	04:22 22:18	05:15 21:29	06:21 20:09	07:25 18:45	07:35 16:25	08:38 15:34
5	08:59 15:45	08:13 16:49	07:03 17:55	06:37 20:04	05:18 21:10	04:22 22:09	04:24 22:18	05:17 21:27	06:23 20:06	07:27 18:42	07:37 16:23	08:40 15:33
6	08:58 15:46	08:10 16:52	07:00 17:57	06:34 20:06	05:16 21:12	04:21 22:10	04:25 22:17	05:19 21:24	06:25 20:04	07:29 18:39	07:39 16:20	08:42 15:32
7	08:58 15:48	08:08 16:54	06:57 17:59	06:31 20:08	05:13 21:15	04:20 22:11	04:26 22:16	05:21 21:22	06:27 20:01	07:31 18:37	07:41 16:18	08:43 15:32
8	08:57 15:49	08:06 16:56	06:55 18:02	06:28 20:11	05:11 21:17	04:19 22:12	04:27 22:15	05:24 21:20	06:30 19:58	07:34 18:34	07:44 16:16	08:45 15:31
9	08:56 15:51	08:04 16:59	06:52 18:04	06:25 20:13	05:09 21:19	04:18 22:13	04:28 22:14	05:26 21:17	06:32 19:55	07:36 18:31	07:46 16:14	08:46 15:31
10	08:55 15:53	08:01 17:01	06:49 18:06	06:23 20:15	05:06 21:21	04:18 22:14	04:30 22:13	05:28 21:15	06:34 19:52	07:38 18:28	07:48 16:12	08:48 15:30
11	08:54 15:55	07:59 17:04	06:46 18:09	06:20 20:17	05:04 21:23	04:17 22:15	04:31 22:12	05:30 21:12	06:36 19:50	07:40 18:26	07:51 16:10	08:49 15:30
12	08:53 15:57	07:57 17:06	06:44 18:11	06:17 20:19	05:02 21:25	04:17 22:16	04:33 22:10	05:32 21:10	06:38 19:47	07:42 18:23	07:53 16:08	08:50 15:29
13	08:52 15:58	07:54 17:08	06:41 18:13	06:15 20:22	05:00 21:27	04:16 22:17	04:34 22:09	05:34 21:07	06:40 19:44	07:45 18:20	07:55 16:06	08:51 15:29
14	08:51 16:00	07:52 17:11	06:38 18:15	06:12 20:24	04:58 21:30	04:16 22:18	04:36 22:08	05:36 21:05	06:42 19:41	07:47 18:18	07:57 16:04	08:53 15:29
15	08:50 16:02	07:49 17:13	06:35 18:17	06:09 20:26	04:56 21:32	04:15 22:19	04:37 22:06	05:38 21:02	06:44 19:38	07:49 18:15	08:00 16:02	08:54 15:29
16	08:48 16:04	07:47 17:15	06:32 18:20	06:06 20:28	04:54 21:34	04:15 22:19	04:39 22:05	05:41 21:00	06:47 19:36	07:51 18:12	08:02 16:00	08:55 15:29
17	08:47 16:06	07:45 17:18	06:30 18:22	06:04 20:30	04:52 21:36	04:15 22:20	04:40 22:04	05:43 20:57	06:49 19:33	07:53 18:10	08:04 15:58	08:56 15:29
18	08:46 16:08	07:42 17:20	06:27 18:24	06:01 20:33	04:50 21:38	04:15 22:20	04:42 22:02	05:45 20:55	06:51 19:30	07:56 18:07	08:06 15:56	08:57 15:29
19	08:44 16:10	07:40 17:22	06:24 18:26	05:58 20:35	04:48 21:40	04:15 22:21	04:44 22:00	05:47 20:52	06:53 19:27	07:58 18:04	08:09 15:54	08:57 15:29
20	08:43 16:13	07:37 17:25	06:21 18:29	05:56 20:37	04:46 21:42	04:15 22:21	04:46 21:59	05:49 20:50	06:55 19:24	08:00 18:02	08:11 15:53	08:58 15:29
21	08:41 16:15	07:34 17:27	06:18 18:31	05:53 20:39	04:44 21:44	04:15 22:22	04:47 21:57	05:51 20:47	06:57 19:21	08:02 17:59	08:13 15:51	08:59 15:30
22	08:40 16:17	07:32 17:30	06:16 18:33	05:50 20:41	04:42 21:46	04:15 22:22	04:49 21:55	05:53 20:44	06:59 19:19	08:05 17:57	08:15 15:49	08:59 15:30
23	08:38 16:19	07:29 17:32	06:13 18:35	05:48 20:44	04:40 21:47	04:15 22:22	04:51 21:53	05:56 20:42	07:01 19:16	08:07 17:54	08:17 15:48	09:00 15:31
24	08:36 16:21	07:27 17:34	06:10 18:37	05:45 20:46	04:39 21:49	04:15 22:22	04:53 21:52	05:58 20:39	07:03 19:13	08:09 17:52	08:19 15:46	09:00 15:31
25	08:35 16:24	07:24 17:37	06:07 18:40	05:43 20:48	04:37 21:51	04:16 22:22	04:55 21:50	06:00 20:36	07:06 19:10	07:12 16:49	08:21 15:45	09:00 15:32
26	08:33 16:26	07:21 17:39	06:04 18:42	05:40 20:50	04:35 21:53	04:16 22:22	04:57 21:48	06:02 20:34	07:08 19:07	07:14 16:46	08:23 15:43	09:01 15:33
27	08:31 16:28	07:19 17:41	06:02 18:44	05:38 20:53	04:34 21:55	04:17 22:22	04:59 21:46	06:04 20:31	07:10 19:05	07:16 16:44	08:25 15:42	09:01 15:34
28	08:29 16:30	07:16 17:43	05:59 18:46	05:35 20:55	04:32 21:56	04:17 22:21	05:01 21:44	06:06 20:28	07:12 19:02	07:18 16:42	08:27 15:41	09:01 15:34
29	08:27 16:33		06:56 19:48	05:33 20:57	04:31 21:58	04:18 22:21	05:03 21:42	06:08 20:26	07:14 18:59	07:21 16:39	08:29 15:39	09:01 15:35
30	08:25 16:35		06:53 19:51	05:30 20:59	04:29 22:00	04:19 22:21	05:05 21:40	06:10 20:23	07:16 18:56	07:23 16:37	08:31 15:38	09:01 15:37
31	08:23 16:37		06:50 19:53		04:28 22:01		05:07 21:38	06:13 20:20		07:25 16:34		09:01 15:38
Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Raina iela 74 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (661) Sunshine probability S (Average daily sunshine hours) []

Assumptions for shadow calculations

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
0.80 1.82 4.75 6.09 9.67 10.05 8.16 7.72 5.94 2.93 0.63 0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:14 17:46	06:48 19:55	05:28 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
2	09:00 15:41	08:19 16:42	07:11 17:48	06:45 19:57	05:25 21:04	04:25 22:04	04:21 22:20	05:11 21:33	06:17 20:15	07:21 18:51	07:30 16:29	08:35 15:36
3	09:00 15:42	08:17 16:45	07:08 17:50	06:42 19:59	05:23 21:06	04:24 22:06	04:21 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:37 15:35
4	08:59 15:43	08:15 16:47	07:05 17:53	06:39 20:02	05:20 21:08	04:23 22:07	04:22 22:18	05:15 21:29	06:21 20:09	07:25 18:45	07:35 16:25	08:38 15:34
5	08:59 15:45	08:13 16:49	07:03 17:55	06:37 20:04	05:18 21:10	04:22 22:09	04:24 22:18	05:17 21:27	06:23 20:06	07:27 18:42	07:37 16:23	08:40 15:33
6	08:58 15:46	08:10 16:52	07:00 17:57	06:34 20:06	05:16 21:12	04:21 22:10	04:25 22:17	05:19 21:24	06:25 20:04	07:29 18:39	07:39 16:20	08:42 15:32
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8	08:57 15:49	08:06 16:56	06:55 18:02	06:28 20:11	05:11 21:17	04:19 22:12	04:27 22:15	05:24 21:20	06:30 19:58	07:34 18:34	07:44 16:16	08:45 15:31
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10	08:55 15:53	08:01 17:01	06:49 18:06	06:23 20:15	05:06 21:21	04:18 22:14	04:30 22:13	05:28 21:15	06:34 19:52	07:38 18:28	07:48 16:12	08:48 15:30
11	08:54 15:55	07:59 17:04	06:46 18:09	06:20 20:17	05:04 21:23	04:17 22:15	04:31 22:12	05:30 21:12	06:36 19:50	07:40 18:26	07:51 16:10	08:49 15:30
12	08:53 15:57	07:57 17:06	06:44 18:11	06:17 20:19	05:02 21:25	04:17 22:16	04:33 22:10	05:32 21:10	06:38 19:47	07:42 18:23	07:53 16:08	08:50 15:29
13	08:52 15:58	07:54 17:08	06:41 18:13	06:15 20:22	05:00 21:27	04:16 22:17	04:34 22:09	05:34 21:07	06:40 19:44	07:45 18:20	07:55 16:06	08:51 15:29
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21	08:41 16:15	07:34 17:27	06:18 18:31	05:53 20:39	04:44 21:44	04:15 22:22	04:47 21:57	05:51 20:47	06:57 19:21	08:02 17:59	08:13 15:51	08:59 15:30
22	08:40 16:17	07:32 17:30	06:16 18:33	05:50 20:41	04:42 21:46	04:15 22:22	04:49 21:55	05:53 20:44	06:59 19:19	08:05 17:57	08:15 15:49	08:59 15:30
23	08:38 16:19	07:29 17:32	06:13 18:35	05:48 20:44	04:40 21:47	04:15 22:22	04:51 21:53	05:56 20:42	07:01 19:16	08:07 17:54	08:17 15:48	09:00 15:31
24	08:36 16:21	07:27 17:34	06:10 18:37	05:45 20:46	04:39 21:49	04:15 22:22	04:53 21:52	05:58 20:39	07:03 19:13	08:09 17:52	08:19 15:46	09:00 15:31
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29	08:27 16:33		06:56 19:48	05:33 20:57	04:31 21:58	04:18 22:21	05:03 21:42	06:08 20:26	07:14 18:59	07:21 16:39	08:29 15:39	09:01 15:35
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Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Last time (hh:mm) with flicker	(WTG causing flicker last time)
	Minutes with flicker		

Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Raina iela 76 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (660) Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
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5	08:59 15:45	08:13 16:49	07:03 17:55	06:37 20:04	05:18 21:10	04:22 22:09	04:24 22:18	05:17 21:27	06:23 20:06	07:27 18:42	07:37 16:23	08:40 15:33
6	08:58 15:46	08:10 16:52	07:00 17:57	06:34 20:06	05:16 21:12	04:21 22:10	04:25 22:17	05:19 21:24	06:25 20:04	07:29 18:39	07:39 16:20	08:42 15:32
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9	08:56 15:51	08:04 16:59	06:52 18:04	06:25 20:13	05:09 21:19	04:18 22:13	04:28 22:14	05:26 21:17	06:32 19:55	07:36 18:31	07:46 16:14	08:46 15:31
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31	08:23 16:37		05:50 19:53		04:28 22:01		05:07 21:38	06:13 20:20		07:25 16:34		09:01 15:38
Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Raina iela 78 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (759)
 Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:14 17:46	06:48 19:55	05:28 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
2	09:00 15:41	08:19 16:42	07:11 17:48	06:45 19:57	05:25 21:04	04:25 22:04	04:21 22:20	05:11 21:33	06:17 20:15	07:21 18:51	07:30 16:30	08:35 15:36
3	09:00 15:42	08:17 16:45	07:08 17:50	06:42 20:00	05:23 21:06	04:24 22:06	04:22 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:37 15:35
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31	08:23 16:38		06:51 19:53		04:28 22:01		05:07 21:38	06:13 20:20		07:25 16:34		09:01 15:38
Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Raina iela 78A - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (679)
Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:14 17:46	06:48 19:55	05:28 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
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25	08:35 16:24	07:24 17:37	06:07 18:40	05:43 20:48	04:37 21:51	04:16 22:22	04:55 21:50	06:00 20:36	07:06 19:10	07:12 16:49	08:21 15:45	09:00 15:32
26	08:33 16:26	07:21 17:39	06:04 18:42	05:40 20:50	04:35 21:53	04:16 22:22	04:57 21:48	06:02 20:34	07:08 19:07	07:14 16:46	08:23 15:43	09:01 15:33
27	08:31 16:28	07:19 17:41	06:02 18:44	05:38 20:53	04:34 21:55	04:17 22:22	04:59 21:46	06:04 20:31	07:10 19:05	07:16 16:44	08:25 15:42	09:01 15:34
28	08:29 16:30	07:16 17:43	05:59 18:46	05:35 20:55	04:32 21:56	04:17 22:21	05:01 21:44	06:06 20:28	07:12 19:02	07:18 16:42	08:27 15:41	09:01 15:35
29	08:27 16:33		06:56 19:48	05:33 20:57	04:31 21:58	04:18 22:21	05:03 21:42	06:08 20:26	07:14 18:59	07:21 16:39	08:29 15:39	09:01 15:35
30	08:25 16:35		06:53 19:51	05:30 20:59	04:29 22:00	04:19 22:21	05:05 21:40	06:11 20:23	07:16 18:56	07:23 16:37	08:31 15:38	09:01 15:37
31	08:23 16:37		06:50 19:53		04:28 22:01		05:07 21:38	06:13 20:20		07:25 16:34		09:01 15:38
Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Raina iela 80 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (653)
 Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:14 17:46	06:48 19:55	05:28 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
2	09:00 15:41	08:19 16:42	07:11 17:48	06:45 19:57	05:25 21:04	04:25 22:04	04:21 22:20	05:11 21:33	06:17 20:15	07:21 18:51	07:30 16:30	08:35 15:36
3	09:00 15:42	08:17 16:45	07:08 17:50	06:42 19:59	05:23 21:06	04:24 22:06	04:21 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:37 15:35
4	08:59 15:43	08:15 16:47	07:05 17:53	06:39 20:02	05:20 21:08	04:23 22:07	04:22 22:18	05:15 21:29	06:21 20:09	07:25 18:45	07:35 16:25	08:38 15:34
5	08:59 15:45	08:13 16:49	07:03 17:55	06:37 20:04	05:18 21:10	04:22 22:09	04:24 22:18	05:17 21:27	06:23 20:06	07:27 18:42	07:37 16:23	08:40 15:33
6	08:58 15:46	08:10 16:52	07:00 17:57	06:34 20:06	05:16 21:12	04:21 22:10	04:25 22:17	05:19 21:24	06:25 20:04	07:29 18:39	07:39 16:20	08:42 15:32
7	08:58 15:48	08:08 16:54	06:57 17:59	06:31 20:08	05:13 21:15	04:20 22:11	04:26 22:16	05:21 21:22	06:28 20:01	07:31 18:37	07:41 16:18	08:43 15:32
8	08:57 15:49	08:06 16:56	06:55 18:02	06:28 20:11	05:11 21:17	04:19 22:12	04:27 22:15	05:24 21:20	06:30 19:58	07:34 18:34	07:44 16:16	08:45 15:31
9	08:56 15:51	08:04 16:59	06:52 18:04	06:25 20:13	05:09 21:19	04:18 22:13	04:28 22:14	05:26 21:17	06:32 19:55	07:36 18:31	07:46 16:14	08:46 15:31
10	08:55 15:53	08:01 17:01	06:49 18:06	06:23 20:15	05:06 21:21	04:18 22:14	04:30 22:13	05:28 21:15	06:34 19:52	07:38 18:28	07:48 16:12	08:48 15:30
11	08:54 15:55	07:59 17:04	06:46 18:09	06:20 20:17	05:04 21:23	04:17 22:15	04:31 22:12	05:30 21:12	06:36 19:50	07:40 18:26	07:51 16:10	08:49 15:30
12	08:53 15:57	07:57 17:06	06:44 18:11	06:17 20:19	05:02 21:25	04:17 22:16	04:33 22:10	05:32 21:10	06:38 19:47	07:42 18:23	07:53 16:08	08:50 15:29
13	08:52 15:58	07:54 17:08	06:41 18:13	06:15 20:22	05:00 21:27	04:16 22:17	04:34 22:09	05:34 21:07	06:40 19:44	07:45 18:20	07:55 16:06	08:51 15:29
14	08:51 16:00	07:52 17:11	06:38 18:15	06:12 20:24	04:58 21:30	04:16 22:18	04:36 22:08	05:36 21:05	06:42 19:41	07:47 18:18	07:57 16:04	08:53 15:29
15	08:50 16:02	07:49 17:13	06:35 18:18	06:09 20:26	04:56 21:32	04:15 22:19	04:37 22:06	05:38 21:02	06:44 19:38	07:49 18:15	08:00 16:02	08:54 15:29
16	08:48 16:04	07:47 17:15	06:32 18:20	06:06 20:28	04:54 21:34	04:15 22:19	04:39 22:05	05:41 21:00	06:47 19:36	07:51 18:12	08:02 16:00	08:55 15:29
17	08:47 16:06	07:45 17:18	06:30 18:22	06:04 20:30	04:52 21:36	04:15 22:20	04:40 22:04	05:43 20:57	06:49 19:33	07:53 18:10	08:04 15:58	08:56 15:29
18	08:46 16:08	07:42 17:20	06:27 18:24	06:01 20:33	04:50 21:38	04:15 22:20	04:42 22:02	05:45 20:55	06:51 19:30	07:56 18:07	08:06 15:56	08:57 15:29
19	08:44 16:11	07:40 17:22	06:24 18:26	05:58 20:35	04:48 21:40	04:15 22:21	04:44 22:00	05:47 20:52	06:53 19:27	07:58 18:04	08:09 15:54	08:57 15:29
20	08:43 16:13	07:37 17:25	06:21 18:29	05:56 20:37	04:46 21:42	04:15 22:21	04:46 21:59	05:49 20:50	06:55 19:24	08:00 18:02	08:11 15:53	08:58 15:29
21	08:41 16:15	07:34 17:27	06:18 18:31	05:53 20:39	04:44 21:44	04:15 22:22	04:47 21:57	05:51 20:47	06:57 19:21	08:02 17:59	08:13 15:51	08:59 15:30
22	08:40 16:17	07:32 17:30	06:16 18:33	05:50 20:42	04:42 21:46	04:15 22:22	04:49 21:55	05:53 20:44	06:59 19:19	08:05 17:57	08:15 15:49	08:59 15:30
23	08:38 16:19	07:29 17:32	06:13 18:35	05:48 20:44	04:40 21:47	04:15 22:22	04:51 21:53	05:56 20:42	07:01 19:16	08:07 17:54	08:17 15:48	09:00 15:31
24	08:36 16:21	07:27 17:34	06:10 18:37	05:45 20:46	04:39 21:49	04:15 22:22	04:53 21:52	05:58 20:39	07:03 19:13	08:09 17:52	08:19 15:46	09:00 15:31
25	08:35 16:24	07:24 17:37	06:07 18:40	05:43 20:48	04:37 21:51	04:16 22:22	04:55 21:50	06:00 20:36	07:06 19:10	07:12 16:49	08:21 15:45	09:00 15:32
26	08:33 16:26	07:21 17:39	06:04 18:42	05:40 20:50	04:35 21:53	04:16 22:22	04:57 21:48	06:02 20:34	07:08 19:07	07:14 16:46	08:23 15:43	09:01 15:33
27	08:31 16:28	07:19 17:41	06:02 18:44	05:38 20:53	04:34 21:55	04:17 22:22	04:59 21:46	06:04 20:31	07:10 19:05	07:16 16:44	08:25 15:42	09:01 15:34
28	08:29 16:30	07:16 17:43	05:59 18:46	05:35 20:55	04:32 21:56	04:17 22:21	05:01 21:44	06:06 20:28	07:12 19:02	07:18 16:42	08:27 15:41	09:01 15:35
29	08:27 16:33		05:56 19:48	05:33 20:57	04:31 21:58	04:18 22:21	05:03 21:42	06:08 20:26	07:14 18:59	07:21 16:39	08:29 15:39	09:01 15:35
30	08:25 16:35		05:53 19:51	05:30 20:59	04:29 22:00	04:19 22:21	05:05 21:40	06:11 20:23	07:16 18:56	07:23 16:37	08:31 15:38	09:01 15:37
31	08:23 16:37		05:50 19:53		04:28 22:01		05:07 21:38	06:13 20:20		07:25 16:34		09:01 15:38
Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Raina iela 82 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (682)
 Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:14 17:46	06:48 19:55	05:28 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
2	09:00 15:41	08:19 16:42	07:11 17:48	06:45 19:57	05:25 21:04	04:25 22:04	04:21 22:20	05:11 21:33	06:17 20:15	07:21 18:51	07:30 16:30	08:35 15:36
3	09:00 15:42	08:17 16:45	07:08 17:50	06:42 19:59	05:23 21:06	04:24 22:06	04:21 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:37 15:35
4	08:59 15:43	08:15 16:47	07:05 17:53	06:39 20:02	05:20 21:08	04:23 22:07	04:22 22:18	05:15 21:29	06:21 20:09	07:25 18:45	07:35 16:25	08:38 15:34
5	08:59 15:45	08:13 16:49	07:03 17:55	06:37 20:04	05:18 21:10	04:22 22:09	04:24 22:18	05:17 21:27	06:23 20:06	07:27 18:42	07:37 16:23	08:40 15:33
6	08:58 15:46	08:10 16:52	07:00 17:57	06:34 20:06	05:16 21:12	04:21 22:10	04:25 22:17	05:19 21:24	06:25 20:04	07:29 18:39	07:39 16:20	08:42 15:32
7	08:58 15:48	08:08 16:54	06:57 18:00	06:31 20:08	05:13 21:15	04:20 22:11	04:26 22:16	05:21 21:22	06:28 20:01	07:31 18:37	07:41 16:18	08:43 15:32
8	08:57 15:49	08:06 16:56	06:55 18:02	06:28 20:11	05:11 21:17	04:19 22:12	04:27 22:15	05:24 21:20	06:30 19:58	07:34 18:34	07:44 16:16	08:45 15:31
9	08:56 15:51	08:04 16:59	06:52 18:04	06:25 20:13	05:09 21:19	04:18 22:13	04:28 22:14	05:26 21:17	06:32 19:55	07:36 18:31	07:46 16:14	08:46 15:31
10	08:55 15:53	08:01 17:01	06:49 18:06	06:23 20:15	05:06 21:21	04:18 22:14	04:30 22:13	05:28 21:15	06:34 19:52	07:38 18:29	07:48 16:12	08:48 15:30
11	08:54 15:55	07:59 17:04	06:46 18:09	06:20 20:17	05:04 21:23	04:17 22:15	04:31 22:12	05:30 21:12	06:36 19:50	07:40 18:26	07:51 16:10	08:49 15:30
12	08:53 15:57	07:57 17:06	06:44 18:11	06:17 20:19	05:02 21:25	04:17 22:16	04:33 22:10	05:32 21:10	06:38 19:47	07:42 18:23	07:53 16:08	08:50 15:29
13	08:52 15:58	07:54 17:08	06:41 18:13	06:15 20:22	05:00 21:27	04:16 22:17	04:34 22:09	05:34 21:07	06:40 19:44	07:45 18:20	07:55 16:06	08:51 15:29
14	08:51 16:00	07:52 17:11	06:38 18:15	06:12 20:24	04:58 21:30	04:16 22:18	04:36 22:08	05:36 21:05	06:42 19:41	07:47 18:18	07:57 16:04	08:53 15:29
15	08:50 16:02	07:49 17:13	06:35 18:18	06:09 20:26	04:56 21:32	04:15 22:19	04:37 22:06	05:38 21:02	06:44 19:38	07:49 18:15	08:00 16:02	08:54 15:29
16	08:48 16:04	07:47 17:15	06:32 18:20	06:06 20:28	04:54 21:34	04:15 22:19	04:39 22:05	05:41 21:00	06:47 19:36	07:51 18:12	08:02 16:00	08:55 15:29
17	08:47 16:06	07:45 17:18	06:30 18:22	06:04 20:30	04:52 21:36	04:15 22:20	04:41 22:04	05:43 20:57	06:49 19:33	07:53 18:10	08:04 15:58	08:56 15:29
18	08:46 16:08	07:42 17:20	06:27 18:24	06:01 20:33	04:50 21:38	04:15 22:20	04:42 22:02	05:45 20:55	06:51 19:30	07:56 18:07	08:06 15:56	08:57 15:29
19	08:44 16:11	07:40 17:22	06:24 18:26	05:58 20:35	04:48 21:40	04:15 22:21	04:44 22:00	05:47 20:52	06:53 19:27	07:58 18:04	08:09 15:54	08:57 15:29
20	08:43 16:13	07:37 17:25	06:21 18:29	05:56 20:37	04:46 21:42	04:15 22:21	04:46 21:59	05:49 20:50	06:55 19:24	08:00 18:02	08:11 15:53	08:58 15:29
21	08:41 16:15	07:34 17:27	06:18 18:31	05:53 20:39	04:44 21:44	04:15 22:22	04:47 21:57	05:51 20:47	06:57 19:21	08:02 17:59	08:13 15:51	08:59 15:30
22	08:40 16:17	07:32 17:30	06:16 18:33	05:50 20:42	04:42 21:46	04:15 22:22	04:49 21:55	05:53 20:44	06:59 19:19	08:05 17:57	08:15 15:49	08:59 15:30
23	08:38 16:19	07:29 17:32	06:13 18:35	05:48 20:44	04:40 21:47	04:15 22:22	04:51 21:53	05:56 20:42	07:01 19:16	08:07 17:54	08:17 15:48	09:00 15:31
24	08:36 16:21	07:27 17:34	06:10 18:37	05:45 20:46	04:39 21:49	04:15 22:22	04:53 21:52	05:58 20:39	07:03 19:13	08:09 17:52	08:19 15:46	09:00 15:31
25	08:35 16:24	07:24 17:37	06:07 18:40	05:43 20:48	04:37 21:51	04:16 22:22	04:55 21:50	06:00 20:36	07:06 19:10	07:12 16:49	08:21 15:45	09:00 15:32
26	08:33 16:26	07:21 17:39	06:04 18:42	05:40 20:50	04:35 21:53	04:16 22:22	04:57 21:48	06:02 20:34	07:08 19:07	07:14 16:46	08:23 15:43	09:01 15:33
27	08:31 16:28	07:19 17:41	06:02 18:44	05:38 20:53	04:34 21:55	04:17 22:22	04:59 21:46	06:04 20:31	07:10 19:05	07:16 16:44	08:25 15:42	09:01 15:34
28	08:29 16:30	07:16 17:43	05:59 18:46	05:35 20:55	04:32 21:56	04:17 22:21	05:01 21:44	06:06 20:28	07:12 19:02	07:18 16:42	08:27 15:41	09:01 15:35
29	08:27 16:33		05:56 19:48	05:33 20:57	04:31 21:58	04:18 22:21	05:03 21:42	06:08 20:26	07:14 18:59	07:21 16:39	08:29 15:39	09:01 15:35
30	08:25 16:35		05:53 19:51	05:30 20:59	04:29 22:00	04:19 22:21	05:05 21:40	06:11 20:23	07:16 18:56	07:23 16:37	08:31 15:38	09:01 15:37
31	08:23 16:37		05:50 19:53		04:28 22:01		05:07 21:38	06:13 20:20		07:25 16:34		09:01 15:38
Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Raina iela 84 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (646)
 Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:14 17:46	06:48 19:55	05:28 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
2	09:00 15:41	08:19 16:42	07:11 17:48	06:45 19:57	05:25 21:04	04:25 22:04	04:21 22:20	05:11 21:33	06:17 20:15	07:21 18:51	07:30 16:30	08:35 15:36
3	09:00 15:42	08:17 16:45	07:08 17:50	06:42 19:59	05:23 21:06	04:24 22:06	04:21 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:37 15:35
4	08:59 15:43	08:15 16:47	07:05 17:53	06:39 20:02	05:20 21:08	04:23 22:07	04:22 22:18	05:15 21:29	06:21 20:09	07:25 18:45	07:35 16:25	08:38 15:34
5	08:59 15:45	08:13 16:49	07:03 17:55	06:37 20:04	05:18 21:10	04:22 22:09	04:24 22:18	05:17 21:27	06:23 20:06	07:27 18:42	07:37 16:23	08:40 15:33
6	08:58 15:46	08:10 16:52	07:00 17:57	06:34 20:06	05:16 21:12	04:21 22:10	04:25 22:17	05:19 21:24	06:25 20:04	07:29 18:39	07:39 16:20	08:42 15:32
7	08:58 15:48	08:08 16:54	06:57 18:00	06:31 20:08	05:13 21:15	04:20 22:11	04:26 22:16	05:21 21:22	06:28 20:01	07:31 18:37	07:41 16:18	08:43 15:32
8	08:57 15:49	08:06 16:56	06:55 18:02	06:28 20:11	05:11 21:17	04:19 22:12	04:27 22:15	05:24 21:20	06:30 19:58	07:34 18:34	07:44 16:16	08:45 15:31
9	08:56 15:51	08:04 16:59	06:52 18:04	06:25 20:13	05:09 21:19	04:18 22:13	04:28 22:14	05:26 21:17	06:32 19:55	07:36 18:31	07:46 16:14	08:46 15:31
10	08:55 15:53	08:01 17:01	06:49 18:06	06:23 20:15	05:06 21:21	04:18 22:14	04:30 22:13	05:28 21:15	06:34 19:52	07:38 18:29	07:48 16:12	08:48 15:30
11	08:54 15:55	07:59 17:04	06:46 18:09	06:20 20:17	05:04 21:23	04:17 22:15	04:31 22:12	05:30 21:12	06:36 19:50	07:40 18:26	07:51 16:10	08:49 15:30
12	08:53 15:57	07:57 17:06	06:44 18:11	06:17 20:19	05:02 21:25	04:17 22:16	04:33 22:10	05:32 21:10	06:38 19:47	07:42 18:23	07:53 16:08	08:50 15:29
13	08:52 15:58	07:54 17:08	06:41 18:13	06:15 20:22	05:00 21:27	04:16 22:17	04:34 22:09	05:34 21:07	06:40 19:44	07:45 18:20	07:55 16:06	08:51 15:29
14	08:51 16:00	07:52 17:11	06:38 18:15	06:12 20:24	04:58 21:30	04:16 22:18	04:36 22:08	05:36 21:05	06:42 19:41	07:47 18:18	07:57 16:04	08:53 15:29
15	08:50 16:02	07:49 17:13	06:35 18:18	06:09 20:26	04:56 21:32	04:15 22:19	04:37 22:06	05:38 21:02	06:44 19:38	07:49 18:15	08:00 16:02	08:54 15:29
16	08:48 16:04	07:47 17:15	06:32 18:20	06:06 20:28	04:54 21:34	04:15 22:19	04:39 22:05	05:41 21:00	06:47 19:36	07:51 18:12	08:02 16:00	08:55 15:29
17	08:47 16:06	07:45 17:18	06:30 18:22	06:04 20:30	04:52 21:36	04:15 22:20	04:41 22:04	05:43 20:57	06:49 19:33	07:53 18:10	08:04 15:58	08:56 15:29
18	08:46 16:08	07:42 17:20	06:27 18:24	06:01 20:33	04:50 21:38	04:15 22:20	04:42 22:02	05:45 20:55	06:51 19:30	07:56 18:07	08:06 15:56	08:57 15:29
19	08:44 16:11	07:40 17:22	06:24 18:26	05:58 20:35	04:48 21:40	04:15 22:21	04:44 22:00	05:47 20:52	06:53 19:27	07:58 18:04	08:09 15:54	08:57 15:29
20	08:43 16:13	07:37 17:25	06:21 18:29	05:56 20:37	04:46 21:42	04:15 22:21	04:46 21:59	05:49 20:50	06:55 19:24	08:00 18:02	08:11 15:53	08:58 15:29
21	08:41 16:15	07:34 17:27	06:18 18:31	05:53 20:39	04:44 21:44	04:15 22:22	04:48 21:57	05:51 20:47	06:57 19:21	08:02 17:59	08:13 15:51	08:59 15:30
22	08:40 16:17	07:32 17:30	06:16 18:33	05:50 20:42	04:42 21:46	04:15 22:22	04:49 21:55	05:53 20:44	06:59 19:19	08:05 17:57	08:15 15:49	08:59 15:30
23	08:38 16:19	07:29 17:32	06:13 18:35	05:48 20:44	04:40 21:47	04:15 22:22	04:51 21:53	05:56 20:42	07:01 19:16	08:07 17:54	08:17 15:48	09:00 15:31
24	08:36 16:21	07:27 17:34	06:10 18:37	05:45 20:46	04:39 21:49	04:15 22:22	04:53 21:52	05:58 20:39	07:03 19:13	08:09 17:52	08:19 15:46	09:00 15:31
25	08:35 16:24	07:24 17:37	06:07 18:40	05:43 20:48	04:37 21:51	04:16 22:22	04:55 21:50	06:00 20:36	07:06 19:10	07:12 16:49	08:21 15:45	09:00 15:32
26	08:33 16:26	07:21 17:39	06:04 18:42	05:40 20:50	04:35 21:53	04:16 22:22	04:57 21:48	06:02 20:34	07:08 19:07	07:14 16:46	08:23 15:43	09:01 15:33
27	08:31 16:28	07:19 17:41	06:02 18:44	05:38 20:53	04:34 21:55	04:17 22:22	04:59 21:46	06:04 20:31	07:10 19:05	07:16 16:44	08:25 15:42	09:01 15:34
28	08:29 16:30	07:16 17:43	05:59 18:46	05:35 20:55	04:32 21:56	04:17 22:21	05:01 21:44	06:06 20:28	07:12 19:02	07:18 16:42	08:27 15:41	09:01 15:35
29	08:27 16:33		05:56 19:48	05:33 20:57	04:31 21:58	04:18 22:21	05:03 21:42	06:08 20:26	07:14 18:59	07:21 16:39	08:29 15:39	09:01 15:35
30	08:25 16:35		05:53 19:51	05:30 20:59	04:29 22:00	04:19 22:21	05:05 21:40	06:11 20:23	07:16 18:56	07:23 16:37	08:31 15:38	09:01 15:37
31	08:23 16:37		05:50 19:53		04:28 22:01		05:07 21:38	06:13 20:20		07:25 16:34		09:01 15:38
Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Riekstini - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (495)
 Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January			February			March	April	May	June
1	09:00		14:48 (12)	08:21		15:49 (14)	07:13	06:48	05:27	04:27
	15:39	5	14:53 (12)	16:40	14	16:03 (14)	17:46	19:55	21:01	22:02
2	09:00		14:48 (12)	08:19		15:50 (14)	07:11	06:45	05:25	04:25
	15:40	6	14:54 (12)	16:42	16	16:06 (14)	17:48	19:57	21:03	22:04
3	09:00		14:49 (12)	08:17		15:51 (14)	07:08	06:42	05:23	04:24
	15:42	7	14:56 (4)	16:44	16	16:07 (14)	17:50	19:59	21:06	22:05
4	08:59		14:49 (12)	08:15		15:51 (14)	07:05	06:39	05:20	04:23
	15:43	9	14:58 (4)	16:47	14	16:05 (14)	17:53	20:01	21:08	22:07
5	08:59		14:50 (12)	08:12		15:53 (14)	07:03	06:36	05:18	04:22
	15:45	9	14:59 (4)	16:49	12	16:05 (14)	17:55	20:04	21:10	22:08
6	08:58		14:50 (12)	08:10		15:54 (14)	07:00	06:34	05:15	04:21
	15:46	11	15:01 (4)	16:52	9	16:03 (14)	17:57	20:06	21:12	22:09
7	08:57		14:50 (12)	08:08			06:57	06:31	05:13	04:20
	15:48	13	15:03 (4)	16:54			17:59	20:08	21:14	22:11
8	08:57		14:51 (12)	08:06			06:54	06:28	05:11	04:19
	15:49	14	15:05 (4)	16:56			18:02	20:10	21:16	22:12
9	08:56		14:52 (12)	08:03			06:52	06:25	05:09	04:18
	15:51	15	15:07 (4)	16:59			18:04	20:12	21:19	22:13
10	08:55		14:53 (12)	08:01			06:49	06:23	05:06	04:18
	15:53	16	15:09 (4)	17:01			18:06	20:15	21:21	22:14
11	08:54		14:53 (12)	07:59			06:46	06:20	05:04	04:17
	15:55	18	15:11 (4)	17:03			18:08	20:17	21:23	22:15
12	08:53		14:54 (12)	07:56		16:30 (2)	06:43	06:17	05:02	04:17
	15:57	19	15:13 (4)	17:06	2	16:32 (2)	18:11	20:19	21:25	22:16
13	08:52		14:54 (12)	07:54		16:29 (2)	06:41	06:14	05:00	04:16
	15:58	21	15:15 (4)	17:08	6	16:35 (2)	18:13	20:21	21:27	22:17
14	08:51		14:55 (4)	07:52		16:27 (2)	06:38	06:12	04:58	04:16
	16:00	22	15:17 (4)	17:11	11	16:38 (2)	18:15	20:24	21:29	22:18
15	08:49		14:55 (4)	07:49		16:25 (2)	06:35	06:09	04:56	04:15
	16:02	22	15:17 (4)	17:13	15	16:40 (2)	18:17	20:26	21:31	22:18
16	08:48		14:56 (4)	07:47		16:25 (2)	06:32	06:06	04:53	04:15
	16:04	22	15:18 (4)	17:15	18	16:43 (2)	18:20	20:28	21:33	22:19
17	08:47		14:56 (4)	07:44		16:24 (2)	06:29	06:04	04:51	04:15
	16:06	22	15:18 (4)	17:18	21	16:45 (2)	18:22	20:30	21:35	22:20
18	08:45		14:56 (4)	07:42		16:23 (2)	06:27	06:01	04:49	04:15
	16:08	22	15:18 (4)	17:20	24	16:47 (2)	18:24	20:32	21:37	22:20
19	08:44		14:57 (4)	07:39		16:24 (2)	06:24	05:58	04:48	04:15
	16:10	21	15:18 (4)	17:22	27	16:51 (3)	18:26	20:35	21:39	22:21
20	08:42		14:58 (4)	07:37		16:23 (2)	06:21	05:56	04:46	04:15
	16:13	21	15:19 (4)	17:25	30	16:53 (3)	18:28	20:37	21:41	22:21
21	08:41		14:59 (4)	07:34		16:23 (2)	06:18	05:53	04:44	04:15
	16:15	20	15:19 (4)	17:27	32	16:55 (3)	18:31	20:39	21:43	22:21
22	08:39		14:59 (4)	07:32		16:24 (2)	06:16	05:50	04:42	04:15
	16:17	20	15:19 (4)	17:29	34	16:58 (3)	18:33	20:41	21:45	22:21
23	08:38		15:00 (4)	07:29		16:24 (2)	06:13	05:48	04:40	04:15
	16:19	19	15:19 (4)	17:32	37	17:01 (3)	18:35	20:43	21:47	22:22
24	08:36		15:01 (4)	07:26		16:24 (2)	06:10	05:45	04:39	04:15
	16:21	17	15:18 (4)	17:34	36	17:01 (3)	18:37	20:46	21:49	22:22
25	08:34		15:02 (4)	07:24		16:26 (2)	06:07	05:43	04:37	04:16
	16:24	16	15:18 (4)	17:36	31	17:01 (3)	18:39	20:48	21:51	22:22
26	08:32		15:04 (4)	07:21		16:27 (2)	06:04	05:40	04:35	04:16
	16:26	13	15:17 (4)	17:39	25	16:59 (3)	18:42	20:50	21:53	22:21
27	08:31		15:05 (4)	07:19		16:29 (2)	06:02	05:37	04:34	04:17
	16:28	10	15:50 (14)	17:41	12	16:41 (2)	18:44	20:52	21:54	22:21
28	08:29		15:49 (14)	07:16			05:59	05:35	04:32	04:17
	16:30	3	15:52 (14)	17:43			18:46	20:55	21:56	22:21
29	08:27		15:49 (14)				06:56	05:32	04:31	04:18
	16:33	6	15:55 (14)				19:48	20:57	21:58	22:21
30	08:25		15:49 (14)				06:53	05:30	04:29	04:19
	16:35	9	15:58 (14)				19:50	20:59	21:59	22:20
31	08:23		15:50 (14)				06:50		04:28	
	16:37	11	16:01 (14)				19:53		22:01	
Potential sun hours	227			262			365	429	515	539
Total, worst case		459		442						
Sun reduction		0.11		0.19						
Oper. time red.		1.00		1.00						
Wind dir. red.		1.00		1.00						
Total reduction		0.11		0.19						
Total, real		50		86						

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Riekstini - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (495)
 Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	July	August	September	October	November	December
1	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:27 16:32	08:33 15:37 18
2	04:21 22:19	05:11 21:33	06:17 20:14	07:20 18:50	07:30 16:29	08:35 15:36 17
3	04:21 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:36 15:35 15
4	04:22 22:18	05:15 21:28	06:21 20:09	07:25 18:45	07:34 16:25 3	08:38 15:30 (14) 15:34 14
5	04:24 22:17	05:17 21:26	06:23 20:06	07:27 18:42	07:37 16:23 10	08:40 15:33 (14) 15:33 12
6	04:25 22:16	05:19 21:24	06:25 20:03	07:29 18:39	07:39 16:20 13	08:41 15:22 (14) 15:32 11
7	04:26 22:16	05:21 21:22	06:27 20:01	07:31 18:37	07:41 16:18 14	08:43 15:22 (14) 15:32 10
8	04:27 22:15	05:23 21:19	06:29 19:58	07:33 18:34	07:43 16:16 15	08:44 15:21 (14) 15:31 8
9	04:28 22:14	05:26 21:17	06:32 19:55	07:36 18:31	07:46 16:14 16	08:46 15:21 (14) 15:31 7
10	04:30 22:12	05:28 21:14	06:34 19:52	07:38 18:28	07:48 16:12 14	08:47 15:20 (14) 15:30 6
11	04:31 22:11	05:30 21:12	06:36 19:49	07:40 18:26	07:50 16:09 12	08:49 15:20 (14) 15:30 5
12	04:33 22:10	05:32 21:10	06:38 19:47	07:42 18:23	07:53 16:07 9	08:50 15:20 (14) 15:29 4
13	04:34 22:09	05:34 21:07	06:40 19:44	07:44 18:20	07:55 16:05 6	08:51 15:21 (14) 15:29 2
14	04:36 22:08	05:36 21:05	06:42 19:41	07:47 18:18 7	07:57 17:04 (2) 16:03 3	08:52 15:22 (14) 15:29 2
15	04:37 22:06	05:38 21:02	06:44 19:38	07:49 18:15 19	07:59 17:00 (2) 16:02 9	08:53 14:38 (4) 15:29 1
16	04:39 22:05	05:40 21:00	06:46 19:35	07:51 18:12 28	08:02 16:59 (2) 16:00 13	08:54 14:37 (4) 15:29
17	04:40 22:03	05:43 20:57	06:48 19:33	07:53 18:10 34	08:04 16:57 (2) 15:58 16	08:55 14:35 (4) 15:29
18	04:42 22:02	05:45 20:54	06:51 19:30	07:55 18:07 37	08:06 16:56 (2) 15:56 17	08:56 14:35 (4) 15:29
19	04:44 22:00	05:47 20:52	06:53 19:27	07:58 18:04 36	08:08 16:55 (2) 15:54 19	08:57 14:34 (4) 15:29
20	04:46 21:58	05:49 20:49	06:55 19:24	08:00 18:02 34	08:10 16:54 (2) 15:52 20	08:58 14:34 (4) 15:29
21	04:47 21:57	05:51 20:47	06:57 19:21	08:02 17:59 32	08:13 16:54 (2) 15:51 20	08:58 14:34 (4) 15:30
22	04:49 21:55	05:53 20:44	06:59 19:18	08:04 17:56 29	08:15 16:53 (2) 15:49 21	08:59 14:34 (4) 15:30
23	04:51 21:53	05:55 20:41	07:01 19:16	08:07 17:54 26	08:17 16:54 (2) 15:48 21	08:59 14:34 (4) 15:31
24	04:53 21:51	05:58 20:39	07:03 19:13	08:09 17:51 23	08:19 16:54 (2) 15:46 22	09:00 14:33 (4) 15:31
25	04:55 21:49	06:00 20:36	07:05 19:10	07:11 16:49 20	08:21 15:55 (2) 15:45 22	09:00 14:34 (4) 15:32
26	04:57 21:47	06:02 20:33	07:08 19:07	07:14 16:46 17	08:23 15:55 (2) 15:43 22	09:00 14:34 (4) 15:33
27	04:59 21:45	06:04 20:31	07:10 19:04	07:16 16:44 14	08:25 15:56 (2) 15:42 22	09:01 14:34 (4) 15:34
28	05:01 21:43	06:06 20:28	07:12 19:02	07:18 16:41 9	08:27 15:57 (2) 15:41 22	09:01 14:35 (12) 15:34 1
29	05:03 21:41	06:08 20:25	07:14 18:59	07:20 16:39 5	08:29 15:59 (2) 15:39 21	09:01 14:35 (12) 15:35 1
30	05:05 21:39	06:10 20:23	07:16 18:56	07:23 16:37 1	08:31 16:00 (2) 15:38 20	09:01 14:35 (12) 15:37 3
31	05:07 21:37	06:13 20:20	07:25 18:56	07:25 16:34		09:00 14:48 (12) 15:38 3
Potential sun hours	538	474	386	321	241	207
Total, worst case				371	422	140
Sun reduction				0.28	0.08	0.06
Oper. time red.				1.00	1.00	1.00
Wind dir. red.				1.00	1.00	1.00
Total reduction				0.28	0.08	0.06
Total, real				105	33	9

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa
Assumptions for shadow calculations

Shadow receptor: Ritas - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (452)
Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January		February		March		April	May	June
1	09:00	14:33 (4)	08:21	15:39 (14)	07:13		06:48	05:27	04:27
	15:39	20	14:53 (4)	16:40	13	15:52 (14)	17:46	19:55	21:01
2	09:00	14:33 (4)	08:19	15:41 (14)	07:11		06:45	05:25	04:25
	15:40	21	14:54 (4)	16:42	11	15:52 (14)	17:48	19:57	21:03
3	09:00	14:34 (4)	08:17	15:45 (14)	07:08		06:42	05:23	04:24
	15:42	22	14:56 (4)	16:44	4	15:49 (14)	17:50	19:59	21:06
4	08:59	14:34 (4)	08:15		07:05		06:39	05:20	04:23
	15:43	22	14:56 (4)	16:47			17:53	20:01	21:08
5	08:59	14:34 (4)	08:12		07:03		06:36	05:18	04:22
	15:45	23	14:57 (4)	16:49			17:55	20:04	21:10
6	08:58	14:34 (4)	08:10		07:00		06:34	05:15	04:21
	15:46	23	14:57 (4)	16:52			17:57	20:06	21:12
7	08:57	14:35 (4)	08:08	16:14 (2)	06:57		06:31	05:13	04:20
	15:48	23	14:58 (4)	16:54	5	16:19 (2)	17:59	20:08	21:14
8	08:57	14:35 (4)	08:06	16:12 (2)	06:54		06:28	05:11	04:19
	15:49	23	14:58 (4)	16:56	10	16:22 (2)	18:02	20:10	21:16
9	08:56	14:36 (4)	08:03	16:11 (2)	06:52		06:25	05:09	04:18
	15:51	23	14:59 (4)	16:59	14	16:25 (2)	18:04	20:12	21:19
10	08:55	14:36 (4)	08:01	16:10 (2)	06:49		06:23	05:06	04:18
	15:53	23	14:59 (4)	17:01	17	16:27 (2)	18:06	20:15	21:21
11	08:54	14:36 (4)	07:59	16:09 (2)	06:46		06:20	05:04	04:17
	15:55	23	14:59 (4)	17:03	21	16:30 (2)	18:08	20:17	21:23
12	08:53	14:37 (4)	07:56	16:08 (2)	06:43		06:17	05:02	04:17
	15:57	23	15:00 (4)	17:06	24	16:32 (2)	18:11	20:19	21:25
13	08:52	14:37 (4)	07:54	16:09 (2)	06:41		06:14	05:00	04:16
	15:58	22	14:59 (4)	17:08	25	16:34 (2)	18:13	20:21	21:27
14	08:51	14:38 (4)	07:52	16:08 (2)	06:38		06:12	04:58	04:16
	16:00	22	15:00 (4)	17:11	26	16:34 (2)	18:15	20:24	21:29
15	08:49	14:38 (4)	07:49	16:07 (2)	06:35		06:09	04:56	04:15
	16:02	22	15:00 (4)	17:13	28	16:40 (3)	18:17	4	17:44 (1)
16	08:48	14:40 (4)	07:47	16:08 (2)	06:32		17:43 (1)	06:06	04:53
	16:04	20	15:00 (4)	17:15	30	16:43 (3)	18:20	7	17:50 (1)
17	08:47	14:40 (4)	07:44	16:08 (2)	06:29		17:44 (1)	06:04	04:51
	16:06	20	15:00 (4)	17:18	33	16:45 (3)	18:22	9	17:53 (1)
18	08:45	14:41 (4)	07:42	16:09 (2)	06:27		17:43 (1)	06:01	04:50
	16:08	18	14:59 (4)	17:20	35	16:48 (3)	18:24	12	17:55 (1)
19	08:44	14:42 (4)	07:39	16:09 (2)	06:24		17:43 (1)	05:58	04:48
	16:10	17	14:59 (4)	17:22	37	16:51 (3)	18:26	14	17:57 (1)
20	08:42	14:44 (4)	07:37	16:09 (2)	06:21		17:44 (1)	05:56	04:46
	16:13	15	14:59 (4)	17:25	38	16:53 (3)	18:28	13	17:57 (1)
21	08:41	14:46 (4)	07:34	16:10 (2)	06:18		17:44 (1)	05:53	04:44
	16:15	12	14:58 (4)	17:27	35	16:53 (3)	18:31	12	17:56 (1)
22	08:39	14:48 (4)	07:32	16:12 (2)	06:16		17:46 (1)	05:50	04:42
	16:17	9	15:37 (14)	17:29	32	16:53 (3)	18:33	7	17:53 (1)
23	08:38	15:36 (14)	07:29	16:14 (2)	06:13			05:48	04:40
	16:19	4	15:40 (14)	17:32	24	16:51 (3)	18:35		20:43
24	08:36	15:36 (14)	07:26	16:17 (2)	06:10			05:45	04:39
	16:21	6	15:42 (14)	17:34	12	16:48 (3)	18:37		20:46
25	08:34	15:36 (14)	07:24		06:07			05:43	04:37
	16:24	9	15:45 (14)	17:36				20:48	21:51
26	08:32	15:36 (14)	07:21		06:04			05:40	04:35
	16:26	12	15:48 (14)	17:39				20:50	21:53
27	08:31	15:36 (14)	07:19		06:02			05:37	04:34
	16:28	14	15:50 (14)	17:41				20:52	21:54
28	08:29	15:36 (14)	07:16		05:59			05:35	04:32
	16:30	16	15:52 (14)	17:43				20:55	21:56
29	08:27	15:37 (14)			06:56			05:32	04:31
	16:33	17	15:54 (14)		19:48			20:57	21:58
30	08:25	15:38 (14)			06:53			05:30	04:29
	16:35	16	15:54 (14)		19:50			20:59	21:59
31	08:23	15:39 (14)			06:50				04:28
	16:37	15	15:54 (14)		19:53				22:01
Potential sun hours	227		262		365		429	515	539
Total, worst case	555		474		78				
Sun reduction	0.11		0.19		0.40				
Oper. time red.	1.00		1.00		1.00				
Wind dir. red.	1.00		1.00		1.00				
Total reduction	0.11		0.19		0.40				
Total, real	61		92		31				

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Ritas - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (452)
Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) []

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
0.80 1.82 4.75 6.09 9.67 10.05 8.16 7.72 5.94 2.93 0.63 0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	July	August	September	October	November	December
1	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:27 16:32	08:33 15:39 (2)
2	04:21 22:19	05:11 21:33	06:17 20:14	07:20 18:50	07:30 16:29	08:35 15:36 (2)
3	04:21 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:36 15:35 (2)
4	04:22 22:18	05:15 21:28	06:21 20:09	07:25 18:45	07:34 16:25	08:38 15:34 (2)
5	04:24 22:17	05:17 21:26	06:23 20:06	07:27 18:42	07:37 16:23	08:40 15:33 (2)
6	04:25 22:16	05:19 21:24	06:25 20:03	07:29 18:39	07:39 16:20	08:41 15:32 (2)
7	04:26 22:16	05:21 21:22	06:27 20:01	07:31 18:37	07:41 16:18	08:43 15:32 (2)
8	04:27 22:15	05:23 21:19	06:29 19:58	07:33 18:34	07:43 16:16	08:44 15:31 (14)
9	04:28 22:14	05:26 21:17	06:32 19:55	07:36 18:31	07:46 16:14	08:46 15:31 (14)
10	04:30 22:12	05:28 21:14	06:34 19:52	07:38 18:28	07:48 16:12	08:47 15:30 (14)
11	04:31 22:11	05:30 21:12	06:36 19:49	07:40 18:26	07:50 16:10	08:49 15:30 (14)
12	04:33 22:10	05:32 21:10	06:38 19:47	07:42 18:23	07:53 16:07	08:50 15:29 (14)
13	04:34 22:09	05:34 21:07	06:40 19:44	07:44 18:20	07:55 16:05	08:51 15:29 (14)
14	04:36 22:08	05:36 21:05	06:42 19:41	07:47 18:18	07:57 16:03	08:52 15:29 (14)
15	04:37 22:06	05:38 21:02	06:44 19:38	07:49 18:15	07:59 16:02	08:53 15:29 (14)
16	04:39 22:05	05:40 21:00	06:46 19:35	07:51 18:12	08:02 16:00	08:54 15:29 (14)
17	04:40 22:03	05:43 20:57	06:48 19:33	07:53 18:10	08:04 15:58	08:55 15:29 (14)
18	04:42 22:02	05:45 20:55	06:51 19:30	07:55 18:07	08:06 17:21 (3)	08:56 15:29 (14)
19	04:44 22:00	05:47 20:52	06:53 19:27	07:58 18:04	08:08 17:23 (3)	08:57 15:29 (14)
20	04:46 21:58	05:49 20:49	06:55 19:24	08:00 18:02	08:10 17:24 (3)	08:58 15:29 (14)
21	04:47 21:57	05:51 20:47	06:57 19:21	08:02 18:33 (1)	08:13 17:25 (3)	08:58 15:29 (14)
22	04:49 21:55	05:53 20:44	06:59 19:18	08:04 18:31 (1)	08:15 17:22 (3)	08:59 15:29 (14)
23	04:51 21:53	05:55 20:41	07:01 19:16	08:07 18:29 (1)	08:17 17:20 (3)	08:59 15:31 (14)
24	04:53 21:51	05:58 20:39	07:03 19:13	08:09 18:27 (1)	08:19 17:17 (3)	09:00 15:31 (14)
25	04:55 21:49	06:00 20:36	07:05 19:10	08:11 18:26 (1)	08:21 16:15 (3)	09:00 15:32 (14)
26	04:57 21:47	06:02 20:33	07:08 19:07	08:14 18:26 (1)	08:23 16:12 (3)	09:00 15:33 (14)
27	04:59 21:45	06:04 20:31	07:10 19:04	08:16 18:25 (1)	08:25 16:10 (3)	09:01 15:34 (14)
28	05:01 21:43	06:06 20:28	07:12 19:02	08:18 18:25 (1)	08:27 16:03 (2)	09:01 15:35 (14)
29	05:03 21:41	06:08 20:25	07:14 18:59	08:20 18:27 (1)	08:29 16:03 (2)	09:01 15:35 (14)
30	05:05 21:39	06:10 20:23	07:16 18:56	08:23 16:37	08:31 16:01 (2)	09:01 15:37 (14)
31	05:07 21:37	06:13 20:20		08:25 16:34	08:33 15:59 (2)	09:00 15:38 (14)
Potential sun hours	538	474	386	321	241	207
Total, worst case			80	407	380	560
Sun reduction			0.46	0.28	0.08	0.06
Oper. time red.			1.00	1.00	1.00	1.00
Wind dir. red.			1.00	1.00	1.00	1.00
Total reduction			0.46	0.28	0.08	0.06
Total, real			37	115	30	34

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Last time (hh:mm) with flicker	(WTG causing flicker last time)
	Minutes with flicker		

Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa
Assumptions for shadow calculations

Shadow receptor: Rozes - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (791)
Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:40	08:21 16:40	07:14 17:46	06:48 19:55	05:28 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:18	07:19 18:54	07:28 16:32	08:33 15:38
2	09:00 15:41	08:19 16:43	07:11 17:48	06:45 19:57	05:26 21:04	04:26 22:04	04:21 22:20	05:11 21:33	06:17 20:15	07:21 18:51	07:30 16:30	08:35 15:37
3	09:00 15:42	08:17 16:45	07:08 17:51	06:42 20:00	05:23 21:06	04:25 22:06	04:22 22:19	05:14 21:31	06:19 20:12	07:23 18:48	07:32 16:28	08:37 15:36
4	08:59 15:44	08:15 16:47	07:06 17:53	06:40 20:02	05:21 21:08	04:24 22:07	04:23 22:18	05:16 21:29	06:21 20:09	07:25 18:45	07:35 16:25	08:38 15:35
5	08:59 15:45	08:13 16:50	07:03 17:55	06:37 20:04	05:18 21:10	04:23 22:08	04:24 22:18	05:18 21:27	06:24 20:07	07:27 18:43	07:37 16:23	08:40 15:34
6	08:58 15:47	08:11 16:52	07:00 17:58	06:34 20:06	05:16 21:12	04:22 22:10	04:25 22:17	05:20 21:24	06:26 20:04	07:29 18:40	07:39 16:21	08:42 15:33
7	08:58 15:48	08:08 16:54	06:57 18:00	06:31 20:08	05:14 21:15	04:21 22:11	04:26 22:16	05:22 21:22	06:28 20:01	07:32 18:37	07:42 16:19	08:43 15:32
8	08:57 15:50	08:06 16:57	06:55 18:02	06:29 20:11	05:11 21:17	04:20 22:12	04:28 22:15	05:24 21:20	06:30 19:58	07:34 18:34	07:44 16:16	08:45 15:32
9	08:56 15:52	08:04 16:59	06:52 18:04	06:26 20:13	05:09 21:19	04:19 22:13	04:29 22:14	05:26 21:17	06:32 19:55	07:36 18:32	07:46 16:14	08:46 15:31
10	08:55 15:53	08:01 17:02	06:49 18:07	06:23 20:15	05:07 21:21	04:18 22:14	04:30 22:13	05:28 21:15	06:34 19:53	07:38 18:29	07:48 16:12	08:48 15:31
11	08:54 15:55	07:59 17:04	06:47 18:09	06:20 20:17	05:05 21:23	04:18 22:15	04:32 22:12	05:30 21:12	06:36 19:50	07:40 18:26	07:51 16:10	08:49 15:30
12	08:53 15:57	07:57 17:06	06:44 18:11	06:18 20:19	05:02 21:25	04:17 22:16	04:33 22:10	05:32 21:10	06:38 19:47	07:43 18:23	07:53 16:08	08:50 15:30
13	08:52 15:59	07:54 17:09	06:41 18:13	06:15 20:22	05:00 21:27	04:17 22:17	04:35 22:09	05:35 21:07	06:40 19:44	07:45 18:21	07:55 16:06	08:51 15:30
14	08:51 16:01	07:52 17:11	06:38 18:16	06:12 20:24	04:58 21:29	04:16 22:18	04:36 22:08	05:37 21:05	06:43 19:41	07:47 18:18	07:57 16:04	08:53 15:29
15	08:50 16:03	07:50 17:13	06:35 18:18	06:09 20:26	04:56 21:32	04:16 22:19	04:38 22:06	05:39 21:02	06:45 19:39	07:49 18:15	08:00 16:02	08:54 15:29
16	08:48 16:05	07:47 17:16	06:33 18:20	06:07 20:28	04:54 21:34	04:16 22:19	04:39 22:05	05:41 21:00	06:47 19:36	07:51 18:13	08:02 16:00	08:55 15:29
17	08:47 16:07	07:45 17:18	06:30 18:22	06:04 20:31	04:52 21:36	04:15 22:20	04:41 22:03	05:43 20:57	06:49 19:33	07:54 18:10	08:04 15:58	08:56 15:29
18	08:46 16:09	07:42 17:21	06:27 18:24	06:01 20:33	04:50 21:38	04:15 22:20	04:43 22:02	05:45 20:55	06:51 19:30	07:56 18:07	08:06 15:57	08:56 15:29
19	08:44 16:11	07:40 17:23	06:24 18:27	05:59 20:35	04:48 21:40	04:15 22:21	04:44 22:00	05:47 20:52	06:53 19:27	07:58 18:05	08:09 15:55	08:57 15:30
20	08:43 16:13	07:37 17:25	06:22 18:29	05:56 20:37	04:46 21:42	04:15 22:21	04:46 21:59	05:50 20:50	06:55 19:24	08:00 18:02	08:11 15:53	08:58 15:30
21	08:41 16:15	07:35 17:28	06:19 18:31	05:53 20:39	04:44 21:44	04:15 22:21	04:48 21:57	05:52 20:47	06:57 19:22	08:03 18:00	08:13 15:51	08:59 15:30
22	08:40 16:17	07:32 17:30	06:16 18:33	05:51 20:42	04:43 21:45	04:15 22:22	04:50 21:55	05:54 20:44	06:59 19:19	08:05 17:57	08:15 15:50	08:59 15:31
23	08:38 16:20	07:29 17:32	06:13 18:35	05:48 20:44	04:41 21:47	04:16 22:22	04:52 21:53	05:56 20:42	07:02 19:16	08:07 17:54	08:17 15:48	09:00 15:31
24	08:36 16:22	07:27 17:35	06:10 18:38	05:46 20:46	04:39 21:49	04:16 22:22	04:54 21:52	05:58 20:39	07:04 19:13	08:09 17:52	08:19 15:47	09:00 15:32
25	08:35 16:24	07:24 17:37	06:08 18:40	05:43 20:48	04:37 21:51	04:16 22:22	04:56 21:50	06:00 20:36	07:06 19:10	07:12 16:49	08:21 15:45	09:00 15:33
26	08:33 16:26	07:22 17:39	06:05 18:42	05:41 20:50	04:36 21:53	04:17 22:22	04:57 21:48	06:02 20:34	07:08 19:08	07:14 16:47	08:23 15:44	09:01 15:33
27	08:31 16:29	07:19 17:41	06:02 18:44	05:38 20:53	04:34 21:55	04:17 22:22	04:59 21:46	06:04 20:31	07:10 19:05	07:16 16:44	08:25 15:42	09:01 15:34
28	08:29 16:31	07:16 17:44	05:59 18:46	05:35 20:55	04:33 21:56	04:18 22:21	05:01 21:44	06:07 20:28	07:12 19:02	07:18 16:42	08:27 15:41	09:01 15:35
29	08:27 16:33		06:56 19:49	05:33 20:57	04:31 21:58	04:19 22:21	05:03 21:42	06:09 20:26	07:14 18:59	07:21 16:39	08:29 15:40	09:01 15:36
30	08:25 16:36		06:54 19:51	05:30 20:59	04:30 22:00	04:19 22:21	05:05 21:40	06:11 20:23	07:16 18:56	07:23 16:37	08:31 15:39	09:01 15:37
31	08:23 16:38		06:51 19:53		04:28 22:01		05:07 21:38	06:13 20:20		07:25 16:35		09:01 15:38
Potential sun hours	227	262	365	429	515	539	538	474	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Rubeni - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (454)
Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June
1	09:00	08:21	07:13	17:04 (12)	06:48	18:40 (4)
	15:39	16:40	17:46	12	17:16 (12)	19:55
2	09:00	08:19	07:11	17:03 (12)	06:45	18:41 (4)
	15:41	16:42	17:48	15	17:18 (12)	19:57
3	08:59	08:17	07:08	17:02 (12)	06:42	18:42 (4)
	15:42	16:44	17:50	18	17:20 (12)	19:59
4	08:59	08:14	16:10 (11)	07:05	17:01 (12)	06:39
	15:43	16:47	1	16:11 (11)	17:53	22
5	08:58	08:12	16:08 (11)	07:02	17:01 (12)	06:36
	15:45	16:49	6	16:14 (11)	17:55	24
6	08:58	08:10	16:06 (11)	07:00	17:02 (12)	06:34
	15:46	16:52	10	16:16 (11)	17:57	26
7	08:57	08:08	16:05 (11)	06:57	17:02 (12)	06:31
	15:48	16:54	15	16:20 (11)	17:59	28
8	08:56	08:06	16:04 (11)	06:54	17:02 (12)	06:28
	15:50	16:56	18	16:22 (11)	18:02	30
9	08:56	08:03	16:03 (11)	06:52	17:03 (12)	06:25
	15:51	16:59	22	16:25 (11)	18:04	30
10	08:55	08:01	16:02 (11)	06:49	17:04 (12)	06:23
	15:53	17:01	25	16:27 (11)	18:06	28
11	08:54	07:59	16:03 (11)	06:46	17:07 (12)	06:20
	15:55	17:03	26	16:29 (11)	18:08	21
12	08:53	07:56	16:02 (11)	06:43	17:22 (13)	06:17
	15:57	17:06	26	16:28 (11)	18:11	6
13	08:52	07:54	16:02 (11)	06:41	17:28 (13)	06:14
	15:58	17:08	27	16:29 (11)	18:13	20:21
14	08:50	07:52	16:02 (11)	06:38	17:04 (12)	06:12
	16:00	17:11	27	16:29 (11)	18:15	20:23
15	08:49	07:49	16:02 (11)	06:35	17:06 (12)	06:09
	16:02	17:13	26	16:28 (11)	18:17	20:26
16	08:48	07:47	16:03 (11)	06:32	17:06 (12)	06:06
	16:04	17:15	25	16:28 (11)	18:20	20:28
17	08:47	07:44	16:03 (11)	06:29	17:07 (12)	06:04
	16:06	17:18	24	16:27 (11)	18:22	20:30
18	08:45	07:42	16:03 (11)	06:27	17:08 (12)	06:01
	16:08	17:20	23	16:26 (11)	18:24	20:32
19	08:44	07:39	16:05 (11)	06:24	17:54 (14)	05:58
	16:11	17:22	21	16:26 (11)	18:26	3
20	08:42	07:37	16:06 (11)	06:21	17:53 (4)	05:56
	16:13	17:25	18	16:24 (11)	18:28	6
21	08:41	07:34	16:07 (11)	06:18	17:49 (4)	05:53
	16:15	17:27	15	16:22 (11)	18:31	12
22	08:39	07:32	16:11 (11)	06:15	17:47 (4)	05:50
	16:17	17:29	9	16:20 (11)	18:33	16
23	08:38	07:29	16:08 (11)	06:13	17:46 (4)	05:48
	16:19	17:32	20	18:06 (4)	20:43	6
24	08:36	07:26	16:06 (11)	06:10	17:44 (4)	05:45
	16:21	17:34	18:37	24	18:08 (4)	20:46
25	08:34	07:24	16:07 (11)	06:07	17:43 (4)	05:43
	16:24	17:36	18:39	26	18:09 (4)	20:48
26	08:32	07:21	16:04 (11)	06:04	17:42 (4)	05:40
	16:26	17:39	18:42	27	18:09 (4)	20:50
27	08:31	07:19	17:06 (12)	06:01	17:41 (4)	05:37
	16:28	17:41	5	17:11 (12)	18:44	28
28	08:29	07:16	17:04 (12)	05:59	17:41 (4)	05:35
	16:30	17:43	9	17:13 (12)	18:46	29
29	08:27	07:14	16:05 (11)	06:56	18:41 (4)	05:32
	16:33	17:46	19:48	28	18:09 (4)	20:57
30	08:25	07:12	16:06 (11)	06:53	18:40 (4)	05:30
	16:35	17:49	19:50	28	18:08 (4)	20:59
31	08:23	07:10	16:07 (11)	06:50	18:40 (4)	05:28
	16:37	17:53	27	19:07 (4)	22:01	515
Potential sun hours	227	262	365	429	515	539
Total, worst case		378	534	328	163	
Sun reduction		0.19	0.40	0.43	0.58	
Oper. time red.		1.00	1.00	1.00	1.00	
Wind dir. red.		1.00	1.00	1.00	1.00	
Total reduction		0.19	0.40	0.43	0.58	
Total, real		73	215	140	95	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Rubeni - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (454)
Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	July	August	September	October	November	December
1	04:20 22:20	05:09 21:35	06:15 20:17	19:30 (3) 18:53	07:18 18:03 (13)	07:27 15:32 (11)
2	04:21 22:19	05:11 21:33	06:17 20:14	19:29 (3) 18:50	07:20 18:08 (13)	16:32 15:54 (11)
3	04:22 22:19	05:13 21:31	20:20 (2) 20:22 (2)	06:19 20:12	07:22 18:09 (13)	07:32 15:51 (11)
4	04:23 22:18	05:15 21:28	20:16 (2) 20:26 (2)	06:21 20:09	07:25 18:10 (13)	07:34 15:49 (11)
5	04:24 22:17	05:17 21:26	20:14 (2) 20:28 (2)	06:23 20:06	07:27 18:11 (13)	07:37 15:46 (11)
6	04:25 22:16	05:19 21:24	20:12 (2) 20:29 (2)	06:25 20:03	07:29 18:12 (13)	07:39 15:44 (11)
7	04:26 22:15	05:21 21:22	20:11 (2) 20:30 (2)	06:27 20:01	07:31 18:13 (13)	07:41 15:42 (11)
8	04:27 22:14	05:23 21:19	20:11 (2) 20:31 (2)	06:29 19:58	07:33 18:14 (13)	07:43 15:41 (11)
9	04:28 22:13	05:26 21:17	20:10 (2) 20:31 (2)	06:32 19:55	07:36 18:15 (13)	07:46 15:40 (11)
10	04:30 22:12	05:28 21:14	20:09 (2) 20:32 (2)	06:34 19:52	07:38 18:16 (13)	07:48 15:39 (11)
11	04:31 22:11	05:30 21:12	20:09 (2) 20:32 (2)	06:36 19:49	07:40 18:17 (13)	07:50 15:38 (11)
12	04:33 22:10	05:32 21:10	20:08 (2) 20:31 (2)	06:38 19:47	07:42 18:18 (13)	07:53 15:37 (11)
13	04:34 22:09	05:34 21:07	20:07 (2) 20:31 (2)	06:40 19:44	07:44 18:19 (13)	07:55 15:36 (11)
14	04:36 22:07	05:36 21:05	20:07 (2) 20:30 (2)	06:42 19:41	07:46 18:20 (13)	07:57 15:35 (11)
15	04:37 22:06	05:38 21:02	20:07 (2) 20:28 (2)	06:44 19:38	07:49 18:21 (13)	07:59 15:34 (11)
16	04:39 22:05	05:40 21:00	20:08 (2) 20:26 (2)	06:46 19:35	07:51 18:22 (13)	08:02 15:33 (11)
17	04:41 22:03	05:43 20:57	20:08 (2) 20:23 (2)	06:48 19:32	07:53 18:23 (13)	08:04 15:32 (11)
18	04:42 22:01	05:45 20:54	20:09 (2) 20:21 (2)	06:51 19:30	07:55 18:24 (13)	08:06 15:31 (11)
19	04:44 22:00	05:47 20:52	20:10 (2) 20:19 (2)	06:53 19:27	07:58 18:25 (13)	08:08 15:30 (11)
20	04:46 21:58	05:49 20:49	20:11 (2) 20:16 (2)	06:55 19:24	08:00 18:26 (13)	08:10 15:29 (11)
21	04:48 21:57	05:51 20:47	20:13 (2) 20:14 (2)	06:57 19:21	08:02 18:27 (13)	08:13 15:28 (11)
22	04:49 21:55	05:53 20:44	06:59 19:18	18:30 (4) 18:47 (4)	08:04 17:57	16:40 (11) 16:55 (11)
23	04:51 21:53	05:55 20:41	07:01 19:16	18:36 (4) 18:45 (4)	08:07 17:54	16:35 (11) 16:57 (11)
24	04:53 21:51	05:58 20:39	07:03 19:13	18:38 (14) 18:42 (14)	08:09 17:51	16:33 (11) 16:57 (11)
25	04:55 21:49	06:00 20:36	07:05 19:10	07:11 16:49	15:33 (11) 15:58 (11)	08:21 15:45
26	04:57 21:47	06:02 20:33	07:08 19:07	07:13 16:46	15:32 (11) 15:58 (11)	08:23 15:43
27	04:59 21:45	06:04 20:31	07:10 19:04	07:16 16:44	15:32 (11) 15:59 (11)	08:25 15:42
28	05:01 21:43	06:06 20:28	07:12 19:02	07:18 16:41	15:31 (11) 15:58 (11)	08:27 15:41
29	05:03 21:41	06:08 20:25	07:14 18:59	07:20 16:39	15:32 (11) 15:59 (11)	08:29 15:39
30	05:05 21:39	06:10 20:23	19:34 (3) 19:42 (3)	07:16 18:56	07:23 16:37	15:31 (11) 15:58 (11)
31	05:07 21:37	06:13 20:20	19:31 (3) 19:43 (3)	07:18 16:34	07:25 15:58 (11)	15:32 (11) 15:58 (11)
Potential sun hours	538	474	386	321	241	207
Total, worst case		320	463	553	94	
Sun reduction		0.50	0.46	0.28	0.08	
Oper. time red.		1.00	1.00	1.00	1.00	
Wind dir. red.		1.00	1.00	1.00	1.00	
Total reduction		0.50	0.46	0.28	0.08	
Total, real		161	214	156	7	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
--------------	------------------	-----------------	----------------------	---------------------------------	--------------------------------	----------------------------------	---------------------------------

Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Rudziš i - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (463)
Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March		April		May	June	July	August	September	October		November	December		
1	09:00 15:39	08:21 16:40		07:13 17:46		06:47 19:55	05:27 21:01	04:27 22:02	04:20 22:20	05:09 21:35	06:15 20:17		07:18 18:53	17:54 (2) 18:06 (2)	07:27 16:32	19 15:31 (4) 15:50 (4)	08:33 15:37
2	09:00 15:40	08:19 16:42	2 16:04 (4)	07:11 17:48		06:45 19:57	05:25 21:03	04:25 22:04	04:21 22:19	05:11 21:33	06:17 20:14		07:20 18:50	17:52 (2) 18:07 (2)	07:30 16:29	19 15:32 (4) 15:51 (4)	08:34 15:36
3	09:00 15:42	08:17 16:44		07:08 17:50	4 17:16 (2)	06:42 19:59	05:23 21:06	04:24 22:05	04:21 22:19	05:13 21:31	06:19 20:12		07:22 18:48	17:51 (2) 18:08 (2)	07:32 16:27	19 15:30 (4) 15:51 (4)	08:36 15:35
4	08:59 15:43	08:15 16:47	9	07:05 17:52	8 17:14 (2)	06:39 20:01	05:20 21:08	04:23 22:07	04:22 22:18	05:15 21:28	06:21 20:09		07:25 18:45	17:49 (2) 18:08 (2)	07:34 16:25	18 15:31 (4) 15:49 (4)	08:38 15:34
5	08:59 15:45	08:12 16:49	12	07:02 17:55	12 17:13 (2)	06:36 20:04	05:18 21:10	04:22 22:08	04:24 22:17	05:17 21:26	06:23 20:06		07:27 18:42	17:49 (2) 18:09 (2)	07:37 16:22	15 15:31 (4) 15:46 (4)	08:40 15:33
6	08:58 15:46	08:10 16:52	14	07:00 17:57	15 17:13 (2)	06:34 20:06	05:15 21:12	04:21 22:09	04:25 22:16	05:19 21:24	06:25 20:03		07:29 18:39	17:49 (2) 18:07 (2)	07:39 16:20	12 15:32 (4) 15:44 (4)	08:41 15:32
7	08:57 15:48	08:08 16:54	17	06:57 17:59	18 17:12 (2)	06:31 20:08	05:13 21:14	04:20 22:11	04:26 22:16	05:21 21:22	06:27 20:01		07:31 18:37	17:48 (2) 18:04 (2)	07:41 16:18	9 15:33 (4) 15:42 (4)	08:43 15:32
8	08:56 15:49	08:06 16:56	20	06:54 18:02	20 17:12 (2)	06:28 20:10	05:11 21:16	04:19 22:12	04:27 22:15	05:23 21:19	06:29 19:58		07:33 18:34	17:48 (2) 18:01 (2)	07:43 16:16	15 15:34 (4) 15:49 (4)	08:44 15:31
9	08:56 15:51	08:03 16:59	19	06:52 18:04	19 17:12 (2)	06:25 20:12	05:09 21:19	04:18 22:13	04:28 22:14	05:26 21:17	06:32 19:55		07:35 18:31	17:49 (2) 17:59 (2)	07:46 16:14	2 15:35 (4) 15:47 (4)	08:46 15:30
10	08:55 15:53	08:01 17:01	19	06:49 18:06	18 17:12 (2)	06:23 20:15	05:06 21:21	04:18 22:14	04:30 22:12	05:28 21:14	06:34 19:52		07:38 18:28	17:50 (2) 17:56 (2)	07:48 16:12		08:47 15:30
11	08:54 15:55	07:59 17:03	18	06:46 18:08	16 17:14 (2)	06:20 20:17	05:04 21:23	04:17 22:15	04:31 22:11	05:30 21:12	06:36 19:49		07:40 18:26	17:50 (2) 17:53 (2)	07:50 16:09		08:49 15:30
12	08:53 15:56	07:56 17:06	15	06:43 18:11	13 17:15 (2)	06:17 20:19	05:02 21:25	04:17 22:16	04:33 22:10	05:32 21:10	06:38 19:47		07:42 18:23	17:53 (2) 17:58 (2)	07:53 16:07		08:50 15:29
13	08:52 15:58	07:54 17:08	14	06:41 18:13	9 17:16 (2)	06:14 20:21	05:00 21:27	04:16 22:17	04:34 22:09	05:34 21:07	06:40 19:44		07:44 18:20	17:59 (2) 18:04 (2)	07:55 16:05		08:51 15:29
14	08:51 16:00	07:52 17:11	9	06:38 18:15		06:12 20:23	04:58 21:29	04:16 22:18	04:36 22:07	05:36 21:05	06:42 19:41		07:46 18:17	18:05 (2) 18:10 (2)	07:57 16:03		08:52 15:29
15	08:49 16:02	07:49 17:13		06:35 18:17		06:09 20:26	04:56 21:31	04:15 22:18	04:37 22:06	05:38 21:02	06:44 19:38		07:49 18:15	18:12 (2) 18:17 (2)	07:59 16:02		08:53 15:29
16	08:48 16:04	07:47 17:15		06:32 18:20		06:06 20:28	04:53 21:33	04:15 22:19	04:39 22:05	05:40 21:00	06:46 19:35		07:51 18:12	18:18 (2) 18:23 (2)	08:02 16:00		08:54 15:29
17	08:47 16:06	07:44 17:18		06:29 18:22		06:04 20:30	04:51 21:35	04:15 22:20	04:40 22:03	05:43 20:57	06:48 19:32		07:53 18:10	18:24 (2) 18:29 (2)	08:04 15:58		08:55 15:29
18	08:45 16:08	07:42 17:20		06:27 18:24		06:01 20:32	04:49 21:37	04:15 22:20	04:42 22:02	05:45 20:54	06:51 19:30		07:55 18:07	18:30 (2) 18:35 (2)	08:06 15:56		08:56 15:29
19	08:44 16:10	07:39 17:22		06:24 18:26		05:58 20:35	04:48 21:39	04:15 22:20	04:44 22:00	05:47 20:52	06:53 19:27		07:58 18:04	18:36 (2) 18:41 (2)	08:08 15:54		08:57 15:29
20	08:42 16:13	07:37 17:25		06:21 18:28		05:56 20:37	04:46 21:41	04:15 22:21	04:46 21:58	05:49 20:49	06:55 19:24		07:59 18:02	18:42 (2) 18:47 (2)	08:09 15:52		08:58 15:29
21	08:41 16:15	07:34 17:27		06:18 18:31		05:53 20:39	04:44 21:43	04:15 22:21	04:47 21:57	05:51 20:47	06:57 19:21		08:02 17:59	18:48 (2) 18:53 (2)	08:13 15:51		08:58 15:30
22	08:39 16:17	07:32 17:29		06:15 18:33		05:50 20:41	04:42 21:45	04:15 22:21	04:49 21:55	05:53 20:44	06:59 19:18		08:04 17:56	18:54 (2) 18:59 (2)	08:15 15:49		08:59 15:30
23	08:38 16:19	07:29 17:32		06:13 18:35		05:48 20:43	04:40 21:47	04:15 22:21	04:51 21:53	05:55 20:41	07:01 19:16		08:07 17:54	19:00 (2) 19:05 (2)	08:17 15:48		08:59 15:31
24	08:36 16:21	07:26 17:34		06:10 18:37		05:45 20:46	04:38 21:49	04:15 22:22	04:53 21:51	05:58 20:39	07:03 19:13		08:09 17:51	19:06 (2) 19:11 (2)	08:19 15:46		09:00 15:31
25	08:34 16:24	07:24 17:36		06:07 18:39		05:43 20:48	04:37 21:51	04:16 22:21	04:55 21:49	06:00 20:36	07:05 19:10		07:11 16:49	19:12 (2) 19:17 (2)	08:21 15:45		09:00 15:32
26	08:32 16:26	07:31 17:39		06:04 18:42		05:40 20:50	04:35 21:52	04:16 22:21	04:57 21:47	06:02 20:33	07:07 19:07		07:14 16:46	19:18 (2) 19:23 (2)	08:23 15:43		09:00 15:33
27	08:31 16:28	07:19 17:41		06:01 18:44		05:37 20:52	04:34 21:54	04:17 22:21	04:59 21:45	06:04 20:31	07:10 19:04		07:16 16:44	19:24 (2) 19:29 (2)	08:25 15:42		09:01 15:34
28	08:29 16:30	07:16 17:43		05:59 18:46		05:35 20:54	04:32 21:56	04:17 22:21	05:01 21:43	06:06 20:28	07:12 19:02		07:18 16:41	19:30 (2) 19:35 (2)	08:27 15:41		09:01 15:34
29	08:27 16:33			06:56 19:48		05:32 20:57	04:31 21:58	04:18 22:21	05:03 21:41	06:08 20:25	07:14 18:59		07:20 16:39	19:36 (2) 19:41 (2)	08:29 15:39		09:01 15:35
30	08:25 16:35			06:53 19:50		05:30 20:59	04:29 21:59	04:19 22:20	05:05 21:39	06:10 20:23	07:16 18:56		07:23 16:37	19:42 (2) 19:47 (2)	08:31 15:38		09:01 15:37
31	08:23 16:37			06:50 19:53			04:28 22:01		05:07 21:37	06:12 20:20			07:25 16:34	19:48 (2) 19:53 (2)	08:31 15:40 (4)		09:00 15:38
Potential sun hours	227	262	173	365		429	515	539	538	474	386	321	208	241	118	207	
Total, worst case			0.19	152							6	208	0.28		118		
Sun reduction			1.00	0.40							0.46	0.28			0.08		
Wind time red.			1.00	1.00							1.00	1.00			1.00		
Oper. dir. red.			1.00	1.00							1.00	1.00			1.00		
Total reduction			0.19	0.40							0.46	0.28			0.08		
Total, real		34		61							3	59		9			

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Last time (hh:mm) with flicker	(WTG causing flicker last time)

Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Rigas iela 29 (94010010711001) - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (605)

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
0.80 1.82 4.75 6.09 9.67 10.05 8.16 7.72 5.94 2.93 0.63 0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:27 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
2	09:00 15:40	08:19 16:42	07:11 17:48	06:45 19:57	05:25 21:04	04:25 22:04	04:20 22:20	05:11 21:33	06:17 20:15	07:20 18:50	07:30 16:29	08:35 15:36
3	09:00 15:42	08:17 16:44	07:08 17:50	06:42 19:59	05:23 21:06	04:24 22:06	04:21 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:37 15:35
4	08:59 15:43	08:15 16:47	07:05 17:53	06:39 20:02	05:20 21:08	04:23 22:07	04:22 22:18	05:15 21:29	06:21 20:09	07:25 18:45	07:34 16:25	08:38 15:34
5	08:59 15:45	08:13 16:49	07:03 17:55	06:36 20:04	05:18 21:10	04:22 22:08	04:23 22:18	05:17 21:26	06:23 20:06	07:27 18:42	07:37 16:23	08:40 15:33
6	08:58 15:46	08:10 16:52	07:00 17:57	06:34 20:06	05:15 21:12	04:21 22:10	04:25 22:17	05:19 21:24	06:25 20:03	07:29 18:39	07:39 16:20	08:42 15:32
7	08:58 15:48	08:08 16:54	06:57 17:59	06:31 20:08	05:13 21:15	04:20 22:11	04:26 22:16	05:21 21:22	06:27 20:01	07:31 18:37	07:41 16:18	08:43 15:32
8	08:57 15:49	08:06 16:56	06:54 18:02	06:28 20:10	05:11 21:17	04:19 22:12	04:27 22:15	05:23 21:19	06:30 19:58	07:33 18:34	07:44 16:16	08:45 15:31
9	08:56 15:51	08:04 16:59	06:52 18:04	06:25 20:13	05:09 21:19	04:18 22:13	04:28 22:14	05:26 21:17	06:32 19:55	07:36 18:31	07:46 16:14	08:46 15:30
10	08:55 15:53	08:01 17:01	06:49 18:06	06:23 20:15	05:06 21:21	04:18 22:14	04:30 22:13	05:28 21:15	06:34 19:52	07:38 18:28	07:48 16:12	08:48 15:30
11	08:54 15:55	07:59 17:03	06:46 18:08	06:20 20:17	05:04 21:23	04:17 22:15	04:31 22:12	05:30 21:12	06:36 19:50	07:40 18:26	07:51 16:10	08:49 15:30
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14	08:51 16:00	07:52 17:11	06:38 18:15	06:12 20:24	04:58 21:29	04:16 22:18	04:36 22:08	05:36 21:05	06:42 19:41	07:47 18:18	07:57 16:03	08:53 15:29
15	08:50 16:02	07:49 17:13	06:35 18:17	06:09 20:26	04:56 21:32	04:15 22:19	04:37 22:06	05:38 21:02	06:44 19:38	07:49 18:15	08:00 16:02	08:54 15:29
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28	08:29 16:30	07:16 17:43	05:59 18:46	05:35 20:55	04:32 21:56	04:17 22:21	05:01 21:44	06:06 20:28	07:12 19:02	07:18 16:41	08:27 15:41	09:01 15:34
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31	08:23 16:37		06:50 19:53		04:28 22:01		05:07 21:38	06:13 20:20		07:25 16:34		09:01 15:38
Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Last time (hh:mm) with flicker	(WTG causing flicker last time)
	Minutes with flicker		

Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Rigas iela 29 (94010010711002) - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (607)

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:27 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
2	09:00 15:40	08:19 16:42	07:11 17:48	06:45 19:57	05:25 21:04	04:25 22:04	04:20 22:20	05:11 21:33	06:17 20:15	07:20 18:50	07:30 16:29	08:35 15:36
3	09:00 15:42	08:17 16:44	07:08 17:50	06:42 19:59	05:23 21:06	04:24 22:06	04:21 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:37 15:35
4	08:59 15:43	08:15 16:47	07:05 17:53	06:39 20:02	05:20 21:08	04:23 22:07	04:22 22:18	05:15 21:29	06:21 20:09	07:25 18:45	07:34 16:25	08:38 15:34
5	08:59 15:45	08:13 16:49	07:03 17:55	06:36 20:04	05:18 21:10	04:22 22:08	04:23 22:18	05:17 21:26	06:23 20:06	07:27 18:42	07:37 16:23	08:40 15:33
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10	08:55 15:53	08:01 17:01	06:49 18:06	06:23 20:15	05:06 21:21	04:18 22:14	04:30 22:13	05:28 21:15	06:34 19:52	07:38 18:28	07:48 16:12	08:48 15:30
11	08:54 15:55	07:59 17:03	06:46 18:08	06:20 20:17	05:04 21:23	04:17 22:15	04:31 22:12	05:30 21:12	06:36 19:50	07:40 18:26	07:51 16:10	08:49 15:30
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18	08:46 16:08	07:42 17:20	06:27 18:24	06:01 20:33	04:49 21:38	04:15 22:20	04:42 22:02	05:45 20:55	06:51 19:30	07:56 18:07	08:06 15:56	08:56 15:29
19	08:44 16:10	07:39 17:22	06:24 18:26	05:58 20:35	04:48 21:40	04:14 22:21	04:44 22:00	05:47 20:52	06:53 19:27	07:58 18:04	08:09 15:54	08:57 15:29
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31	08:23 16:37		06:50 19:53		04:28 22:01		05:07 21:38	06:13 20:20		07:25 16:34		09:01 15:38
Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Rigas iela 31A - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (603)
 Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:27 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
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20	08:43 16:13	07:37 17:25	06:21 18:29	05:56 20:37	04:46 21:42	04:15 22:21	04:46 21:59	05:49 20:50	06:55 19:24	08:00 18:02	08:11 15:52	08:58 15:29
21	08:41 16:15	07:34 17:27	06:18 18:31	05:53 20:39	04:44 21:44	04:15 22:21	04:47 21:57	05:51 20:47	06:57 19:21	08:02 17:59	08:13 15:51	08:59 15:30
22	08:40 16:17	07:32 17:29	06:16 18:33	05:50 20:41	04:42 21:45	04:15 22:22	04:49 21:55	05:53 20:44	06:59 19:19	08:05 17:57	08:15 15:49	08:59 15:30
23	08:38 16:19	07:29 17:32	06:13 18:35	05:48 20:44	04:40 21:47	04:15 22:22	04:51 21:53	05:55 20:42	07:01 19:16	08:07 17:54	08:17 15:48	09:00 15:31
24	08:36 16:21	07:27 17:34	06:10 18:37	05:45 20:46	04:38 21:49	04:15 22:22	04:53 21:52	05:58 20:39	07:03 19:13	08:09 17:51	08:19 15:46	09:00 15:31
25	08:34 16:24	07:24 17:36	06:07 18:40	05:43 20:48	04:37 21:51	04:16 22:22	04:55 21:50	06:00 20:36	07:06 19:10	07:11 16:49	08:21 15:45	09:00 15:32
26	08:33 16:26	07:21 17:39	06:04 18:42	05:40 20:50	04:35 21:53	04:16 22:22	04:57 21:48	06:02 20:34	07:08 19:07	07:14 16:46	08:23 15:43	09:01 15:33
27	08:31 16:28	07:19 17:41	06:02 18:44	05:37 20:53	04:34 21:55	04:17 22:22	04:59 21:46	06:04 20:31	07:10 19:04	07:16 16:44	08:25 15:42	09:01 15:34
28	08:29 16:30	07:16 17:43	05:59 18:46	05:35 20:55	04:32 21:56	04:17 22:21	05:01 21:44	06:06 20:28	07:12 19:02	07:18 16:41	08:27 15:41	09:01 15:34
29	08:27 16:33		05:56 19:48	05:32 20:57	04:31 21:58	04:18 22:21	05:03 21:42	06:08 20:26	07:14 18:59	07:21 16:39	08:29 15:39	09:01 15:35
30	08:25 16:35		05:53 19:51	05:30 20:59	04:29 22:00	04:19 22:21	05:05 21:40	06:10 20:23	07:16 18:56	07:23 16:37	08:31 15:38	09:01 15:36
31	08:23 16:37		05:50 19:53		04:28 22:01		05:07 21:38	06:13 20:20		07:25 16:34		09:01 15:38
Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Rigas iela 31B - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (740)
Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:27 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
2	09:00 15:40	08:19 16:42	07:11 17:48	06:45 19:57	05:25 21:04	04:25 22:04	04:20 22:20	05:11 21:33	06:17 20:15	07:20 18:50	07:30 16:29	08:35 15:36
3	09:00 15:42	08:17 16:44	07:08 17:50	06:42 19:59	05:23 21:06	04:24 22:06	04:21 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:37 15:35
4	08:59 15:43	08:15 16:47	07:05 17:53	06:39 20:02	05:20 21:08	04:23 22:07	04:22 22:18	05:15 21:29	06:21 20:09	07:25 18:45	07:34 16:25	08:38 15:34
5	08:59 15:45	08:13 16:49	07:03 17:55	06:36 20:04	05:18 21:10	04:22 22:08	04:23 22:18	05:17 21:26	06:23 20:06	07:27 18:42	07:37 16:23	08:40 15:33
6	08:58 15:46	08:10 16:52	07:00 17:57	06:34 20:06	05:15 21:12	04:21 22:10	04:25 22:17	05:19 21:24	06:25 20:03	07:29 18:39	07:39 16:20	08:42 15:32
7	08:58 15:48	08:08 16:54	06:57 17:59	06:31 20:08	05:13 21:15	04:20 22:11	04:26 22:16	05:21 21:22	06:27 20:01	07:31 18:37	07:41 16:18	08:43 15:32
8	08:57 15:49	08:06 16:56	06:54 18:02	06:28 20:10	05:11 21:17	04:19 22:12	04:27 22:15	05:23 21:19	06:30 19:58	07:33 18:34	07:44 16:16	08:45 15:31
9	08:56 15:51	08:04 16:59	06:52 18:04	06:25 20:13	05:09 21:19	04:18 22:13	04:28 22:14	05:26 21:17	06:32 19:55	07:36 18:31	07:46 16:14	08:46 15:30
10	08:55 15:53	08:01 17:01	06:49 18:06	06:23 20:15	05:06 21:21	04:18 22:14	04:30 22:13	05:28 21:15	06:34 19:52	07:38 18:28	07:48 16:12	08:48 15:30
11	08:54 15:55	07:59 17:03	06:46 18:08	06:20 20:17	05:04 21:23	04:17 22:15	04:31 22:12	05:30 21:12	06:36 19:50	07:40 18:26	07:51 16:10	08:49 15:30
12	08:53 15:56	07:57 17:06	06:43 18:11	06:17 20:19	05:02 21:25	04:16 22:16	04:33 22:10	05:32 21:10	06:38 19:47	07:42 18:23	07:53 16:07	08:50 15:29
13	08:52 15:58	07:54 17:08	06:41 18:13	06:14 20:21	05:00 21:27	04:16 22:17	04:34 22:09	05:34 21:07	06:40 19:44	07:44 18:20	07:55 16:05	08:51 15:29
14	08:51 16:00	07:52 17:11	06:38 18:15	06:12 20:24	04:58 21:29	04:16 22:18	04:36 22:08	05:36 21:05	06:42 19:41	07:47 18:18	07:57 16:03	08:53 15:29
15	08:50 16:02	07:49 17:13	06:35 18:17	06:09 20:26	04:56 21:32	04:15 22:19	04:37 22:06	05:38 21:02	06:44 19:38	07:49 18:15	08:00 16:02	08:54 15:29
16	08:48 16:04	07:47 17:15	06:32 18:20	06:06 20:28	04:53 21:34	04:15 22:19	04:39 22:05	05:40 21:00	06:46 19:35	07:51 18:12	08:02 16:00	08:55 15:29
17	08:47 16:06	07:44 17:18	06:30 18:22	06:04 20:30	04:51 21:36	04:15 22:20	04:40 22:03	05:43 20:57	06:49 19:33	07:53 18:10	08:04 15:58	08:56 15:29
18	08:46 16:08	07:42 17:20	06:27 18:24	06:01 20:33	04:49 21:38	04:15 22:20	04:42 22:02	05:45 20:55	06:51 19:30	07:56 18:07	08:06 15:56	08:56 15:29
19	08:44 16:10	07:39 17:22	06:24 18:26	05:58 20:35	04:48 21:40	04:14 22:21	04:44 22:00	05:47 20:52	06:53 19:27	07:58 18:04	08:09 15:54	08:57 15:29
20	08:43 16:13	07:37 17:25	06:21 18:29	05:56 20:37	04:46 21:42	04:15 22:21	04:46 21:59	05:49 20:50	06:55 19:24	08:00 18:02	08:11 15:52	08:58 15:29
21	08:41 16:15	07:34 17:27	06:18 18:31	05:53 20:39	04:44 21:44	04:15 22:21	04:47 21:57	05:51 20:47	06:57 19:21	08:02 17:59	08:13 15:51	08:59 15:30
22	08:40 16:17	07:32 17:29	06:16 18:33	05:50 20:41	04:42 21:45	04:15 22:22	04:49 21:55	05:53 20:44	06:59 19:19	08:05 17:57	08:15 15:49	08:59 15:30
23	08:38 16:19	07:29 17:32	06:13 18:35	05:48 20:44	04:40 21:47	04:15 22:22	04:51 21:53	05:55 20:42	07:01 19:16	08:07 17:54	08:17 15:48	09:00 15:31
24	08:36 16:21	07:27 17:34	06:10 18:37	05:45 20:46	04:38 21:49	04:15 22:22	04:53 21:52	05:58 20:39	07:03 19:13	08:09 17:51	08:19 15:46	09:00 15:31
25	08:34 16:24	07:24 17:36	06:07 18:40	05:43 20:48	04:37 21:51	04:16 22:22	04:55 21:50	06:00 20:36	07:06 19:10	07:11 16:49	08:21 15:45	09:00 15:32
26	08:33 16:26	07:21 17:39	06:04 18:42	05:40 20:50	04:35 21:53	04:16 22:22	04:57 21:48	06:02 20:34	07:08 19:07	07:14 16:46	08:23 15:43	09:01 15:33
27	08:31 16:28	07:19 17:41	06:02 18:44	05:37 20:53	04:34 21:55	04:17 22:22	04:59 21:46	06:04 20:31	07:10 19:04	07:16 16:44	08:25 15:42	09:01 15:34
28	08:29 16:30	07:16 17:43	05:59 18:46	05:35 20:55	04:32 21:56	04:17 22:21	05:01 21:44	06:06 20:28	07:12 19:02	07:18 16:41	08:27 15:41	09:01 15:34
29	08:27 16:33		06:56 19:48	05:32 20:57	04:31 21:58	04:18 22:21	05:03 21:42	06:08 20:26	07:14 18:59	07:21 16:39	08:29 15:39	09:01 15:35
30	08:25 16:35		06:53 19:51	05:30 20:59	04:29 22:00	04:19 22:21	05:05 21:40	06:10 20:23	07:16 18:56	07:23 16:37	08:31 15:38	09:01 15:36
31	08:23 16:37		06:50 19:53		04:28 22:01		05:07 21:37	06:13 20:20		07:25 16:34		09:01 15:38
Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Rigas iela 33 (94010010712001) - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (596)

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:27 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
2	09:00 15:40	08:19 16:42	07:11 17:48	06:45 19:57	05:25 21:04	04:25 22:04	04:20 22:20	05:11 21:33	06:17 20:15	07:20 18:50	07:30 16:29	08:35 15:36
3	09:00 15:42	08:17 16:44	07:08 17:50	06:42 19:59	05:23 21:06	04:24 22:06	04:21 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:37 15:35
4	08:59 15:43	08:15 16:47	07:05 17:53	06:39 20:02	05:20 21:08	04:23 22:07	04:22 22:18	05:15 21:29	06:21 20:09	07:25 18:45	07:34 16:25	08:38 15:34
5	08:59 15:45	08:13 16:49	07:03 17:55	06:36 20:04	05:18 21:10	04:22 22:08	04:23 22:18	05:17 21:26	06:23 20:06	07:27 18:42	07:37 16:23	08:40 15:33
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7	08:58 15:48	08:08 16:54	06:57 17:59	06:31 20:08	05:13 21:15	04:20 22:11	04:26 22:16	05:21 21:22	06:27 20:01	07:31 18:37	07:41 16:18	08:43 15:32
8	08:57 15:49	08:06 16:56	06:54 18:02	06:28 20:10	05:11 21:17	04:19 22:12	04:27 22:15	05:23 21:19	06:30 19:58	07:34 18:34	07:44 16:16	08:45 15:31
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10	08:55 15:53	08:01 17:01	06:49 18:06	06:23 20:15	05:06 21:21	04:18 22:14	04:30 22:13	05:28 21:15	06:34 19:52	07:38 18:28	07:48 16:12	08:48 15:30
11	08:54 15:55	07:59 17:03	06:46 18:08	06:20 20:17	05:04 21:23	04:17 22:15	04:31 22:12	05:30 21:12	06:36 19:50	07:40 18:26	07:51 16:10	08:49 15:30
12	08:53 15:56	07:57 17:06	06:43 18:11	06:17 20:19	05:02 21:25	04:16 22:16	04:33 22:10	05:32 21:10	06:38 19:47	07:42 18:23	07:53 16:07	08:50 15:29
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22	08:40 16:17	07:32 17:29	06:16 18:33	05:50 20:41	04:42 21:45	04:15 22:22	04:49 21:55	05:53 20:44	06:59 19:19	08:05 17:57	08:15 15:49	08:59 15:30
23	08:38 16:19	07:29 17:32	06:13 18:35	05:48 20:44	04:40 21:47	04:15 22:22	04:51 21:53	05:55 20:42	07:01 19:16	08:07 17:54	08:17 15:48	09:00 15:31
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29	08:27 16:33		06:56 19:48	05:32 20:57	04:31 21:58	04:18 22:21	05:03 21:42	06:08 20:26	07:14 18:59	07:21 16:39	08:29 15:39	09:01 15:35
30	08:25 16:35		06:53 19:51	05:30 20:59	04:29 22:00	04:19 22:21	05:05 21:40	06:10 20:23	07:16 18:56	07:23 16:37	08:31 15:38	09:01 15:36
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Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Rigas iela 33 (94010010712002) - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (595)

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
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3	09:00 15:42	08:17 16:44	07:08 17:50	06:42 19:59	05:23 21:06	04:24 22:06	04:21 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:37 15:35
4	08:59 15:43	08:15 16:47	07:05 17:53	06:39 20:02	05:20 21:08	04:23 22:07	04:22 22:18	05:15 21:29	06:21 20:09	07:25 18:45	07:34 16:25	08:38 15:34
5	08:59 15:45	08:13 16:49	07:03 17:55	06:36 20:04	05:18 21:10	04:22 22:08	04:23 22:18	05:17 21:26	06:23 20:06	07:27 18:42	07:37 16:23	08:40 15:33
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9	08:56 15:51	08:04 16:59	06:52 18:04	06:25 20:13	05:09 21:19	04:18 22:13	04:28 22:14	05:26 21:17	06:32 19:55	07:36 18:31	07:46 16:14	08:46 15:30
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31	08:23 16:37		06:50 19:53		04:28 22:01		05:07 21:38	06:13 20:20		07:25 16:34		09:01 15:38
Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Rigas iela 35 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (620)
Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:27 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
2	09:00 15:40	08:19 16:42	07:11 17:48	06:45 19:57	05:25 21:04	04:25 22:04	04:20 22:20	05:11 21:33	06:17 20:15	07:20 18:51	07:30 16:29	08:35 15:36
3	09:00 15:42	08:17 16:44	07:08 17:50	06:42 19:59	05:23 21:06	04:24 22:06	04:21 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:37 15:35
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31	08:23 16:37		06:50 19:53		04:28 22:01		05:07 21:38	06:13 20:20		07:25 16:34		09:01 15:38
Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Rigas iela 35A - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (615)
 Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:27 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
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23	08:38 16:19	07:29 17:32	06:13 18:35	05:48 20:44	04:40 21:47	04:15 22:22	04:51 21:53	05:55 20:42	07:01 19:16	08:07 17:54	08:17 15:48	09:00 15:31
24	08:36 16:21	07:27 17:34	06:10 18:37	05:45 20:46	04:38 21:49	04:15 22:22	04:53 21:52	05:58 20:39	07:03 19:13	08:09 17:51	08:19 15:46	09:00 15:31
25	08:34 16:24	07:24 17:36	06:07 18:40	05:43 20:48	04:37 21:51	04:16 22:22	04:55 21:50	06:00 20:36	07:06 19:10	07:11 16:49	08:21 15:45	09:00 15:32
26	08:33 16:26	07:21 17:39	06:04 18:42	05:40 20:50	04:35 21:53	04:16 22:22	04:57 21:48	06:02 20:34	07:08 19:07	07:14 16:46	08:23 15:43	09:01 15:33
27	08:31 16:28	07:19 17:41	06:02 18:44	05:37 20:53	04:34 21:55	04:17 22:22	04:59 21:46	06:04 20:31	07:10 19:04	07:16 16:44	08:25 15:42	09:01 15:34
28	08:29 16:30	07:16 17:43	05:59 18:46	05:35 20:55	04:32 21:56	04:17 22:21	05:01 21:44	06:06 20:28	07:12 19:02	07:18 16:41	08:27 15:41	09:01 15:34
29	08:27 16:33		06:56 19:48	05:32 20:57	04:31 21:58	04:18 22:21	05:03 21:42	06:08 20:26	07:14 18:59	07:21 16:39	08:29 15:39	09:01 15:35
30	08:25 16:35		06:53 19:51	05:30 20:59	04:29 22:00	04:19 22:21	05:05 21:40	06:10 20:23	07:16 18:56	07:23 16:37	08:31 15:38	09:01 15:36
31	08:23 16:37		06:50 19:53		04:28 22:01		05:07 21:38	06:13 20:20		07:25 16:34		09:01 15:38
Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
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Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Rigas iela 35B - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (621)
Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:27 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
2	09:00 15:40	08:19 16:42	07:11 17:48	06:45 19:57	05:25 21:04	04:25 22:04	04:20 22:20	05:11 21:33	06:17 20:15	07:20 18:50	07:30 16:29	08:35 15:36
3	09:00 15:42	08:17 16:44	07:08 17:50	06:42 19:59	05:23 21:06	04:24 22:06	04:21 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:37 15:35
4	08:59 15:43	08:15 16:47	07:05 17:53	06:39 20:02	05:20 21:08	04:23 22:07	04:22 22:18	05:15 21:29	06:21 20:09	07:25 18:45	07:34 16:25	08:38 15:34
5	08:59 15:45	08:13 16:49	07:03 17:55	06:36 20:04	05:18 21:10	04:22 22:08	04:23 22:18	05:17 21:26	06:23 20:06	07:27 18:42	07:37 16:23	08:40 15:33
6	08:58 15:46	08:10 16:52	07:00 17:57	06:34 20:06	05:15 21:12	04:21 22:10	04:25 22:17	05:19 21:24	06:25 20:03	07:29 18:39	07:39 16:20	08:42 15:32
7	08:58 15:48	08:08 16:54	06:57 17:59	06:31 20:08	05:13 21:15	04:20 22:11	04:26 22:16	05:21 21:22	06:27 20:01	07:31 18:37	07:41 16:18	08:43 15:32
8	08:57 15:49	08:06 16:56	06:54 18:02	06:28 20:10	05:11 21:17	04:19 22:12	04:27 22:15	05:23 21:19	06:30 19:58	07:34 18:34	07:44 16:16	08:45 15:31
9	08:56 15:51	08:04 16:59	06:52 18:04	06:25 20:13	05:09 21:19	04:18 22:13	04:28 22:14	05:26 21:17	06:32 19:55	07:36 18:31	07:46 16:14	08:46 15:30
10	08:55 15:53	08:01 17:01	06:49 18:06	06:23 20:15	05:06 21:21	04:18 22:14	04:30 22:13	05:28 21:15	06:34 19:52	07:38 18:28	07:48 16:12	08:48 15:30
11	08:54 15:55	07:59 17:03	06:46 18:08	06:20 20:17	05:04 21:23	04:17 22:15	04:31 22:12	05:30 21:12	06:36 19:50	07:40 18:26	07:51 16:10	08:49 15:30
12	08:53 15:56	07:57 17:06	06:43 18:11	06:17 20:19	05:02 21:25	04:16 22:16	04:33 22:10	05:32 21:10	06:38 19:47	07:42 18:23	07:53 16:07	08:50 15:29
13	08:52 15:58	07:54 17:08	06:41 18:13	06:14 20:21	05:00 21:27	04:16 22:17	04:34 22:09	05:34 21:07	06:40 19:44	07:44 18:20	07:55 16:05	08:51 15:29
14	08:51 16:00	07:52 17:11	06:38 18:15	06:12 20:24	04:58 21:29	04:16 22:18	04:36 22:08	05:36 21:05	06:42 19:41	07:47 18:18	07:57 16:03	08:53 15:29
15	08:50 16:02	07:49 17:13	06:35 18:17	06:09 20:26	04:56 21:32	04:15 22:19	04:37 22:06	05:38 21:02	06:44 19:38	07:49 18:15	08:00 16:02	08:54 15:29
16	08:48 16:04	07:47 17:15	06:32 18:20	06:06 20:28	04:53 21:34	04:15 22:19	04:39 22:05	05:40 21:00	06:46 19:35	07:51 18:12	08:02 16:00	08:55 15:29
17	08:47 16:06	07:44 17:18	06:30 18:22	06:04 20:30	04:51 21:36	04:15 22:20	04:40 22:03	05:43 20:57	06:49 19:33	07:53 18:10	08:04 15:58	08:56 15:29
18	08:46 16:08	07:42 17:20	06:27 18:24	06:01 20:33	04:49 21:38	04:15 22:20	04:42 22:02	05:45 20:55	06:51 19:30	07:56 18:07	08:06 15:56	08:56 15:29
19	08:44 16:10	07:39 17:22	06:24 18:26	05:58 20:35	04:48 21:40	04:15 22:21	04:44 22:00	05:47 20:52	06:53 19:27	07:58 18:04	08:09 15:54	08:57 15:29
20	08:43 16:13	07:37 17:25	06:21 18:29	05:56 20:37	04:46 21:42	04:15 22:21	04:46 21:59	05:49 20:50	06:55 19:24	08:00 18:02	08:11 15:52	08:58 15:29
21	08:41 16:15	07:34 17:27	06:18 18:31	05:53 20:39	04:44 21:44	04:15 22:21	04:47 21:57	05:51 20:47	06:57 19:21	08:02 17:59	08:13 15:51	08:59 15:30
22	08:40 16:17	07:32 17:29	06:16 18:33	05:50 20:41	04:42 21:45	04:15 22:22	04:49 21:55	05:53 20:44	06:59 19:19	08:05 17:57	08:15 15:49	08:59 15:30
23	08:38 16:19	07:29 17:32	06:13 18:35	05:48 20:44	04:40 21:47	04:15 22:22	04:51 21:53	05:55 20:42	07:01 19:16	08:07 17:54	08:17 15:48	09:00 15:31
24	08:36 16:21	07:27 17:34	06:10 18:37	05:45 20:46	04:38 21:49	04:15 22:22	04:53 21:52	05:58 20:39	07:03 19:13	08:09 17:51	08:19 15:46	09:00 15:31
25	08:34 16:24	07:24 17:36	06:07 18:40	05:43 20:48	04:37 21:51	04:16 22:22	04:55 21:50	06:00 20:36	07:06 19:10	07:11 16:49	08:21 15:45	09:00 15:32
26	08:33 16:26	07:21 17:39	06:04 18:42	05:40 20:50	04:35 21:53	04:16 22:22	04:57 21:48	06:02 20:34	07:08 19:07	07:14 16:46	08:23 15:43	09:01 15:33
27	08:31 16:28	07:19 17:41	06:02 18:44	05:37 20:53	04:34 21:55	04:17 22:22	04:59 21:46	06:04 20:31	07:10 19:04	07:16 16:44	08:25 15:42	09:01 15:34
28	08:29 16:30	07:16 17:43	05:59 18:46	05:35 20:55	04:32 21:56	04:17 22:21	05:01 21:44	06:06 20:28	07:12 19:02	07:18 16:41	08:27 15:41	09:01 15:34
29	08:27 16:33		05:56 19:48	05:32 20:57	04:31 21:58	04:18 22:21	05:03 21:42	06:08 20:26	07:14 18:59	07:21 16:39	08:29 15:39	09:01 15:35
30	08:25 16:35		05:53 19:51	05:30 20:59	04:29 22:00	04:19 22:21	05:05 21:40	06:10 20:23	07:16 18:56	07:23 16:37	08:31 15:38	09:01 15:36
31	08:23 16:37		05:50 19:53		04:28 22:01		05:07 21:37	06:13 20:20		07:25 16:34		09:01 15:38
Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Rigas iela 38 (94010010805002) - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (626)

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:27 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
2	09:00 15:40	08:19 16:42	07:11 17:48	06:45 19:57	05:25 21:04	04:25 22:04	04:20 22:20	05:11 21:33	06:17 20:15	07:20 18:50	07:30 16:29	08:35 15:36
3	09:00 15:42	08:17 16:44	07:08 17:50	06:42 19:59	05:23 21:06	04:24 22:06	04:21 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:37 15:35
4	08:59 15:43	08:15 16:47	07:05 17:53	06:39 20:02	05:20 21:08	04:23 22:07	04:22 22:18	05:15 21:29	06:21 20:09	07:25 18:45	07:34 16:25	08:38 15:34
5	08:59 15:45	08:13 16:49	07:03 17:55	06:36 20:04	05:18 21:10	04:22 22:08	04:23 22:18	05:17 21:26	06:23 20:06	07:27 18:42	07:37 16:23	08:40 15:33
6	08:58 15:46	08:10 16:52	07:00 17:57	06:34 20:06	05:15 21:12	04:21 22:10	04:25 22:17	05:19 21:24	06:25 20:03	07:29 18:39	07:39 16:20	08:42 15:32
7	08:58 15:48	08:08 16:54	06:57 17:59	06:31 20:08	05:13 21:15	04:20 22:11	04:26 22:16	05:21 21:22	06:27 20:01	07:31 18:37	07:41 16:18	08:43 15:32
8	08:57 15:49	08:06 16:56	06:54 18:02	06:28 20:10	05:11 21:17	04:19 22:12	04:27 22:15	05:23 21:19	06:30 19:58	07:34 18:34	07:44 16:16	08:45 15:31
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10	08:55 15:53	08:01 17:01	06:49 18:06	06:23 20:15	05:06 21:21	04:18 22:14	04:30 22:13	05:28 21:15	06:34 19:52	07:38 18:28	07:48 16:12	08:48 15:30
11	08:54 15:55	07:59 17:03	06:46 18:08	06:20 20:17	05:04 21:23	04:17 22:15	04:31 22:12	05:30 21:12	06:36 19:50	07:40 18:26	07:51 16:10	08:49 15:30
12	08:53 15:56	07:57 17:06	06:43 18:11	06:17 20:19	05:02 21:25	04:16 22:16	04:33 22:10	05:32 21:10	06:38 19:47	07:42 18:23	07:53 16:07	08:50 15:29
13	08:52 15:58	07:54 17:08	06:41 18:13	06:14 20:21	05:00 21:27	04:16 22:17	04:34 22:09	05:34 21:07	06:40 19:44	07:44 18:20	07:55 16:05	08:51 15:29
14	08:51 16:00	07:52 17:11	06:38 18:15	06:12 20:24	04:58 21:29	04:16 22:18	04:36 22:08	05:36 21:05	06:42 19:41	07:47 18:18	07:57 16:03	08:53 15:29
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16	08:48 16:04	07:47 17:15	06:32 18:20	06:06 20:28	04:53 21:34	04:15 22:19	04:39 22:05	05:40 21:00	06:46 19:35	07:51 18:12	08:02 16:00	08:55 15:29
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19	08:44 16:10	07:39 17:22	06:24 18:26	05:58 20:35	04:48 21:40	04:14 22:21	04:44 22:00	05:47 20:52	06:53 19:27	07:58 18:04	08:09 15:54	08:57 15:29
20	08:43 16:13	07:37 17:25	06:21 18:29	05:56 20:37	04:46 21:42	04:15 22:21	04:46 21:59	05:49 20:50	06:55 19:24	08:00 18:02	08:11 15:52	08:58 15:29
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22	08:40 16:17	07:32 17:29	06:16 18:33	05:50 20:41	04:42 21:45	04:15 22:22	04:49 21:55	05:53 20:44	06:59 19:19	08:05 17:57	08:15 15:49	08:59 15:30
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24	08:36 16:21	07:27 17:34	06:10 18:37	05:45 20:46	04:38 21:49	04:15 22:22	04:53 21:52	05:58 20:39	07:03 19:13	08:09 17:51	08:19 15:46	09:00 15:31
25	08:34 16:24	07:24 17:36	06:07 18:40	05:43 20:48	04:37 21:51	04:16 22:22	04:55 21:50	06:00 20:36	07:06 19:10	07:11 16:49	08:21 15:45	09:00 15:32
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29	08:27 16:33		06:56 19:48	05:32 20:57	04:31 21:58	04:18 22:21	05:03 21:42	06:08 20:26	07:14 18:59	07:21 16:39	08:29 15:39	09:01 15:35
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Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Rigas iela 40 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (601)
 Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

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6	08:58 15:46	08:10 16:52	07:00 17:57	06:34 20:06	05:15 21:12	04:21 22:10	04:25 22:17	05:19 21:24	06:25 20:03	07:29 18:39	07:39 16:20	08:42 15:32
7	08:58 15:48	08:08 16:54	06:57 17:59	06:31 20:08	05:13 21:15	04:20 22:11	04:26 22:16	05:21 21:22	06:27 20:01	07:31 18:37	07:41 16:18	08:43 15:32
8	08:57 15:49	08:06 16:56	06:55 18:02	06:28 20:10	05:11 21:17	04:19 22:12	04:27 22:15	05:23 21:19	06:30 19:58	07:34 18:34	07:44 16:16	08:45 15:31
9	08:56 15:51	08:04 16:59	06:52 18:04	06:25 20:13	05:09 21:19	04:18 22:13	04:28 22:14	05:26 21:17	06:32 19:55	07:36 18:31	07:46 16:14	08:46 15:30
10	08:55 15:53	08:01 17:01	06:49 18:06	06:23 20:15	05:06 21:21	04:18 22:14	04:30 22:13	05:28 21:15	06:34 19:52	07:38 18:28	07:48 16:12	08:48 15:30
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Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Rigas iela 41 (94010020105001) - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (582)

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:27 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
2	09:00 15:40	08:19 16:42	07:11 17:48	06:45 19:57	05:25 21:04	04:25 22:04	04:20 22:20	05:11 21:33	06:17 20:15	07:20 18:51	07:30 16:29	08:35 15:36
3	09:00 15:42	08:17 16:44	07:08 17:50	06:42 19:59	05:23 21:06	04:24 22:06	04:21 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:37 15:35
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31	08:23 16:37		06:50 19:53		04:28 22:01		05:07 21:37	06:13 20:20		07:25 16:34		09:01 15:38
Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Rigas iela 41 (94010020105003) - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (581)

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
0.80 1.82 4.75 6.09 9.67 10.05 8.16 7.72 5.94 2.93 0.63 0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:28 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
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26	08:33 16:26	07:21 17:39	06:04 18:42	05:40 20:50	04:35 21:53	04:16 22:22	04:57 21:48	06:02 20:34	07:08 19:07	07:14 16:46	08:23 15:43	09:01 15:33
27	08:31 16:28	07:19 17:41	06:02 18:44	05:38 20:53	04:34 21:55	04:17 22:22	04:59 21:46	06:04 20:31	07:10 19:04	07:16 16:44	08:25 15:42	09:01 15:34
28	08:29 16:30	07:16 17:43	05:59 18:46	05:35 20:55	04:32 21:56	04:17 22:21	05:01 21:44	06:06 20:28	07:12 19:02	07:18 16:41	08:27 15:41	09:01 15:34
29	08:27 16:33		05:56 19:48	05:32 20:57	04:31 21:58	04:18 22:21	05:03 21:42	06:08 20:26	07:14 18:59	07:21 16:39	08:29 15:39	09:01 15:35
30	08:25 16:35		05:53 19:51	05:30 20:59	04:29 22:00	04:19 22:21	05:05 21:40	06:10 20:23	07:16 18:56	07:23 16:37	08:31 15:38	09:01 15:37
31	08:23 16:37		05:50 19:53		04:28 22:01		05:07 21:37	06:13 20:20		07:25 16:34		09:01 15:38
Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Last time (hh:mm) with flicker	(WTG causing flicker last time)
	Minutes with flicker		

Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Rigas iela 42 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (641)
Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:27 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
2	09:00 15:40	08:19 16:42	07:11 17:48	06:45 19:57	05:25 21:04	04:25 22:04	04:20 22:20	05:11 21:33	06:17 20:15	07:20 18:50	07:30 16:29	08:35 15:36
3	09:00 15:42	08:17 16:44	07:08 17:50	06:42 19:59	05:23 21:06	04:24 22:06	04:21 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:37 15:35
4	08:59 15:43	08:15 16:47	07:05 17:53	06:39 20:02	05:20 21:08	04:23 22:07	04:22 22:18	05:15 21:29	06:21 20:09	07:25 18:45	07:34 16:25	08:38 15:34
5	08:59 15:45	08:13 16:49	07:03 17:55	06:36 20:04	05:18 21:10	04:22 22:08	04:23 22:18	05:17 21:26	06:23 20:06	07:27 18:42	07:37 16:23	08:40 15:33
6	08:58 15:46	08:10 16:52	07:00 17:57	06:34 20:06	05:15 21:12	04:21 22:10	04:25 22:17	05:19 21:24	06:25 20:03	07:29 18:39	07:39 16:20	08:42 15:32
7	08:58 15:48	08:08 16:54	06:57 17:59	06:31 20:08	05:13 21:15	04:20 22:11	04:26 22:16	05:21 21:22	06:27 20:01	07:31 18:37	07:41 16:18	08:43 15:32
8	08:57 15:49	08:06 16:56	06:55 18:02	06:28 20:10	05:11 21:17	04:19 22:12	04:27 22:15	05:23 21:19	06:30 19:58	07:34 18:34	07:44 16:16	08:45 15:31
9	08:56 15:51	08:04 16:59	06:52 18:04	06:25 20:13	05:09 21:19	04:18 22:13	04:28 22:14	05:26 21:17	06:32 19:55	07:36 18:31	07:46 16:14	08:46 15:30
10	08:55 15:53	08:01 17:01	06:49 18:06	06:23 20:15	05:06 21:21	04:18 22:14	04:30 22:13	05:28 21:15	06:34 19:52	07:38 18:28	07:48 16:12	08:48 15:30
11	08:54 15:55	07:59 17:03	06:46 18:08	06:20 20:17	05:04 21:23	04:17 22:15	04:31 22:12	05:30 21:12	06:36 19:50	07:40 18:26	07:51 16:10	08:49 15:30
12	08:53 15:56	07:57 17:06	06:43 18:11	06:17 20:19	05:02 21:25	04:16 22:16	04:33 22:10	05:32 21:10	06:38 19:47	07:42 18:23	07:53 16:07	08:50 15:29
13	08:52 15:58	07:54 17:08	06:41 18:13	06:14 20:21	05:00 21:27	04:16 22:17	04:34 22:09	05:34 21:07	06:40 19:44	07:44 18:20	07:55 16:05	08:51 15:29
14	08:51 16:00	07:52 17:11	06:38 18:15	06:12 20:24	04:58 21:29	04:16 22:18	04:36 22:08	05:36 21:05	06:42 19:41	07:47 18:18	07:57 16:03	08:53 15:29
15	08:50 16:02	07:49 17:13	06:35 18:17	06:09 20:26	04:56 21:32	04:15 22:19	04:37 22:06	05:38 21:02	06:44 19:38	07:49 18:15	08:00 16:02	08:54 15:29
16	08:48 16:04	07:47 17:15	06:32 18:20	06:06 20:28	04:53 21:34	04:15 22:19	04:39 22:05	05:40 21:00	06:46 19:35	07:51 18:12	08:02 16:00	08:55 15:29
17	08:47 16:06	07:44 17:18	06:30 18:22	06:04 20:30	04:51 21:36	04:15 22:20	04:40 22:03	05:43 20:57	06:49 19:33	07:53 18:10	08:04 15:58	08:56 15:29
18	08:46 16:08	07:42 17:20	06:27 18:24	06:01 20:33	04:49 21:38	04:15 22:20	04:42 22:02	05:45 20:55	06:51 19:30	07:56 18:07	08:06 15:56	08:56 15:29
19	08:44 16:10	07:39 17:22	06:24 18:26	05:58 20:35	04:48 21:40	04:14 22:21	04:44 22:00	05:47 20:52	06:53 19:27	07:58 18:04	08:09 15:54	08:57 15:29
20	08:43 16:13	07:37 17:25	06:21 18:29	05:56 20:37	04:46 21:42	04:15 22:21	04:46 21:59	05:49 20:50	06:55 19:24	08:00 18:02	08:11 15:52	08:58 15:29
21	08:41 16:15	07:34 17:27	06:18 18:31	05:53 20:39	04:44 21:44	04:15 22:21	04:47 21:57	05:51 20:47	06:57 19:21	08:02 17:59	08:13 15:51	08:59 15:30
22	08:40 16:17	07:32 17:29	06:16 18:33	05:50 20:41	04:42 21:45	04:15 22:22	04:49 21:55	05:53 20:44	06:59 19:19	08:05 17:57	08:15 15:49	08:59 15:30
23	08:38 16:19	07:29 17:32	06:13 18:35	05:48 20:44	04:40 21:47	04:15 22:22	04:51 21:53	05:55 20:42	07:01 19:16	08:07 17:54	08:17 15:48	09:00 15:31
24	08:36 16:21	07:27 17:34	06:10 18:37	05:45 20:46	04:38 21:49	04:15 22:22	04:53 21:52	05:58 20:39	07:03 19:13	08:09 17:51	08:19 15:46	09:00 15:31
25	08:34 16:24	07:24 17:36	06:07 18:40	05:43 20:48	04:37 21:51	04:16 22:22	04:55 21:50	06:00 20:36	07:06 19:10	07:11 16:49	08:21 15:45	09:00 15:32
26	08:33 16:26	07:21 17:39	06:04 18:42	05:40 20:50	04:35 21:53	04:16 22:22	04:57 21:48	06:02 20:34	07:08 19:07	07:14 16:46	08:23 15:43	09:01 15:33
27	08:31 16:28	07:19 17:41	06:02 18:44	05:37 20:53	04:34 21:55	04:17 22:22	04:59 21:46	06:04 20:31	07:10 19:04	07:16 16:44	08:25 15:42	09:01 15:34
28	08:29 16:30	07:16 17:43	05:59 18:46	05:35 20:55	04:32 21:56	04:17 22:21	05:01 21:44	06:06 20:28	07:12 19:02	07:18 16:41	08:27 15:41	09:01 15:34
29	08:27 16:33		05:56 19:48	05:32 20:57	04:31 21:58	04:18 22:21	05:03 21:42	06:08 20:26	07:14 18:59	07:21 16:39	08:29 15:39	09:01 15:35
30	08:25 16:35		05:53 19:51	05:30 20:59	04:29 22:00	04:19 22:21	05:05 21:40	06:10 20:23	07:16 18:56	07:23 16:37	08:31 15:38	09:01 15:36
31	08:23 16:37		05:50 19:53		04:28 22:01		05:07 21:38	06:13 20:20		07:25 16:34		09:01 15:38
Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Rigas iela 44 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (643)
 Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:27 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
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4	08:59 15:43	08:15 16:47	07:05 17:53	06:39 20:02	05:20 21:08	04:23 22:07	04:22 22:18	05:15 21:29	06:21 20:09	07:25 18:45	07:34 16:25	08:38 15:34
5	08:59 15:45	08:13 16:49	07:03 17:55	06:36 20:04	05:18 21:10	04:22 22:08	04:23 22:18	05:17 21:26	06:23 20:06	07:27 18:42	07:37 16:23	08:40 15:33
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7	08:58 15:48	08:08 16:54	06:57 17:59	06:31 20:08	05:13 21:15	04:20 22:11	04:26 22:16	05:21 21:22	06:27 20:01	07:31 18:37	07:41 16:18	08:43 15:32
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10	08:55 15:53	08:01 17:01	06:49 18:06	06:23 20:15	05:06 21:21	04:18 22:14	04:30 22:13	05:28 21:15	06:34 19:52	07:38 18:28	07:48 16:12	08:48 15:30
11	08:54 15:55	07:59 17:03	06:46 18:08	06:20 20:17	05:04 21:23	04:17 22:15	04:31 22:12	05:30 21:12	06:36 19:50	07:40 18:26	07:51 16:10	08:49 15:30
12	08:53 15:56	07:57 17:06	06:43 18:11	06:17 20:19	05:02 21:25	04:16 22:16	04:33 22:10	05:32 21:10	06:38 19:47	07:42 18:23	07:53 16:07	08:50 15:29
13	08:52 15:58	07:54 17:08	06:41 18:13	06:14 20:22	05:00 21:27	04:16 22:17	04:34 22:09	05:34 21:07	06:40 19:44	07:44 18:20	07:55 16:05	08:51 15:29
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19	08:44 16:10	07:39 17:22	06:24 18:26	05:58 20:35	04:48 21:40	04:14 22:21	04:44 22:00	05:47 20:52	06:53 19:27	07:58 18:04	08:09 15:54	08:57 15:29
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Total, worst case												
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Table layout: For each day in each month the following matrix apply

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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Rigas iela 45 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (578)
Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
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No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

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10	08:55 15:53	08:01 17:01	06:49 18:06	06:23 20:15	05:06 21:21	04:18 22:14	04:30 22:13	05:28 21:15	06:34 19:52	07:38 18:28	07:48 16:12	08:48 15:30
11	08:54 15:55	07:59 17:03	06:46 18:08	06:20 20:17	05:04 21:23	04:17 22:15	04:31 22:12	05:30 21:12	06:36 19:50	07:40 18:26	07:51 16:10	08:49 15:30
12	08:53 15:57	07:57 17:06	06:44 18:11	06:17 20:19	05:02 21:25	04:17 22:16	04:33 22:10	05:32 21:19	06:38 19:47	07:42 18:23	07:53 16:07	08:50 15:29
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19	08:44 16:10	07:39 17:22	06:24 18:26	05:58 20:35	04:48 21:40	04:15 22:21	04:44 22:00	05:47 20:52	06:53 19:27	07:58 18:04	08:09 15:54	08:57 15:29
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31	08:23 16:37		05:50 19:53		04:28 22:01		05:07 21:38	06:13 20:20		07:25 16:34		09:01 15:38
Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Rigas iela 45A - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (573)
Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:28 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
2	09:00 15:40	08:19 16:42	07:11 17:48	06:45 19:57	05:25 21:04	04:25 22:04	04:20 22:20	05:11 21:33	06:17 20:15	07:21 18:51	07:30 16:29	08:35 15:36
3	09:00 15:42	08:17 16:44	07:08 17:50	06:42 19:59	05:23 21:06	04:24 22:06	04:21 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:37 15:35
4	08:59 15:43	08:15 16:47	07:05 17:53	06:39 20:02	05:20 21:08	04:23 22:07	04:22 22:18	05:15 21:29	06:21 20:09	07:25 18:45	07:34 16:25	08:38 15:34
5	08:59 15:45	08:13 16:49	07:03 17:55	06:36 20:04	05:18 21:10	04:22 22:08	04:24 22:18	05:17 21:26	06:23 20:06	07:27 18:42	07:37 16:23	08:40 15:33
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7	08:58 15:48	08:08 16:54	06:57 17:59	06:31 20:08	05:13 21:15	04:20 22:11	04:26 22:16	05:21 21:22	06:27 20:01	07:31 18:37	07:41 16:18	08:43 15:32
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31	08:23 16:37		06:50 19:53		04:28 22:01		05:07 21:38	06:13 20:20		07:25 16:34		09:01 15:38
Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Rigas iela 46 (94010010811001) - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (634)

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:27 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
2	09:00 15:40	08:19 16:42	07:11 17:48	06:45 19:57	05:25 21:04	04:25 22:04	04:20 22:20	05:11 21:33	06:17 20:15	07:20 18:51	07:30 16:29	08:35 15:36
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31	08:23 16:37		06:50 19:53		04:28 22:01		05:07 21:38	06:13 20:20		07:25 16:34		09:01 15:38
Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Rigas iela 46 (94010010811002) - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (635)

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:27 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
2	09:00 15:40	08:19 16:42	07:11 17:48	06:45 19:57	05:25 21:04	04:25 22:04	04:20 22:20	05:11 21:33	06:17 20:15	07:20 18:51	07:30 16:29	08:35 15:36
3	09:00 15:42	08:17 16:44	07:08 17:50	06:42 19:59	05:23 21:06	04:24 22:06	04:21 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:37 15:35
4	08:59 15:43	08:15 16:47	07:05 17:53	06:39 20:02	05:20 21:08	04:23 22:07	04:22 22:18	05:15 21:29	06:21 20:09	07:25 18:45	07:34 16:25	08:38 15:34
5	08:59 15:45	08:13 16:49	07:03 17:55	06:36 20:04	05:18 21:10	04:22 22:08	04:23 22:18	05:17 21:26	06:23 20:06	07:27 18:42	07:37 16:23	08:40 15:33
6	08:58 15:46	08:10 16:52	07:00 17:57	06:34 20:06	05:15 21:12	04:21 22:10	04:25 22:17	05:19 21:24	06:25 20:04	07:29 18:39	07:39 16:20	08:42 15:32
7	08:58 15:48	08:08 16:54	06:57 17:59	06:31 20:08	05:13 21:15	04:20 22:11	04:26 22:16	05:21 21:22	06:27 20:01	07:31 18:37	07:41 16:18	08:43 15:32
8	08:57 15:49	08:06 16:56	06:55 18:02	06:28 20:10	05:11 21:17	04:19 22:12	04:27 22:15	05:23 21:19	06:30 19:58	07:34 18:34	07:44 16:16	08:45 15:31
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10	08:55 15:53	08:01 17:01	06:49 18:06	06:23 20:15	05:06 21:21	04:18 22:14	04:30 22:13	05:28 21:15	06:34 19:52	07:38 18:28	07:48 16:12	08:48 15:30
11	08:54 15:55	07:59 17:03	06:46 18:08	06:20 20:17	05:04 21:23	04:17 22:15	04:31 22:12	05:30 21:12	06:36 19:50	07:40 18:26	07:51 16:10	08:49 15:30
12	08:53 15:56	07:57 17:06	06:43 18:11	06:17 20:19	05:02 21:25	04:16 22:16	04:33 22:10	05:32 21:10	06:38 19:47	07:42 18:23	07:53 16:07	08:50 15:29
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14	08:51 16:00	07:52 17:11	06:38 18:15	06:12 20:24	04:58 21:29	04:16 22:18	04:36 22:08	05:36 21:05	06:42 19:41	07:47 18:18	07:57 16:03	08:53 15:29
15	08:50 16:02	07:49 17:13	06:35 18:17	06:09 20:26	04:56 21:32	04:15 22:19	04:37 22:06	05:38 21:02	06:44 19:38	07:49 18:15	08:00 16:02	08:54 15:29
16	08:48 16:04	07:47 17:15	06:32 18:20	06:06 20:28	04:53 21:34	04:15 22:19	04:39 22:05	05:40 21:00	06:46 19:35	07:51 18:12	08:02 16:00	08:55 15:29
17	08:47 16:06	07:44 17:18	06:30 18:22	06:04 20:30	04:51 21:36	04:15 22:20	04:40 22:03	05:43 20:57	06:49 19:33	07:53 18:10	08:04 15:58	08:56 15:29
18	08:46 16:08	07:42 17:20	06:27 18:24	06:01 20:33	04:49 21:38	04:15 22:20	04:42 22:02	05:45 20:55	06:51 19:30	07:56 18:07	08:06 15:56	08:56 15:29
19	08:44 16:10	07:39 17:22	06:24 18:26	05:58 20:35	04:48 21:40	04:14 22:21	04:44 22:00	05:47 20:52	06:53 19:27	07:58 18:04	08:09 15:54	08:57 15:29
20	08:43 16:13	07:37 17:25	06:21 18:29	05:56 20:37	04:46 21:42	04:15 22:21	04:46 21:59	05:49 20:50	06:55 19:24	08:00 18:02	08:11 15:52	08:58 15:29
21	08:41 16:15	07:34 17:27	06:18 18:31	05:53 20:39	04:44 21:44	04:15 22:21	04:47 21:57	05:51 20:47	06:57 19:21	08:02 17:59	08:13 15:51	08:59 15:30
22	08:40 16:17	07:32 17:29	06:16 18:33	05:50 20:41	04:42 21:45	04:15 22:22	04:49 21:55	05:53 20:44	06:59 19:19	08:05 17:57	08:15 15:49	08:59 15:30
23	08:38 16:19	07:29 17:32	06:13 18:35	05:48 20:44	04:40 21:47	04:15 22:22	04:51 21:53	05:55 20:42	07:01 19:16	08:07 17:54	08:17 15:48	09:00 15:31
24	08:36 16:21	07:27 17:34	06:10 18:37	05:45 20:46	04:38 21:49	04:15 22:22	04:53 21:52	05:58 20:39	07:03 19:13	08:09 17:51	08:19 15:46	09:00 15:31
25	08:34 16:24	07:24 17:36	06:07 18:40	05:43 20:48	04:37 21:51	04:16 22:22	04:55 21:50	06:00 20:36	07:06 19:10	07:11 16:49	08:21 15:45	09:00 15:32
26	08:33 16:26	07:21 17:39	06:04 18:42	05:40 20:50	04:35 21:53	04:16 22:22	04:57 21:48	06:02 20:34	07:08 19:07	07:14 16:46	08:23 15:43	09:01 15:33
27	08:31 16:28	07:19 17:41	06:02 18:44	05:37 20:53	04:34 21:55	04:17 22:22	04:59 21:46	06:04 20:31	07:10 19:04	07:16 16:44	08:25 15:42	09:01 15:34
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Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
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Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Rigas iela 47 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (557)
Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Rigas iela 48 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (622)
Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
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15	08:50 16:02	07:49 17:13	06:35 18:17	06:09 20:26	04:56 21:32	04:15 22:19	04:37 22:06	05:38 21:02	06:44 19:38	07:49 18:15	08:00 16:02	08:54 15:29
16	08:48 16:04	07:47 17:15	06:32 18:20	06:06 20:28	04:53 21:34	04:15 22:19	04:39 22:05	05:40 21:00	06:46 19:35	07:51 18:12	08:02 16:00	08:55 15:29
17	08:47 16:06	07:44 17:18	06:30 18:22	06:04 20:30	04:51 21:36	04:15 22:20	04:40 22:03	05:43 20:57	06:49 19:33	07:53 18:10	08:04 15:58	08:56 15:29
18	08:46 16:08	07:42 17:20	06:27 18:24	06:01 20:33	04:49 21:38	04:15 22:20	04:42 22:02	05:45 20:55	06:51 19:30	07:56 18:07	08:06 15:56	08:56 15:29
19	08:44 16:10	07:39 17:22	06:24 18:26	05:58 20:35	04:48 21:40	04:15 22:21	04:44 22:00	05:47 20:52	06:53 19:27	07:58 18:04	08:09 15:54	08:57 15:29
20	08:43 16:13	07:37 17:25	06:21 18:29	05:56 20:37	04:46 21:42	04:15 22:21	04:46 21:59	05:49 20:50	06:55 19:24	08:00 18:02	08:11 15:52	08:58 15:29
21	08:41 16:15	07:34 17:27	06:18 18:31	05:53 20:39	04:44 21:44	04:15 22:21	04:47 21:57	05:51 20:47	06:57 19:21	08:02 17:59	08:13 15:51	08:59 15:30
22	08:40 16:17	07:32 17:29	06:16 18:33	05:50 20:41	04:42 21:45	04:15 22:22	04:49 21:55	05:53 20:44	06:59 19:19	08:05 17:57	08:15 15:49	08:59 15:30
23	08:38 16:19	07:29 17:32	06:13 18:35	05:48 20:44	04:40 21:47	04:15 22:22	04:51 21:53	05:55 20:42	07:01 19:16	08:07 17:54	08:17 15:48	09:00 15:31
24	08:36 16:21	07:27 17:34	06:10 18:37	05:45 20:46	04:38 21:49	04:15 22:22	04:53 21:52	05:58 20:39	07:03 19:13	08:09 17:51	08:19 15:46	09:00 15:31
25	08:34 16:24	07:24 17:36	06:07 18:40	05:43 20:48	04:37 21:51	04:16 22:22	04:55 21:50	06:00 20:36	07:06 19:10	07:11 16:49	08:21 15:45	09:00 15:32
26	08:33 16:26	07:21 17:39	06:04 18:42	05:40 20:50	04:35 21:53	04:16 22:22	04:57 21:48	06:02 20:34	07:08 19:07	07:14 16:46	08:23 15:43	09:01 15:33
27	08:31 16:28	07:19 17:41	06:02 18:44	05:37 20:53	04:34 21:55	04:17 22:22	04:59 21:46	06:04 20:31	07:10 19:04	07:16 16:44	08:25 15:42	09:01 15:34
28	08:29 16:30	07:16 17:43	05:59 18:46	05:35 20:55	04:32 21:56	04:17 22:21	05:01 21:44	06:06 20:28	07:12 19:02	07:18 16:41	08:27 15:41	09:01 15:34
29	08:27 16:33		06:56 19:48	05:32 20:57	04:31 21:58	04:18 22:21	05:03 21:42	06:08 20:26	07:14 18:59	07:21 16:39	08:29 15:39	09:01 15:35
30	08:25 16:35		06:53 19:51	05:30 20:59	04:29 22:00	04:19 22:21	05:05 21:40	06:10 20:23	07:16 18:56	07:23 16:37	08:31 15:38	09:01 15:36
31	08:23 16:37		06:50 19:53		04:28 22:01		05:07 21:38	06:13 20:20		07:25 16:34		09:01 15:38
Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
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Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Rigas iela 49 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (522)
Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:28 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
2	09:00 15:40	08:19 16:42	07:11 17:48	06:45 19:57	05:25 21:04	04:25 22:04	04:21 22:20	05:11 21:33	06:17 20:15	07:21 18:51	07:30 16:29	08:35 15:36
3	09:00 15:42	08:17 16:44	07:08 17:50	06:42 19:59	05:23 21:06	04:24 22:06	04:21 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:37 15:35
4	08:59 15:43	08:15 16:47	07:05 17:53	06:39 20:02	05:20 21:08	04:23 22:07	04:22 22:18	05:15 21:29	06:21 20:09	07:25 18:45	07:34 16:25	08:38 15:34
5	08:59 15:45	08:13 16:49	07:03 17:55	06:37 20:04	05:18 21:10	04:22 22:08	04:24 22:18	05:17 21:26	06:23 20:06	07:27 18:42	07:37 16:23	08:40 15:33
6	08:58 15:46	08:10 16:52	07:00 17:57	06:34 20:06	05:16 21:12	04:21 22:10	04:25 22:17	05:19 21:24	06:25 20:04	07:29 18:39	07:39 16:20	08:42 15:32
7	08:58 15:48	08:08 16:54	06:57 17:59	06:31 20:08	05:13 21:15	04:20 22:11	04:26 22:16	05:21 21:22	06:27 20:01	07:31 18:37	07:41 16:18	08:43 15:32
8	08:57 15:49	08:06 16:56	06:55 18:02	06:28 20:10	05:11 21:17	04:19 22:12	04:27 22:15	05:23 21:19	06:30 19:58	07:34 18:34	07:44 16:16	08:45 15:31
9	08:56 15:51	08:04 16:59	06:52 18:04	06:25 20:13	05:09 21:19	04:18 22:13	04:28 22:14	05:26 21:17	06:32 19:55	07:36 18:31	07:46 16:14	08:46 15:31
10	08:55 15:53	08:01 17:01	06:49 18:06	06:23 20:15	05:06 21:21	04:18 22:14	04:30 22:13	05:28 21:15	06:34 19:52	07:38 18:28	07:48 16:12	08:48 15:30
11	08:54 15:55	07:59 17:04	06:46 18:09	06:20 20:17	05:04 21:23	04:17 22:15	04:31 22:12	05:30 21:12	06:36 19:50	07:40 18:26	07:51 16:10	08:49 15:30
12	08:53 15:57	07:57 17:06	06:44 18:11	06:17 20:19	05:02 21:25	04:17 22:16	04:33 22:10	05:32 21:19	06:38 19:47	07:42 18:23	07:53 16:08	08:50 15:29
13	08:52 15:58	07:54 17:08	06:41 18:13	06:14 20:22	05:00 21:27	04:16 22:17	04:34 22:09	05:34 21:07	06:40 19:44	07:45 18:20	07:55 16:05	08:51 15:29
14	08:51 16:00	07:52 17:11	06:38 18:15	06:12 20:24	04:58 21:29	04:16 22:18	04:36 22:08	05:36 21:05	06:42 19:41	07:47 18:18	07:57 16:04	08:53 15:29
15	08:50 16:02	07:49 17:13	06:35 18:17	06:09 20:26	04:56 21:32	04:15 22:19	04:37 22:06	05:38 21:02	06:44 19:38	07:49 18:15	08:00 16:02	08:54 15:29
16	08:48 16:04	07:47 17:15	06:32 18:20	06:06 20:28	04:54 21:34	04:15 22:19	04:39 22:05	05:41 21:00	06:46 19:35	07:51 18:12	08:02 16:00	08:55 15:29
17	08:47 16:06	07:44 17:18	06:30 18:22	06:04 20:30	04:52 21:36	04:15 22:20	04:40 22:03	05:43 20:57	06:49 19:33	07:53 18:10	08:04 15:58	08:56 15:29
18	08:46 16:08	07:42 17:20	06:27 18:24	06:01 20:33	04:50 21:38	04:15 22:20	04:42 22:02	05:45 20:55	06:51 19:30	07:56 18:07	08:06 15:56	08:56 15:29
19	08:44 16:10	07:39 17:22	06:24 18:26	05:58 20:35	04:48 21:40	04:15 22:21	04:44 22:00	05:47 20:52	06:53 19:27	07:58 18:04	08:09 15:54	08:57 15:29
20	08:43 16:13	07:37 17:25	06:21 18:29	05:56 20:37	04:46 21:42	04:15 22:21	04:46 21:59	05:49 20:50	06:55 19:24	08:00 18:02	08:11 15:53	08:58 15:29
21	08:41 16:15	07:34 17:27	06:18 18:31	05:53 20:39	04:44 21:44	04:15 22:21	04:47 21:57	05:51 20:47	06:57 19:21	08:02 17:59	08:13 15:51	08:59 15:30
22	08:40 16:17	07:32 17:29	06:16 18:33	05:50 20:41	04:42 21:45	04:15 22:22	04:49 21:55	05:53 20:44	06:59 19:19	08:05 17:57	08:15 15:49	08:59 15:30
23	08:38 16:19	07:29 17:32	06:13 18:35	05:48 20:44	04:40 21:47	04:15 22:22	04:51 21:53	05:56 20:42	07:01 19:16	08:07 17:54	08:17 15:48	09:00 15:31
24	08:36 16:21	07:27 17:34	06:10 18:37	05:45 20:46	04:39 21:49	04:15 22:22	04:53 21:52	05:58 20:39	07:03 19:13	08:09 17:51	08:19 15:46	09:00 15:31
25	08:34 16:24	07:24 17:36	06:07 18:40	05:43 20:48	04:37 21:51	04:16 22:22	04:55 21:50	06:00 20:36	07:06 19:10	07:11 16:49	08:21 15:45	09:00 15:32
26	08:33 16:26	07:21 17:39	06:04 18:42	05:40 20:50	04:35 21:53	04:16 22:22	04:57 21:48	06:02 20:34	07:08 19:07	07:14 16:46	08:23 15:43	09:01 15:33
27	08:31 16:28	07:19 17:41	06:02 18:44	05:38 20:53	04:34 21:55	04:17 22:22	04:59 21:46	06:04 20:31	07:10 19:05	07:16 16:44	08:25 15:42	09:01 15:34
28	08:29 16:30	07:16 17:43	05:59 18:46	05:35 20:55	04:32 21:56	04:17 22:21	05:01 21:44	06:06 20:28	07:12 19:02	07:18 16:41	08:27 15:41	09:01 15:34
29	08:27 16:33		05:56 19:48	05:32 20:57	04:31 21:58	04:18 22:21	05:03 21:42	06:08 20:26	07:14 18:59	07:21 16:39	08:29 15:39	09:01 15:35
30	08:25 16:35		05:53 19:51	05:30 20:59	04:29 22:00	04:19 22:21	05:05 21:40	06:10 20:23	07:16 18:56	07:23 16:37	08:31 15:38	09:01 15:37
31	08:23 16:37		05:50 19:53		04:28 22:01		05:07 21:38	06:13 20:20		07:25 16:34		09:01 15:38
Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Rigas iela 50 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (616)
 Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:27 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
2	09:00 15:40	08:19 16:42	07:11 17:48	06:45 19:57	05:25 21:04	04:25 22:04	04:20 22:20	05:11 21:33	06:17 20:15	07:21 18:51	07:30 16:29	08:35 15:36
3	09:00 15:42	08:17 16:44	07:08 17:50	06:42 19:59	05:23 21:06	04:24 22:06	04:21 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:37 15:35
4	08:59 15:43	08:15 16:47	07:05 17:53	06:39 20:02	05:20 21:08	04:23 22:07	04:22 22:18	05:15 21:29	06:21 20:09	07:25 18:45	07:34 16:25	08:38 15:34
5	08:59 15:45	08:13 16:49	07:03 17:55	06:36 20:04	05:18 21:10	04:22 22:08	04:23 22:18	05:17 21:26	06:23 20:06	07:27 18:42	07:37 16:23	08:40 15:33
6	08:58 15:46	08:10 16:52	07:00 17:57	06:34 20:06	05:15 21:12	04:21 22:10	04:25 22:17	05:19 21:24	06:25 20:04	07:29 18:39	07:39 16:20	08:42 15:32
7	08:58 15:48	08:08 16:54	06:57 17:59	06:31 20:08	05:13 21:15	04:20 22:11	04:26 22:16	05:21 21:22	06:27 20:01	07:31 18:37	07:41 16:18	08:43 15:32
8	08:57 15:49	08:06 16:56	06:55 18:02	06:28 20:10	05:11 21:17	04:19 22:12	04:27 22:15	05:23 21:19	06:30 19:58	07:34 18:34	07:44 16:16	08:45 15:31
9	08:56 15:51	08:04 16:59	06:52 18:04	06:25 20:13	05:09 21:19	04:18 22:13	04:28 22:14	05:26 21:17	06:32 19:55	07:36 18:31	07:46 16:14	08:46 15:30
10	08:55 15:53	08:01 17:01	06:49 18:06	06:23 20:15	05:06 21:21	04:18 22:14	04:30 22:13	05:28 21:15	06:34 19:52	07:38 18:28	07:48 16:12	08:48 15:30
11	08:54 15:55	07:59 17:03	06:46 18:08	06:20 20:17	05:04 21:23	04:17 22:15	04:31 22:12	05:30 21:12	06:36 19:50	07:40 18:26	07:51 16:10	08:49 15:30
12	08:53 15:56	07:57 17:06	06:43 18:11	06:17 20:19	05:02 21:25	04:16 22:16	04:33 22:10	05:32 21:10	06:38 19:47	07:42 18:23	07:53 16:07	08:50 15:29
13	08:52 15:58	07:54 17:08	06:41 18:13	06:14 20:22	05:00 21:27	04:16 22:17	04:34 22:09	05:34 21:07	06:40 19:44	07:44 18:20	07:55 16:05	08:51 15:29
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19	08:44 16:10	07:39 17:22	06:24 18:26	05:58 20:35	04:48 21:40	04:15 22:21	04:44 22:00	05:47 20:52	06:53 19:27	07:58 18:04	08:09 15:54	08:57 15:29
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22	08:40 16:17	07:32 17:29	06:16 18:33	05:50 20:41	04:42 21:45	04:15 22:22	04:49 21:55	05:53 20:44	06:59 19:19	08:05 17:57	08:15 15:49	08:59 15:30
23	08:38 16:19	07:29 17:32	06:13 18:35	05:48 20:44	04:40 21:47	04:15 22:22	04:51 21:53	05:55 20:42	07:01 19:16	08:07 17:54	08:17 15:48	09:00 15:31
24	08:36 16:21	07:27 17:34	06:10 18:37	05:45 20:46	04:38 21:49	04:15 22:22	04:53 21:52	05:58 20:39	07:03 19:13	08:09 17:51	08:19 15:46	09:00 15:31
25	08:34 16:24	07:24 17:36	06:07 18:40	05:43 20:48	04:37 21:51	04:16 22:22	04:55 21:50	06:00 20:36	07:06 19:10	07:11 16:49	08:21 15:45	09:00 15:32
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Total, worst case												
Sun reduction												
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Total reduction												
Total, real												

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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Rigas iela 50A - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (614)
 Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:27 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
2	09:00 15:40	08:19 16:42	07:11 17:48	06:45 19:57	05:25 21:04	04:25 22:04	04:20 22:20	05:11 21:33	06:17 20:15	07:21 18:51	07:30 16:29	08:35 15:36
3	09:00 15:42	08:17 16:44	07:08 17:50	06:42 19:59	05:23 21:06	04:24 22:06	04:21 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:37 15:35
4	08:59 15:43	08:15 16:47	07:05 17:53	06:39 20:02	05:20 21:08	04:23 22:07	04:22 22:18	05:15 21:29	06:21 20:09	07:25 18:45	07:34 16:25	08:38 15:34
5	08:59 15:45	08:13 16:49	07:03 17:55	06:36 20:04	05:18 21:10	04:22 22:08	04:23 22:18	05:17 21:26	06:23 20:06	07:27 18:42	07:37 16:23	08:40 15:33
6	08:58 15:46	08:10 16:52	07:00 17:57	06:34 20:06	05:15 21:12	04:21 22:10	04:25 22:17	05:19 21:24	06:25 20:04	07:29 18:39	07:39 16:20	08:42 15:32
7	08:58 15:48	08:08 16:54	06:57 17:59	06:31 20:08	05:13 21:15	04:20 22:11	04:26 22:16	05:21 21:22	06:27 20:01	07:31 18:37	07:41 16:18	08:43 15:32
8	08:57 15:49	08:06 16:56	06:55 18:02	06:28 20:10	05:11 21:17	04:19 22:12	04:27 22:15	05:23 21:19	06:30 19:58	07:34 18:34	07:44 16:16	08:45 15:31
9	08:56 15:51	08:04 16:59	06:52 18:04	06:25 20:13	05:09 21:19	04:18 22:13	04:28 22:14	05:26 21:17	06:32 19:55	07:36 18:31	07:46 16:14	08:46 15:30
10	08:55 15:53	08:01 17:01	06:49 18:06	06:23 20:15	05:06 21:21	04:18 22:14	04:30 22:13	05:28 21:15	06:34 19:52	07:38 18:28	07:48 16:12	08:48 15:30
11	08:54 15:55	07:59 17:03	06:46 18:08	06:20 20:17	05:04 21:23	04:17 22:15	04:31 22:12	05:30 21:12	06:36 19:50	07:40 18:26	07:51 16:10	08:49 15:30
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14	08:51 16:00	07:52 17:11	06:38 18:15	06:12 20:24	04:58 21:29	04:16 22:18	04:36 22:08	05:36 21:05	06:42 19:41	07:47 18:18	07:57 16:03	08:53 15:29
15	08:50 16:02	07:49 17:13	06:35 18:17	06:09 20:26	04:56 21:32	04:15 22:19	04:37 22:06	05:38 21:02	06:44 19:38	07:49 18:15	08:00 16:02	08:54 15:29
16	08:48 16:04	07:47 17:15	06:32 18:20	06:06 20:28	04:53 21:34	04:15 22:19	04:39 22:05	05:40 21:00	06:46 19:35	07:51 18:12	08:02 16:00	08:55 15:29
17	08:47 16:06	07:44 17:18	06:30 18:22	06:04 20:30	04:51 21:36	04:15 22:20	04:40 22:03	05:43 20:57	06:49 19:33	07:53 18:10	08:04 15:58	08:56 15:29
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19	08:44 16:10	07:39 17:22	06:24 18:26	05:58 20:35	04:48 21:40	04:15 22:21	04:44 22:00	05:47 20:52	06:53 19:27	07:58 18:04	08:09 15:54	08:57 15:29
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22	08:40 16:17	07:32 17:29	06:16 18:33	05:50 20:41	04:42 21:45	04:15 22:22	04:49 21:55	05:53 20:44	06:59 19:19	08:05 17:57	08:15 15:49	08:59 15:30
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28	08:29 16:30	07:16 17:43	05:59 18:46	05:35 20:55	04:32 21:56	04:17 22:21	05:01 21:44	06:06 20:28	07:12 19:02	07:18 16:41	08:27 15:41	09:01 15:34
29	08:27 16:33		05:56 19:48	05:32 20:57	04:31 21:58	04:18 22:21	05:03 21:42	06:08 20:26	07:14 18:59	07:21 16:39	08:29 15:39	09:01 15:35
30	08:25 16:35		05:53 19:51	05:30 20:59	04:29 22:00	04:19 22:21	05:05 21:40	06:10 20:23	07:16 18:56	07:23 16:37	08:31 15:38	09:01 15:36
31	08:23 16:37		05:50 19:53		04:28 22:01		05:07 21:38	06:13 20:20		07:25 16:34		09:01 15:38
Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Rigas iela 51 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (556)
Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:28 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
2	09:00 15:40	08:19 16:42	07:11 17:48	06:45 19:57	05:25 21:04	04:25 22:04	04:21 22:20	05:11 21:33	06:17 20:15	07:21 18:51	07:30 16:29	08:35 15:36
3	09:00 15:42	08:17 16:44	07:08 17:50	06:42 19:59	05:23 21:06	04:24 22:06	04:21 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:37 15:35
4	08:59 15:43	08:15 16:47	07:05 17:53	06:39 20:02	05:20 21:08	04:23 22:07	04:22 22:18	05:15 21:29	06:21 20:09	07:25 18:45	07:34 16:25	08:38 15:34
5	08:59 15:45	08:13 16:49	07:03 17:55	06:37 20:04	05:18 21:10	04:22 22:08	04:24 22:18	05:17 21:26	06:23 20:06	07:27 18:42	07:37 16:23	08:40 15:33
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11	08:54 15:55	07:59 17:04	06:46 18:09	06:20 20:17	05:04 21:23	04:17 22:15	04:31 22:12	05:30 21:12	06:36 19:50	07:40 18:26	07:51 16:10	08:49 15:30
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16	08:48 16:04	07:47 17:15	06:32 18:20	06:06 20:28	04:54 21:34	04:15 22:19	04:39 22:05	05:41 21:00	06:46 19:35	07:51 18:12	08:02 16:00	08:55 15:29
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18	08:46 16:08	07:42 17:20	06:27 18:24	06:01 20:33	04:50 21:38	04:15 22:20	04:42 22:02	05:45 20:55	06:51 19:30	07:56 18:07	08:06 15:56	08:56 15:29
19	08:44 16:10	07:39 17:22	06:24 18:26	05:58 20:35	04:48 21:40	04:15 22:21	04:44 22:00	05:47 20:52	06:53 19:27	07:58 18:04	08:09 15:54	08:57 15:29
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23	08:38 16:19	07:29 17:32	06:13 18:35	05:48 20:44	04:40 21:47	04:15 22:22	04:51 21:53	05:56 20:42	07:01 19:16	08:07 17:54	08:17 15:48	09:00 15:31
24	08:36 16:21	07:27 17:34	06:10 18:37	05:45 20:46	04:39 21:49	04:15 22:22	04:53 21:52	05:58 20:39	07:03 19:13	08:09 17:51	08:19 15:46	09:00 15:31
25	08:34 16:24	07:24 17:36	06:07 18:40	05:43 20:48	04:37 21:51	04:16 22:22	04:55 21:50	06:00 20:36	07:06 19:10	07:11 16:49	08:21 15:45	09:00 15:32
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31	08:23 16:37		06:50 19:53		04:28 22:01		05:07 21:38	06:13 20:20		07:25 16:34		09:01 15:38
Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Rigas iela 52 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (687)
Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:28 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
2	09:00 15:40	08:19 16:42	07:11 17:48	06:45 19:57	05:25 21:04	04:25 22:04	04:20 22:20	05:11 21:33	06:17 20:15	07:21 18:51	07:30 16:29	08:35 15:36
3	09:00 15:42	08:17 16:44	07:08 17:50	06:42 19:59	05:23 21:06	04:24 22:06	04:21 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:37 15:35
4	08:59 15:43	08:15 16:47	07:05 17:53	06:39 20:02	05:20 21:08	04:23 22:07	04:22 22:18	05:15 21:29	06:21 20:09	07:25 18:45	07:34 16:25	08:38 15:34
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20	08:43 16:13	07:37 17:25	06:21 18:29	05:56 20:37	04:46 21:42	04:15 22:21	04:46 21:59	05:49 20:50	06:55 19:24	08:00 18:02	08:11 15:52	08:58 15:29
21	08:41 16:15	07:34 17:27	06:18 18:31	05:53 20:39	04:44 21:44	04:15 22:21	04:47 21:57	05:51 20:47	06:57 19:21	08:02 17:59	08:13 15:51	08:59 15:30
22	08:40 16:17	07:32 17:29	06:16 18:33	05:50 20:41	04:42 21:45	04:15 22:22	04:49 21:55	05:53 20:44	06:59 19:19	08:05 17:57	08:15 15:49	08:59 15:30
23	08:38 16:19	07:29 17:32	06:13 18:35	05:48 20:44	04:40 21:47	04:15 22:22	04:51 21:53	05:55 20:42	07:01 19:16	08:07 17:54	08:17 15:48	09:00 15:31
24	08:36 16:21	07:27 17:34	06:10 18:37	05:45 20:46	04:38 21:49	04:15 22:22	04:53 21:52	05:58 20:39	07:03 19:13	08:09 17:51	08:19 15:46	09:00 15:31
25	08:34 16:24	07:24 17:36	06:07 18:40	05:43 20:48	04:37 21:51	04:16 22:22	04:55 21:50	06:00 20:36	07:06 19:10	07:11 16:49	08:21 15:45	09:00 15:32
26	08:33 16:26	07:21 17:39	06:04 18:42	05:40 20:50	04:35 21:53	04:16 22:22	04:57 21:48	06:02 20:34	07:08 19:07	07:14 16:46	08:23 15:43	09:01 15:33
27	08:31 16:28	07:19 17:41	06:02 18:44	05:38 20:53	04:34 21:55	04:17 22:22	04:59 21:46	06:04 20:31	07:10 19:04	07:16 16:44	08:25 15:42	09:01 15:34
28	08:29 16:30	07:16 17:43	05:59 18:46	05:35 20:55	04:32 21:56	04:17 22:21	05:01 21:44	06:06 20:28	07:12 19:02	07:18 16:41	08:27 15:41	09:01 15:34
29	08:27 16:33		05:56 19:48	05:32 20:57	04:31 21:58	04:18 22:21	05:03 21:42	06:08 20:26	07:14 18:59	07:21 16:39	08:29 15:39	09:01 15:35
30	08:25 16:35		05:53 19:51	05:30 20:59	04:29 22:00	04:19 22:21	05:05 21:40	06:10 20:23	07:16 18:56	07:23 16:37	08:31 15:38	09:01 15:37
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Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
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Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Rigas iela 53 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (568)
Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

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2	09:00 15:41	08:19 16:42	07:11 17:48	06:45 19:57	05:25 21:04	04:25 22:04	04:21 22:20	05:11 21:33	06:17 20:15	07:21 18:51	07:30 16:29	08:35 15:36
3	09:00 15:42	08:17 16:44	07:08 17:50	06:42 19:59	05:23 21:06	04:24 22:06	04:21 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:37 15:35
4	08:59 15:43	08:15 16:47	07:05 17:53	06:39 20:02	05:20 21:08	04:23 22:07	04:22 22:18	05:15 21:29	06:21 20:09	07:25 18:45	07:34 16:25	08:38 15:34
5	08:59 15:45	08:13 16:49	07:03 17:55	06:37 20:04	05:18 21:10	04:22 22:08	04:24 22:18	05:17 21:26	06:23 20:06	07:27 18:42	07:37 16:23	08:40 15:33
6	08:58 15:46	08:10 16:52	07:00 17:57	06:34 20:06	05:16 21:12	04:21 22:10	04:25 22:17	05:19 21:24	06:25 20:04	07:29 18:39	07:39 16:20	08:42 15:32
7	08:58 15:48	08:08 16:54	06:57 17:59	06:31 20:08	05:13 21:15	04:20 22:11	04:26 22:16	05:21 21:22	06:27 20:01	07:31 18:37	07:41 16:18	08:43 15:32
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9	08:56 15:51	08:04 16:59	06:52 18:04	06:25 20:13	05:09 21:19	04:18 22:13	04:28 22:14	05:26 21:17	06:32 19:55	07:36 18:31	07:46 16:14	08:46 15:31
10	08:55 15:53	08:01 17:01	06:49 18:06	06:23 20:15	05:06 21:21	04:18 22:14	04:30 22:13	05:28 21:15	06:34 19:52	07:38 18:28	07:48 16:12	08:48 15:30
11	08:54 15:55	07:59 17:04	06:46 18:09	06:20 20:17	05:04 21:23	04:17 22:15	04:31 22:12	05:30 21:12	06:36 19:50	07:40 18:26	07:51 16:10	08:49 15:30
12	08:53 15:57	07:57 17:06	06:44 18:11	06:17 20:19	05:02 21:25	04:17 22:16	04:33 22:10	05:32 21:19	06:38 19:47	07:42 18:23	07:53 16:08	08:50 15:29
13	08:52 15:58	07:54 17:08	06:41 18:13	06:15 20:22	05:00 21:27	04:16 22:17	04:34 22:09	05:34 21:07	06:40 19:44	07:45 18:20	07:55 16:05	08:51 15:29
14	08:51 16:00	07:52 17:11	06:38 18:15	06:12 20:24	04:58 21:29	04:16 22:18	04:36 22:08	05:36 21:05	06:42 19:41	07:47 18:18	07:57 16:04	08:53 15:29
15	08:50 16:02	07:49 17:13	06:35 18:17	06:09 20:26	04:56 21:32	04:15 22:19	04:37 22:06	05:38 21:02	06:44 19:38	07:49 18:15	08:00 16:02	08:54 15:29
16	08:48 16:04	07:47 17:15	06:32 18:20	06:06 20:28	04:54 21:34	04:15 22:19	04:39 22:05	05:41 21:00	06:46 19:35	07:51 18:12	08:02 16:00	08:55 15:29
17	08:47 16:06	07:44 17:18	06:30 18:22	06:04 20:30	04:52 21:36	04:15 22:20	04:40 22:03	05:43 20:57	06:49 19:33	07:53 18:10	08:04 15:58	08:56 15:29
18	08:46 16:08	07:42 17:20	06:27 18:24	06:01 20:33	04:50 21:38	04:15 22:20	04:42 22:02	05:45 20:55	06:51 19:30	07:56 18:07	08:06 15:56	08:56 15:29
19	08:44 16:10	07:39 17:22	06:24 18:26	05:58 20:35	04:48 21:40	04:15 22:21	04:44 22:00	05:47 20:52	06:53 19:27	07:58 18:04	08:09 15:54	08:57 15:29
20	08:43 16:13	07:37 17:25	06:21 18:29	05:56 20:37	04:46 21:42	04:15 22:21	04:46 21:59	05:49 20:50	06:55 19:24	08:00 18:02	08:11 15:53	08:58 15:29
21	08:41 16:15	07:34 17:27	06:18 18:31	05:53 20:39	04:44 21:44	04:15 22:21	04:47 21:57	05:51 20:47	06:57 19:21	08:02 17:59	08:13 15:51	08:59 15:30
22	08:40 16:17	07:32 17:30	06:16 18:33	05:50 20:41	04:42 21:45	04:15 22:22	04:49 21:55	05:53 20:44	06:59 19:19	08:05 17:57	08:15 15:49	08:59 15:30
23	08:38 16:19	07:29 17:32	06:13 18:35	05:48 20:44	04:40 21:47	04:15 22:22	04:51 21:53	05:56 20:42	07:01 19:16	08:07 17:54	08:17 15:48	09:00 15:31
24	08:36 16:21	07:27 17:34	06:10 18:37	05:45 20:46	04:39 21:49	04:15 22:22	04:53 21:52	05:58 20:39	07:03 19:13	08:09 17:51	08:19 15:46	09:00 15:31
25	08:34 16:24	07:24 17:37	06:07 18:40	05:43 20:48	04:37 21:51	04:16 22:22	04:55 21:50	06:00 20:36	07:06 19:10	07:11 16:49	08:21 15:45	09:00 15:32
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28	08:29 16:30	07:16 17:43	05:59 18:46	05:35 20:55	04:32 21:56	04:17 22:21	05:01 21:44	06:06 20:28	07:12 19:02	07:18 16:41	08:27 15:41	09:01 15:35
29	08:27 16:33		05:56 19:48	05:32 20:57	04:31 21:58	04:18 22:21	05:03 21:42	06:08 20:26	07:14 18:59	07:21 16:39	08:29 15:39	09:01 15:35
30	08:25 16:35		05:53 19:51	05:30 20:59	04:29 22:00	04:19 22:21	05:05 21:40	06:10 20:23	07:16 18:56	07:23 16:37	08:31 15:38	09:01 15:37
31	08:23 16:37		05:50 19:53		04:28 22:01		05:07 21:38	06:13 20:20		07:25 16:34		09:01 15:38
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Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Rigas iela 54 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (756)
Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:28 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
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3	09:00 15:42	08:17 16:44	07:08 17:50	06:42 19:59	05:23 21:06	04:24 22:06	04:21 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:37 15:35
4	08:59 15:43	08:15 16:47	07:05 17:53	06:39 20:02	05:20 21:08	04:23 22:07	04:22 22:18	05:15 21:29	06:21 20:09	07:25 18:45	07:34 16:25	08:38 15:34
5	08:59 15:45	08:13 16:49	07:03 17:55	06:36 20:04	05:18 21:10	04:22 22:08	04:24 22:18	05:17 21:26	06:23 20:06	07:27 18:42	07:37 16:23	08:40 15:33
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7	08:58 15:48	08:08 16:54	06:57 17:59	06:31 20:08	05:13 21:15	04:20 22:11	04:26 22:16	05:21 21:22	06:27 20:01	07:31 18:37	07:41 16:18	08:43 15:32
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10	08:55 15:53	08:01 17:01	06:49 18:06	06:23 20:15	05:06 21:21	04:18 22:14	04:30 22:13	05:28 21:15	06:34 19:52	07:38 18:28	07:48 16:12	08:48 15:30
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19	08:44 16:10	07:39 17:22	06:24 18:26	05:58 20:35	04:48 21:40	04:15 22:21	04:44 22:00	05:47 20:52	06:53 19:27	07:58 18:04	08:09 15:54	08:57 15:29
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22	08:40 16:17	07:32 17:29	06:16 18:33	05:50 20:41	04:42 21:45	04:15 22:22	04:49 21:55	05:53 20:44	06:59 19:19	08:05 17:57	08:15 15:49	08:59 15:30
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Total, worst case												
Sun reduction												
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Rigas iela 55 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (513)
Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

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4	08:59 15:43	08:15 16:47	07:05 17:53	06:39 20:02	05:20 21:08	04:23 22:07	04:22 22:18	05:15 21:29	06:21 20:09	07:25 18:45	07:34 16:25	08:38 15:34
5	08:59 15:45	08:13 16:49	07:03 17:55	06:37 20:04	05:18 21:10	04:22 22:08	04:24 22:18	05:17 21:26	06:23 20:06	07:27 18:42	07:37 16:23	08:40 15:33
6	08:58 15:46	08:10 16:52	07:00 17:57	06:34 20:06	05:16 21:12	04:21 22:10	04:25 22:17	05:19 21:24	06:25 20:04	07:29 18:39	07:39 16:20	08:42 15:32
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9	08:56 15:51	08:04 16:59	06:52 18:04	06:25 20:13	05:09 21:19	04:18 22:13	04:28 22:14	05:26 21:17	06:32 19:55	07:36 18:31	07:46 16:14	08:46 15:31
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31	08:23 16:37		05:50 19:53		04:28 22:01		05:07 21:38	06:13 20:20		07:25 16:34		09:01 15:38
Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Rigas iela 56 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (731)
Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:28 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
2	09:00 15:40	08:19 16:42	07:11 17:48	06:45 19:57	05:25 21:04	04:25 22:04	04:20 22:20	05:11 21:33	06:17 20:15	07:21 18:51	07:30 16:29	08:35 15:36
3	09:00 15:42	08:17 16:44	07:08 17:50	06:42 19:59	05:23 21:06	04:24 22:06	04:21 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:37 15:35
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31	08:23 16:37		05:50 19:53		04:28 22:01		05:07 21:38	06:13 20:20		07:25 16:34		09:01 15:38
Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Rīgas iela 57 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (534)
Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:28 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
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24	08:36 16:21	07:27 17:34	06:10 18:37	05:45 20:46	04:39 21:49	04:15 22:22	04:53 21:52	05:58 20:39	07:03 19:13	08:09 17:51	08:19 15:46	09:00 15:31
25	08:34 16:24	07:24 17:37	06:07 18:40	05:43 20:48	04:37 21:51	04:16 22:22	04:55 21:50	06:00 20:36	07:06 19:10	07:11 16:49	08:21 15:45	09:00 15:32
26	08:33 16:26	07:21 17:39	06:04 18:42	05:40 20:50	04:35 21:53	04:16 22:22	04:57 21:48	06:02 20:34	07:08 19:07	07:14 16:46	08:23 15:43	09:01 15:33
27	08:31 16:28	07:19 17:41	06:02 18:44	05:38 20:53	04:34 21:55	04:17 22:22	04:59 21:46	06:04 20:31	07:10 19:05	07:16 16:44	08:25 15:42	09:01 15:34
28	08:29 16:30	07:16 17:43	05:59 18:46	05:35 20:55	04:32 21:56	04:17 22:21	05:01 21:44	06:06 20:28	07:12 19:02	07:18 16:41	08:27 15:41	09:01 15:35
29	08:27 16:33		05:56 19:48	05:33 20:57	04:31 21:58	04:18 22:21	05:03 21:42	06:08 20:26	07:14 18:59	07:21 16:39	08:29 15:39	09:01 15:35
30	08:25 16:35		05:53 19:51	05:30 20:59	04:29 22:00	04:19 22:21	05:05 21:40	06:10 20:23	07:16 18:56	07:23 16:37	08:31 15:38	09:01 15:37
31	08:23 16:37		05:50 19:53		04:28 22:01		05:07 21:38	06:13 20:20		07:25 16:34		09:01 15:38
Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
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Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Rigas iela 58 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (751)
Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:28 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
2	09:00 15:40	08:19 16:42	07:11 17:48	06:45 19:57	05:25 21:04	04:25 22:04	04:20 22:20	05:11 21:33	06:17 20:15	07:21 18:51	07:30 16:29	08:35 15:36
3	09:00 15:42	08:17 16:44	07:08 17:50	06:42 19:59	05:23 21:06	04:24 22:06	04:21 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:37 15:35
4	08:59 15:43	08:15 16:47	07:05 17:53	06:39 20:02	05:20 21:08	04:23 22:07	04:22 22:18	05:15 21:29	06:21 20:09	07:25 18:45	07:34 16:25	08:38 15:34
5	08:59 15:45	08:13 16:49	07:03 17:55	06:36 20:04	05:18 21:10	04:22 22:08	04:24 22:18	05:17 21:26	06:23 20:06	07:27 18:42	07:37 16:23	08:40 15:33
6	08:58 15:46	08:10 16:52	07:00 17:57	06:34 20:06	05:15 21:12	04:21 22:10	04:25 22:17	05:19 21:24	06:25 20:04	07:29 18:39	07:39 16:20	08:42 15:32
7	08:58 15:48	08:08 16:54	06:57 17:59	06:31 20:08	05:13 21:15	04:20 22:11	04:26 22:16	05:21 21:22	06:27 20:01	07:31 18:37	07:41 16:18	08:43 15:32
8	08:57 15:49	08:06 16:56	06:55 18:02	06:28 20:10	05:11 21:17	04:19 22:12	04:27 22:15	05:23 21:19	06:30 19:58	07:34 18:34	07:44 16:16	08:45 15:31
9	08:56 15:51	08:04 16:59	06:52 18:04	06:25 20:13	05:09 21:19	04:18 22:13	04:28 22:14	05:26 21:17	06:32 19:55	07:36 18:31	07:46 16:14	08:46 15:30
10	08:55 15:53	08:01 17:01	06:49 18:06	06:23 20:15	05:06 21:21	04:18 22:14	04:30 22:13	05:28 21:15	06:34 19:52	07:38 18:28	07:48 16:12	08:48 15:30
11	08:54 15:55	07:59 17:03	06:46 18:08	06:20 20:17	05:04 21:23	04:17 22:15	04:31 22:12	05:30 21:12	06:36 19:50	07:40 18:26	07:51 16:10	08:49 15:30
12	08:53 15:57	07:57 17:06	06:44 18:11	06:17 20:19	05:02 21:25	04:17 22:16	04:33 22:10	05:32 21:10	06:38 19:47	07:42 18:23	07:53 16:07	08:50 15:29
13	08:52 15:58	07:54 17:08	06:41 18:13	06:14 20:22	05:00 21:27	04:16 22:17	04:34 22:09	05:34 21:07	06:40 19:44	07:44 18:20	07:55 16:05	08:51 15:29
14	08:51 16:00	07:52 17:11	06:38 18:15	06:12 20:24	04:58 21:29	04:16 22:18	04:36 22:08	05:36 21:05	06:42 19:41	07:47 18:18	07:57 16:03	08:53 15:29
15	08:50 16:02	07:49 17:13	06:35 18:17	06:09 20:26	04:56 21:32	04:15 22:19	04:37 22:06	05:38 21:02	06:44 19:38	07:49 18:15	08:00 16:02	08:54 15:29
16	08:48 16:04	07:47 17:15	06:32 18:20	06:06 20:28	04:53 21:34	04:15 22:19	04:39 22:05	05:41 21:00	06:46 19:35	07:51 18:12	08:02 16:00	08:55 15:29
17	08:47 16:06	07:44 17:18	06:30 18:22	06:04 20:30	04:51 21:36	04:15 22:20	04:40 22:03	05:43 20:57	06:49 19:33	07:53 18:10	08:04 15:58	08:56 15:29
18	08:46 16:08	07:42 17:20	06:27 18:24	06:01 20:33	04:50 21:38	04:15 22:20	04:42 22:02	05:45 20:55	06:51 19:30	07:56 18:07	08:06 15:56	08:56 15:29
19	08:44 16:10	07:39 17:22	06:24 18:26	05:58 20:35	04:48 21:40	04:15 22:21	04:44 22:00	05:47 20:52	06:53 19:27	07:58 18:04	08:09 15:54	08:57 15:29
20	08:43 16:13	07:37 17:25	06:21 18:29	05:56 20:37	04:46 21:42	04:15 22:21	04:46 21:59	05:49 20:50	06:55 19:24	08:00 18:02	08:11 15:52	08:58 15:29
21	08:41 16:15	07:34 17:27	06:18 18:31	05:53 20:39	04:44 21:44	04:15 22:21	04:47 21:57	05:51 20:47	06:57 19:21	08:02 17:59	08:13 15:51	08:59 15:30
22	08:40 16:17	07:32 17:29	06:16 18:33	05:50 20:41	04:42 21:45	04:15 22:22	04:49 21:55	05:53 20:44	06:59 19:19	08:05 17:57	08:15 15:49	08:59 15:30
23	08:38 16:19	07:29 17:32	06:13 18:35	05:48 20:44	04:40 21:47	04:15 22:22	04:51 21:53	05:56 20:42	07:01 19:16	08:07 17:54	08:17 15:48	09:00 15:31
24	08:36 16:21	07:27 17:34	06:10 18:37	05:45 20:46	04:39 21:49	04:15 22:22	04:53 21:52	05:58 20:39	07:03 19:13	08:09 17:51	08:19 15:46	09:00 15:31
25	08:34 16:24	07:24 17:36	06:07 18:40	05:43 20:48	04:37 21:51	04:16 22:22	04:55 21:50	06:00 20:36	07:06 19:10	07:11 16:49	08:21 15:45	09:00 15:32
26	08:33 16:26	07:21 17:39	06:04 18:42	05:40 20:50	04:35 21:53	04:16 22:22	04:57 21:48	06:02 20:34	07:08 19:07	07:14 16:46	08:23 15:43	09:01 15:33
27	08:31 16:28	07:19 17:41	06:02 18:44	05:38 20:53	04:34 21:55	04:17 22:22	04:59 21:46	06:04 20:31	07:10 19:05	07:16 16:44	08:25 15:42	09:01 15:34
28	08:29 16:30	07:16 17:43	05:59 18:46	05:35 20:55	04:32 21:56	04:17 22:21	05:01 21:44	06:06 20:28	07:12 19:02	07:18 16:41	08:27 15:41	09:01 15:34
29	08:27 16:33		05:56 19:48	05:32 20:57	04:31 21:58	04:18 22:21	05:03 21:42	06:08 20:26	07:14 18:59	07:21 16:39	08:29 15:39	09:01 15:35
30	08:25 16:35		05:53 19:51	05:30 20:59	04:29 22:00	04:19 22:21	05:05 21:40	06:10 20:23	07:16 18:56	07:23 16:37	08:31 15:38	09:01 15:37
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Total, worst case												
Sun reduction												
Oper. time red.												
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Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Rigas iela 59 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (569)
Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:28 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
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3	09:00 15:42	08:17 16:45	07:08 17:50	06:42 19:59	05:23 21:06	04:24 22:06	04:21 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:37 15:35
4	08:59 15:43	08:15 16:47	07:05 17:53	06:39 20:02	05:20 21:08	04:23 22:07	04:22 22:18	05:15 21:29	06:21 20:09	07:25 18:45	07:34 16:25	08:38 15:34
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7	08:58 15:48	08:08 16:54	06:57 17:59	06:31 20:08	05:13 21:15	04:20 22:11	04:26 22:16	05:21 21:22	06:27 20:01	07:31 18:37	07:41 16:18	08:43 15:32
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9	08:56 15:51	08:04 16:59	06:52 18:04	06:25 20:13	05:09 21:19	04:18 22:13	04:28 22:14	05:26 21:17	06:32 19:55	07:36 18:31	07:46 16:14	08:46 15:31
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11	08:54 15:55	07:59 17:04	06:46 18:09	06:20 20:17	05:04 21:23	04:17 22:15	04:31 22:12	05:30 21:12	06:36 19:50	07:40 18:26	07:51 16:10	08:49 15:30
12	08:53 15:57	07:57 17:06	06:44 18:11	06:17 20:19	05:02 21:25	04:17 22:16	04:33 22:10	05:32 21:19	06:38 19:47	07:42 18:23	07:53 16:08	08:50 15:29
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22	08:40 16:17	07:32 17:30	06:16 18:33	05:50 20:41	04:42 21:45	04:15 22:22	04:49 21:55	05:53 20:44	06:59 19:19	08:05 17:57	08:15 15:49	08:59 15:30
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Total, worst case												
Sun reduction												
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Total reduction												
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Table layout: For each day in each month the following matrix apply

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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Rigas iela 60 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (748)
Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

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8	08:57 15:49	08:06 16:56	06:55 18:02	06:28 20:10	05:11 21:17	04:19 22:12	04:27 22:15	05:23 21:19	06:30 19:58	07:34 18:34	07:44 16:16	08:45 15:31
9	08:56 15:51	08:04 16:59	06:52 18:04	06:25 20:13	05:09 21:19	04:18 22:13	04:28 22:14	05:26 21:17	06:32 19:55	07:36 18:31	07:46 16:14	08:46 15:31
10	08:55 15:53	08:01 17:01	06:49 18:06	06:23 20:15	05:06 21:21	04:18 22:14	04:30 22:13	05:28 21:15	06:34 19:52	07:38 18:28	07:48 16:12	08:48 15:30
11	08:54 15:55	07:59 17:03	06:46 18:08	06:20 20:17	05:04 21:23	04:17 22:15	04:31 22:12	05:30 21:12	06:36 19:50	07:40 18:26	07:51 16:10	08:49 15:30
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31	08:23 16:37		06:50 19:53		04:28 22:01		05:07 21:38	06:13 20:20		07:25 16:34		09:01 15:38
Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Rigas iela 61 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (570)
 Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:28 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
2	09:00 15:41	08:19 16:42	07:11 17:48	06:45 19:57	05:25 21:04	04:25 22:04	04:21 22:20	05:11 21:33	06:17 20:15	07:21 18:51	07:30 16:29	08:35 15:36
3	09:00 15:42	08:17 16:45	07:08 17:50	06:42 19:59	05:23 21:06	04:24 22:06	04:21 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:37 15:35
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5	08:59 15:45	08:13 16:49	07:03 17:55	06:37 20:04	05:18 21:10	04:22 22:08	04:24 22:18	05:17 21:26	06:23 20:06	07:27 18:42	07:37 16:23	08:40 15:33
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19	08:44 16:11	07:39 17:22	06:24 18:26	05:58 20:35	04:48 21:40	04:15 22:21	04:44 22:00	05:47 20:52	06:53 19:27	07:58 18:04	08:09 15:54	08:57 15:29
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22	08:40 16:17	07:32 17:30	06:16 18:33	05:50 20:41	04:42 21:45	04:15 22:22	04:49 21:55	05:53 20:44	06:59 19:19	08:05 17:57	08:15 15:49	08:59 15:30
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31	08:23 16:37		05:50 19:53		04:28 22:01		05:07 21:38	06:13 20:20		07:25 16:34		09:01 15:38
Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Rīgas iela 62 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (749)
Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:28 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
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28	08:29 16:30	07:16 17:43	05:59 18:46	05:35 20:55	04:32 21:56	04:17 22:21	05:01 21:44	06:06 20:28	07:12 19:02	07:18 16:41	08:27 15:41	09:01 15:34
29	08:27 16:33		05:56 19:48	05:32 20:57	04:31 21:58	04:18 22:21	05:03 21:42	06:08 20:26	07:14 18:59	07:21 16:39	08:29 15:39	09:01 15:35
30	08:25 16:35		05:53 19:51	05:30 20:59	04:29 22:00	04:19 22:21	05:05 21:40	06:10 20:23	07:16 18:56	07:23 16:37	08:31 15:38	09:01 15:37
31	08:23 16:37		05:50 19:53		04:28 22:01		05:07 21:38	06:13 20:20		07:25 16:34		09:01 15:38
Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Rigas iela 62A - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (695)
 Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:28 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
2	09:00 15:40	08:19 16:42	07:11 17:48	06:45 19:57	05:25 21:04	04:25 22:04	04:20 22:20	05:11 21:33	06:17 20:15	07:21 18:51	07:30 16:29	08:35 15:36
3	09:00 15:42	08:17 16:44	07:08 17:50	06:42 19:59	05:23 21:06	04:24 22:06	04:21 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:37 15:35
4	08:59 15:43	08:15 16:47	07:05 17:53	06:39 20:02	05:20 21:08	04:23 22:07	04:22 22:18	05:15 21:29	06:21 20:09	07:25 18:45	07:34 16:25	08:38 15:34
5	08:59 15:45	08:13 16:49	07:03 17:55	06:37 20:04	05:18 21:10	04:22 22:08	04:24 22:18	05:17 21:26	06:23 20:06	07:27 18:42	07:37 16:23	08:40 15:33
6	08:58 15:46	08:10 16:52	07:00 17:57	06:34 20:06	05:15 21:12	04:21 22:10	04:25 22:17	05:19 21:24	06:25 20:04	07:29 18:39	07:39 16:20	08:42 15:32
7	08:58 15:48	08:08 16:54	06:57 17:59	06:31 20:08	05:13 21:15	04:20 22:11	04:26 22:16	05:21 21:22	06:27 20:01	07:31 18:37	07:41 16:18	08:43 15:32
8	08:57 15:49	08:06 16:56	06:55 18:02	06:28 20:10	05:11 21:17	04:19 22:12	04:27 22:15	05:23 21:19	06:30 19:58	07:34 18:34	07:44 16:16	08:45 15:31
9	08:56 15:51	08:04 16:59	06:52 18:04	06:25 20:13	05:09 21:19	04:18 22:13	04:28 22:14	05:26 21:17	06:32 19:55	07:36 18:31	07:46 16:14	08:46 15:31
10	08:55 15:53	08:01 17:01	06:49 18:06	06:23 20:15	05:06 21:21	04:18 22:14	04:30 22:13	05:28 21:15	06:34 19:52	07:38 18:28	07:48 16:12	08:48 15:30
11	08:54 15:55	07:59 17:03	06:46 18:09	06:20 20:17	05:04 21:23	04:17 22:15	04:31 22:12	05:30 21:12	06:36 19:50	07:40 18:26	07:51 16:10	08:49 15:30
12	08:53 15:57	07:57 17:06	06:44 18:11	06:17 20:19	05:02 21:25	04:17 22:16	04:33 22:10	05:32 21:10	06:38 19:47	07:42 18:23	07:53 16:07	08:50 15:29
13	08:52 15:58	07:54 17:08	06:41 18:13	06:14 20:22	05:00 21:27	04:16 22:17	04:34 22:09	05:34 21:07	06:40 19:44	07:44 18:20	07:55 16:05	08:51 15:29
14	08:51 16:00	07:52 17:11	06:38 18:15	06:12 20:24	04:58 21:29	04:16 22:18	04:36 22:08	05:36 21:05	06:42 19:41	07:47 18:18	07:57 16:04	08:53 15:29
15	08:50 16:02	07:49 17:13	06:35 18:17	06:09 20:26	04:56 21:32	04:15 22:19	04:37 22:06	05:38 21:02	06:44 19:38	07:49 18:15	08:00 16:02	08:54 15:29
16	08:48 16:04	07:47 17:15	06:32 18:20	06:06 20:28	04:54 21:34	04:15 22:19	04:39 22:05	05:41 21:00	06:46 19:35	07:51 18:12	08:02 16:00	08:55 15:29
17	08:47 16:06	07:44 17:18	06:30 18:22	06:04 20:30	04:51 21:36	04:15 22:20	04:40 22:03	05:43 20:57	06:49 19:33	07:53 18:10	08:04 15:58	08:56 15:29
18	08:46 16:08	07:42 17:20	06:27 18:24	06:01 20:33	04:50 21:38	04:15 22:20	04:42 22:02	05:45 20:55	06:51 19:30	07:56 18:07	08:06 15:56	08:56 15:29
19	08:44 16:10	07:39 17:22	06:24 18:26	05:58 20:35	04:48 21:40	04:15 22:21	04:44 22:00	05:47 20:52	06:53 19:27	07:58 18:04	08:09 15:54	08:57 15:29
20	08:43 16:13	07:37 17:25	06:21 18:29	05:56 20:37	04:46 21:42	04:15 22:21	04:46 21:59	05:49 20:50	06:55 19:24	08:00 18:02	08:11 15:53	08:58 15:29
21	08:41 16:15	07:34 17:27	06:18 18:31	05:53 20:39	04:44 21:44	04:15 22:21	04:47 21:57	05:51 20:47	06:57 19:21	08:02 17:59	08:13 15:51	08:59 15:30
22	08:40 16:17	07:32 17:29	06:16 18:33	05:50 20:41	04:42 21:45	04:15 22:22	04:49 21:55	05:53 20:44	06:59 19:19	08:05 17:57	08:15 15:49	08:59 15:30
23	08:38 16:19	07:29 17:32	06:13 18:35	05:48 20:44	04:40 21:47	04:15 22:22	04:51 21:53	05:56 20:42	07:01 19:16	08:07 17:54	08:17 15:48	09:00 15:31
24	08:36 16:21	07:27 17:34	06:10 18:37	05:45 20:46	04:39 21:49	04:15 22:22	04:53 21:52	05:58 20:39	07:03 19:13	08:09 17:51	08:19 15:46	09:00 15:31
25	08:34 16:24	07:24 17:36	06:07 18:40	05:43 20:48	04:37 21:51	04:16 22:22	04:55 21:50	06:00 20:36	07:06 19:10	07:11 16:49	08:21 15:45	09:00 15:32
26	08:33 16:26	07:21 17:39	06:04 18:42	05:40 20:50	04:35 21:53	04:16 22:22	04:57 21:48	06:02 20:34	07:08 19:07	07:14 16:46	08:23 15:43	09:01 15:33
27	08:31 16:28	07:19 17:41	06:02 18:44	05:38 20:53	04:34 21:55	04:17 22:22	04:59 21:46	06:04 20:31	07:10 19:05	07:16 16:44	08:25 15:42	09:01 15:34
28	08:29 16:30	07:16 17:43	05:59 18:46	05:35 20:55	04:32 21:56	04:17 22:21	05:01 21:44	06:06 20:28	07:12 19:02	07:18 16:41	08:27 15:41	09:01 15:34
29	08:27 16:33		06:56 19:48	05:32 20:57	04:31 21:58	04:18 22:21	05:03 21:42	06:08 20:26	07:14 18:59	07:21 16:39	08:29 15:39	09:01 15:35
30	08:25 16:35		06:53 19:51	05:30 20:59	04:29 22:00	04:19 22:21	05:05 21:40	06:10 20:23	07:16 18:56	07:23 16:37	08:31 15:38	09:01 15:37
31	08:23 16:37		06:50 19:53		04:28 22:01		05:07 21:38	06:13 20:20		07:25 16:34		09:01 15:38
Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Rigas iela 63 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (535)
Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:28 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
2	09:00 15:41	08:19 16:42	07:11 17:48	06:45 19:57	05:25 21:04	04:25 22:04	04:21 22:20	05:11 21:33	06:17 20:15	07:21 18:51	07:30 16:29	08:35 15:36
3	09:00 15:42	08:17 16:45	07:08 17:50	06:42 19:59	05:23 21:06	04:24 22:06	04:21 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:37 15:35
4	08:59 15:43	08:15 16:47	07:05 17:53	06:39 20:02	05:20 21:08	04:23 22:07	04:22 22:18	05:15 21:29	06:21 20:09	07:25 18:45	07:34 16:25	08:38 15:34
5	08:59 15:45	08:13 16:49	07:03 17:55	06:37 20:04	05:18 21:10	04:22 22:08	04:24 22:18	05:17 21:26	06:23 20:06	07:27 18:42	07:37 16:23	08:40 15:33
6	08:58 15:46	08:10 16:52	07:00 17:57	06:34 20:06	05:16 21:12	04:21 22:10	04:25 22:17	05:19 21:24	06:25 20:04	07:29 18:39	07:39 16:20	08:42 15:32
7	08:58 15:48	08:08 16:54	06:57 17:59	06:31 20:08	05:13 21:15	04:20 22:11	04:26 22:16	05:21 21:22	06:27 20:01	07:31 18:37	07:41 16:18	08:43 15:32
8	08:57 15:49	08:06 16:56	06:55 18:02	06:28 20:10	05:11 21:17	04:19 22:12	04:27 22:15	05:24 21:19	06:30 19:58	07:34 18:34	07:44 16:16	08:45 15:31
9	08:56 15:51	08:04 16:59	06:52 18:04	06:25 20:13	05:09 21:19	04:18 22:13	04:28 22:14	05:26 21:17	06:32 19:55	07:36 18:31	07:46 16:14	08:46 15:31
10	08:55 15:53	08:01 17:01	06:49 18:06	06:23 20:15	05:06 21:21	04:18 22:14	04:30 22:13	05:28 21:15	06:34 19:52	07:38 18:28	07:48 16:12	08:48 15:30
11	08:54 15:55	07:59 17:04	06:46 18:09	06:20 20:17	05:04 21:23	04:17 22:15	04:31 22:12	05:30 21:12	06:36 19:50	07:40 18:26	07:51 16:10	08:49 15:30
12	08:53 15:57	07:57 17:06	06:44 18:11	06:17 20:19	05:02 21:25	04:17 22:16	04:33 22:10	05:32 21:19	06:38 19:47	07:42 18:23	07:53 16:08	08:50 15:29
13	08:52 15:58	07:54 17:08	06:41 18:13	06:15 20:22	05:00 21:27	04:16 22:17	04:34 22:09	05:34 21:07	06:40 19:44	07:45 18:20	07:55 16:06	08:51 15:29
14	08:51 16:00	07:52 17:11	06:38 18:15	06:12 20:24	04:58 21:29	04:16 22:18	04:36 22:08	05:36 21:05	06:42 19:41	07:47 18:18	07:57 16:04	08:53 15:29
15	08:50 16:02	07:49 17:13	06:35 18:17	06:09 20:26	04:56 21:32	04:15 22:19	04:37 22:06	05:38 21:02	06:44 19:38	07:49 18:15	08:00 16:02	08:54 15:29
16	08:48 16:04	07:47 17:15	06:32 18:20	06:06 20:28	04:54 21:34	04:15 22:19	04:39 22:05	05:41 21:00	06:46 19:35	07:51 18:12	08:02 16:00	08:55 15:29
17	08:47 16:06	07:44 17:18	06:30 18:22	06:04 20:30	04:52 21:36	04:15 22:20	04:41 22:03	05:43 20:57	06:49 19:33	07:53 18:10	08:04 15:58	08:56 15:29
18	08:46 16:08	07:42 17:20	06:27 18:24	06:01 20:33	04:50 21:38	04:15 22:20	04:42 22:02	05:45 20:55	06:51 19:30	07:56 18:07	08:06 15:56	08:56 15:29
19	08:44 16:11	07:39 17:22	06:24 18:26	05:58 20:35	04:48 21:40	04:15 22:21	04:44 22:00	05:47 20:52	06:53 19:27	07:58 18:04	08:09 15:54	08:57 15:29
20	08:43 16:13	07:37 17:25	06:21 18:29	05:56 20:37	04:46 21:42	04:15 22:21	04:46 21:59	05:49 20:50	06:55 19:24	08:00 18:02	08:11 15:53	08:58 15:29
21	08:41 16:15	07:34 17:27	06:18 18:31	05:53 20:39	04:44 21:44	04:15 22:21	04:48 21:57	05:51 20:47	06:57 19:21	08:02 17:59	08:13 15:51	08:59 15:30
22	08:40 16:17	07:32 17:30	06:16 18:33	05:50 20:41	04:42 21:45	04:15 22:22	04:49 21:55	05:53 20:44	06:59 19:19	08:05 17:57	08:15 15:49	08:59 15:30
23	08:38 16:19	07:29 17:32	06:13 18:35	05:48 20:44	04:40 21:47	04:15 22:22	04:51 21:53	05:56 20:42	07:01 19:16	08:07 17:54	08:17 15:48	09:00 15:31
24	08:36 16:21	07:27 17:34	06:10 18:37	05:45 20:46	04:39 21:49	04:15 22:22	04:53 21:52	05:58 20:39	07:03 19:13	08:09 17:51	08:19 15:46	09:00 15:31
25	08:34 16:24	07:24 17:37	06:07 18:40	05:43 20:48	04:37 21:51	04:16 22:22	04:55 21:50	06:00 20:36	07:06 19:10	07:11 16:49	08:21 15:45	09:00 15:32
26	08:33 16:26	07:21 17:39	06:04 18:42	05:40 20:50	04:35 21:53	04:16 22:22	04:57 21:48	06:02 20:34	07:08 19:07	07:14 16:46	08:23 15:43	09:01 15:33
27	08:31 16:28	07:19 17:41	06:02 18:44	05:38 20:53	04:34 21:55	04:17 22:22	04:59 21:46	06:04 20:31	07:10 19:05	07:16 16:44	08:25 15:42	09:01 15:34
28	08:29 16:30	07:16 17:43	05:59 18:46	05:35 20:55	04:32 21:56	04:17 22:21	05:01 21:44	06:06 20:28	07:12 19:02	07:18 16:42	08:27 15:41	09:01 15:35
29	08:27 16:33		05:56 19:48	05:33 20:57	04:31 21:58	04:18 22:21	05:03 21:42	06:08 20:26	07:14 18:59	07:21 16:39	08:29 15:39	09:01 15:36
30	08:25 16:35		05:53 19:51	05:30 20:59	04:29 22:00	04:19 22:21	05:05 21:40	06:10 20:23	07:16 18:56	07:23 16:37	08:31 15:38	09:01 15:37
31	08:23 16:37		05:50 19:53		04:28 22:01		05:07 21:38	06:13 20:20		07:25 16:34		09:01 15:38
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Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Rigas iela 64 (94010040147001) - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (684)

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:28 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
2	09:00 15:40	08:19 16:42	07:11 17:48	06:45 19:57	05:25 21:04	04:25 22:04	04:20 22:20	05:11 21:33	06:17 20:15	07:21 18:51	07:30 16:29	08:35 15:36
3	09:00 15:42	08:17 16:44	07:08 17:50	06:42 19:59	05:23 21:06	04:24 22:06	04:21 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:37 15:35
4	08:59 15:43	08:15 16:47	07:05 17:53	06:39 20:02	05:20 21:08	04:23 22:07	04:22 22:18	05:15 21:29	06:21 20:09	07:25 18:45	07:34 16:25	08:38 15:34
5	08:59 15:45	08:13 16:49	07:03 17:55	06:37 20:04	05:18 21:10	04:22 22:09	04:24 22:18	05:17 21:26	06:23 20:06	07:27 18:42	07:37 16:23	08:40 15:33
6	08:58 15:46	08:10 16:52	07:00 17:57	06:34 20:06	05:16 21:12	04:21 22:10	04:25 22:17	05:19 21:24	06:25 20:04	07:29 18:39	07:39 16:20	08:42 15:32
7	08:58 15:48	08:08 16:54	06:57 17:59	06:31 20:08	05:13 21:15	04:20 22:11	04:26 22:16	05:21 21:22	06:27 20:01	07:31 18:37	07:41 16:18	08:43 15:32
8	08:57 15:49	08:06 16:56	06:55 18:02	06:28 20:10	05:11 21:17	04:19 22:12	04:27 22:15	05:23 21:19	06:30 19:58	07:34 18:34	07:44 16:16	08:45 15:31
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10	08:55 15:53	08:01 17:01	06:49 18:06	06:23 20:15	05:06 21:21	04:18 22:14	04:30 22:13	05:28 21:15	06:34 19:52	07:38 18:28	07:48 16:12	08:48 15:30
11	08:54 15:55	07:59 17:04	06:46 18:09	06:20 20:17	05:04 21:23	04:17 22:15	04:31 22:12	05:30 21:12	06:36 19:50	07:40 18:26	07:51 16:10	08:49 15:30
12	08:53 15:57	07:57 17:06	06:44 18:11	06:17 20:19	05:02 21:25	04:17 22:16	04:33 22:10	05:32 21:10	06:38 19:47	07:42 18:23	07:53 16:08	08:50 15:29
13	08:52 15:58	07:54 17:08	06:41 18:13	06:15 20:22	05:00 21:27	04:16 22:17	04:34 22:09	05:34 21:07	06:40 19:44	07:45 18:20	07:55 16:05	08:51 15:29
14	08:51 16:00	07:52 17:11	06:38 18:15	06:12 20:24	04:58 21:29	04:16 22:18	04:36 22:08	05:36 21:05	06:42 19:41	07:47 18:18	07:57 16:04	08:53 15:29
15	08:50 16:02	07:49 17:13	06:35 18:17	06:09 20:26	04:56 21:32	04:15 22:19	04:37 22:06	05:38 21:02	06:44 19:38	07:49 18:15	08:00 16:02	08:54 15:29
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17	08:47 16:06	07:44 17:18	06:30 18:22	06:04 20:30	04:51 21:36	04:15 22:20	04:40 22:03	05:43 20:57	06:49 19:33	07:53 18:10	08:04 15:58	08:56 15:29
18	08:46 16:08	07:42 17:20	06:27 18:24	06:01 20:33	04:50 21:38	04:15 22:20	04:42 22:02	05:45 20:55	06:51 19:30	07:56 18:07	08:06 15:56	08:56 15:29
19	08:44 16:10	07:39 17:22	06:24 18:26	05:58 20:35	04:48 21:40	04:15 22:21	04:44 22:00	05:47 20:52	06:53 19:27	07:58 18:04	08:09 15:54	08:57 15:29
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31	08:23 16:37		05:50 19:53		04:28 22:01		05:07 21:38	06:13 20:20		07:25 16:34		09:01 15:38
Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Rigas iela 64 (94010040147003) - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (683)

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:28 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
2	09:00 15:40	08:19 16:42	07:11 17:48	06:45 19:57	05:25 21:04	04:25 22:04	04:21 22:20	05:11 21:33	06:17 20:15	07:21 18:51	07:30 16:29	08:35 15:36
3	09:00 15:42	08:17 16:44	07:08 17:50	06:42 19:59	05:23 21:06	04:24 22:06	04:21 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:37 15:35
4	08:59 15:43	08:15 16:47	07:05 17:53	06:39 20:02	05:20 21:08	04:23 22:07	04:22 22:18	05:15 21:29	06:21 20:09	07:25 18:45	07:34 16:25	08:38 15:34
5	08:59 15:45	08:13 16:49	07:03 17:55	06:37 20:04	05:18 21:10	04:22 22:09	04:24 22:18	05:17 21:26	06:23 20:06	07:27 18:42	07:37 16:23	08:40 15:33
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7	08:58 15:48	08:08 16:54	06:57 17:59	06:31 20:08	05:13 21:15	04:20 22:11	04:26 22:16	05:21 21:22	06:27 20:01	07:31 18:37	07:41 16:18	08:43 15:32
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9	08:56 15:51	08:04 16:59	06:52 18:04	06:25 20:13	05:09 21:19	04:18 22:13	04:28 22:14	05:26 21:17	06:32 19:55	07:36 18:31	07:46 16:14	08:46 15:31
10	08:55 15:53	08:01 17:01	06:49 18:06	06:23 20:15	05:06 21:21	04:18 22:14	04:30 22:13	05:28 21:15	06:34 19:52	07:38 18:28	07:48 16:12	08:48 15:30
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22	08:40 16:17	07:32 17:30	06:16 18:33	05:50 20:41	04:42 21:45	04:15 22:22	04:49 21:55	05:53 20:44	06:59 19:19	08:05 17:57	08:15 15:49	08:59 15:30
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31	08:23 16:37		05:50 19:53		04:28 22:01		05:07 21:38	06:13 20:20		07:25 16:34		09:01 15:38
Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Rigas iela 65 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (560)
Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:28 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
2	09:00 15:41	08:19 16:42	07:11 17:48	06:45 19:57	05:25 21:04	04:25 22:04	04:21 22:20	05:11 21:33	06:17 20:15	07:21 18:51	07:30 16:29	08:35 15:36
3	09:00 15:42	08:17 16:45	07:08 17:50	06:42 19:59	05:23 21:06	04:24 22:06	04:21 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:37 15:35
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31	08:23 16:37		05:50 19:53		04:28 22:01		05:07 21:38	06:13 20:20		07:25 16:34		09:01 15:38
Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Rīgas iela 67 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (551)
Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:28 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
2	09:00 15:41	08:19 16:42	07:11 17:48	06:45 19:57	05:25 21:04	04:25 22:04	04:21 22:20	05:11 21:33	06:17 20:15	07:21 18:51	07:30 16:29	08:35 15:36
3	09:00 15:42	08:17 16:45	07:08 17:50	06:42 19:59	05:23 21:06	04:24 22:06	04:21 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:37 15:35
4	08:59 15:43	08:15 16:47	07:05 17:53	06:39 20:02	05:20 21:08	04:23 22:07	04:22 22:18	05:15 21:29	06:21 20:09	07:25 18:45	07:34 16:25	08:38 15:34
5	08:59 15:45	08:13 16:49	07:03 17:55	06:37 20:04	05:18 21:10	04:22 22:08	04:24 22:18	05:17 21:26	06:23 20:06	07:27 18:42	07:37 16:23	08:40 15:33
6	08:58 15:46	08:10 16:52	07:00 17:57	06:34 20:06	05:16 21:12	04:21 22:10	04:25 22:17	05:19 21:24	06:25 20:04	07:29 18:39	07:39 16:20	08:42 15:32
7	08:58 15:48	08:08 16:54	06:57 17:59	06:31 20:08	05:13 21:15	04:20 22:11	04:26 22:16	05:21 21:22	06:27 20:01	07:31 18:37	07:41 16:18	08:43 15:32
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10	08:55 15:53	08:01 17:01	06:49 18:06	06:23 20:15	05:06 21:21	04:18 22:14	04:30 22:13	05:28 21:15	06:34 19:52	07:38 18:28	07:48 16:12	08:48 15:30
11	08:54 15:55	07:59 17:04	06:46 18:09	06:20 20:17	05:04 21:23	04:17 22:15	04:31 22:12	05:30 21:12	06:36 19:50	07:40 18:26	07:51 16:10	08:49 15:30
12	08:53 15:57	07:57 17:06	06:44 18:11	06:17 20:19	05:02 21:25	04:17 22:16	04:33 22:10	05:32 21:19	06:38 19:47	07:42 18:23	07:53 16:08	08:50 15:29
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14	08:51 16:00	07:52 17:11	06:38 18:15	06:12 20:24	04:58 21:29	04:16 22:18	04:36 22:08	05:36 21:05	06:42 19:41	07:47 18:18	07:57 16:04	08:53 15:29
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19	08:44 16:11	07:39 17:22	06:24 18:26	05:58 20:35	04:48 21:40	04:15 22:21	04:44 22:00	05:47 20:52	06:53 19:27	07:58 18:04	08:09 15:54	08:57 15:29
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22	08:40 16:17	07:32 17:30	06:16 18:33	05:50 20:41	04:42 21:45	04:15 22:22	04:49 21:55	05:53 20:44	06:59 19:19	08:05 17:57	08:15 15:49	08:59 15:30
23	08:38 16:19	07:29 17:32	06:13 18:35	05:48 20:44	04:40 21:47	04:15 22:22	04:51 21:53	05:56 20:42	07:01 19:16	08:07 17:54	08:17 15:48	09:00 15:31
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25	08:34 16:24	07:24 17:37	06:07 18:40	05:43 20:48	04:37 21:51	04:16 22:22	04:55 21:50	06:00 20:36	07:06 19:10	07:11 16:49	08:21 15:45	09:00 15:32
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Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Rigas iela 68 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (735)
Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

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Total, worst case												
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Rigas iela 69 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (531)
 Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
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16	08:48 16:04	07:47 17:15	06:32 18:20	06:06 20:28	04:54 21:34	04:15 22:19	04:39 22:05	05:41 21:00	06:47 19:35	07:51 18:12	08:02 16:00	08:55 15:29
17	08:47 16:06	07:44 17:18	06:30 18:22	06:04 20:30	04:52 21:36	04:15 22:20	04:41 22:03	05:43 20:57	06:49 19:33	07:53 18:10	08:04 15:58	08:56 15:29
18	08:46 16:08	07:42 17:20	06:27 18:24	06:01 20:33	04:50 21:38	04:15 22:20	04:42 22:02	05:45 20:55	06:51 19:30	07:56 18:07	08:06 15:56	08:56 15:29
19	08:44 16:11	07:39 17:22	06:24 18:26	05:58 20:35	04:48 21:40	04:15 22:21	04:44 22:00	05:47 20:52	06:53 19:27	07:58 18:04	08:09 15:54	08:57 15:29
20	08:43 16:13	07:37 17:25	06:21 18:29	05:56 20:37	04:46 21:42	04:15 22:21	04:46 21:59	05:49 20:50	06:55 19:24	08:00 18:02	08:11 15:53	08:58 15:29
21	08:41 16:15	07:34 17:27	06:18 18:31	05:53 20:39	04:44 21:44	04:15 22:21	04:48 21:57	05:51 20:47	06:57 19:21	08:02 17:59	08:13 15:51	08:59 15:30
22	08:40 16:17	07:32 17:30	06:16 18:33	05:50 20:41	04:42 21:45	04:15 22:22	04:49 21:55	05:53 20:44	06:59 19:19	08:05 17:57	08:15 15:49	08:59 15:30
23	08:38 16:19	07:29 17:32	06:13 18:35	05:48 20:44	04:40 21:47	04:15 22:22	04:51 21:53	05:56 20:42	07:01 19:16	08:07 17:54	08:17 15:48	09:00 15:31
24	08:36 16:21	07:27 17:34	06:10 18:37	05:45 20:46	04:39 21:49	04:15 22:22	04:53 21:52	05:58 20:39	07:03 19:13	08:09 17:52	08:19 15:46	09:00 15:31
25	08:34 16:24	07:24 17:37	06:07 18:40	05:43 20:48	04:37 21:51	04:16 22:22	04:55 21:50	06:00 20:36	07:06 19:10	07:11 16:49	08:21 15:45	09:00 15:32
26	08:33 16:26	07:21 17:39	06:04 18:42	05:40 20:50	04:35 21:53	04:16 22:22	04:57 21:48	06:02 20:34	07:08 19:07	07:14 16:46	08:23 15:43	09:01 15:33
27	08:31 16:28	07:19 17:41	06:02 18:44	05:38 20:53	04:34 21:55	04:17 22:22	04:59 21:46	06:04 20:31	07:10 19:05	07:16 16:44	08:25 15:42	09:01 15:34
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29	08:27 16:33		05:56 19:48	05:33 20:57	04:31 21:58	04:18 22:21	05:03 21:42	06:08 20:26	07:14 18:59	07:21 16:39	08:29 15:39	09:01 15:36
30	08:25 16:35		05:53 19:51	05:30 20:59	04:29 22:00	04:19 22:21	05:05 21:40	06:10 20:23	07:16 18:56	07:23 16:37	08:31 15:38	09:01 15:37
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Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
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Table layout: For each day in each month the following matrix apply

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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Rigas iela 70 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (794)
 Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

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2	09:00 15:41	08:19 16:42	07:11 17:48	06:45 19:57	05:25 21:04	04:25 22:04	04:21 22:20	05:11 21:33	06:17 20:15	07:21 18:51	07:30 16:29	08:35 15:36
3	09:00 15:42	08:17 16:45	07:08 17:50	06:42 19:59	05:23 21:06	04:24 22:06	04:21 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:37 15:35
4	08:59 15:43	08:15 16:47	07:05 17:53	06:39 20:02	05:20 21:08	04:23 22:07	04:22 22:18	05:15 21:29	06:21 20:09	07:25 18:45	07:34 16:25	08:38 15:34
5	08:59 15:45	08:13 16:49	07:03 17:55	06:37 20:04	05:18 21:10	04:22 22:08	04:24 22:18	05:17 21:26	06:23 20:06	07:27 18:42	07:37 16:23	08:40 15:33
6	08:58 15:46	08:10 16:52	07:00 17:57	06:34 20:06	05:16 21:12	04:21 22:10	04:25 22:17	05:19 21:24	06:25 20:04	07:29 18:39	07:39 16:20	08:42 15:32
7	08:58 15:48	08:08 16:54	06:57 17:59	06:31 20:08	05:13 21:15	04:20 22:11	04:26 22:16	05:21 21:22	06:27 20:01	07:31 18:37	07:41 16:18	08:43 15:32
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10	08:55 15:53	08:01 17:01	06:49 18:06	06:23 20:15	05:06 21:21	04:18 22:14	04:30 22:13	05:28 21:15	06:34 19:52	07:38 18:28	07:48 16:12	08:48 15:30
11	08:54 15:55	07:59 17:04	06:46 18:09	06:20 20:17	05:04 21:23	04:17 22:15	04:31 22:12	05:30 21:12	06:36 19:50	07:40 18:26	07:51 16:10	08:49 15:30
12	08:53 15:57	07:57 17:06	06:44 18:11	06:17 20:19	05:02 21:25	04:17 22:16	04:33 22:10	05:32 21:19	06:38 19:47	07:42 18:23	07:53 16:08	08:50 15:29
13	08:52 15:58	07:54 17:08	06:41 18:13	06:15 20:22	05:00 21:27	04:16 22:17	04:34 22:09	05:34 21:07	06:40 19:44	07:45 18:20	07:55 16:06	08:51 15:29
14	08:51 16:00	07:52 17:11	06:38 18:15	06:12 20:24	04:58 21:29	04:16 22:18	04:36 22:08	05:36 21:05	06:42 19:41	07:47 18:18	07:57 16:04	08:53 15:29
15	08:50 16:02	07:49 17:13	06:35 18:17	06:09 20:26	04:56 21:32	04:15 22:19	04:37 22:06	05:38 21:02	06:44 19:38	07:49 18:15	08:00 16:02	08:54 15:29
16	08:48 16:04	07:47 17:15	06:32 18:20	06:06 20:28	04:54 21:34	04:15 22:19	04:39 22:05	05:41 21:00	06:46 19:35	07:51 18:12	08:02 16:00	08:55 15:29
17	08:47 16:06	07:44 17:18	06:30 18:22	06:04 20:30	04:52 21:36	04:15 22:20	04:41 22:03	05:43 20:57	06:49 19:33	07:53 18:10	08:04 15:58	08:56 15:29
18	08:46 16:08	07:42 17:20	06:27 18:24	06:01 20:33	04:50 21:38	04:15 22:20	04:42 22:02	05:45 20:55	06:51 19:30	07:56 18:07	08:06 15:56	08:56 15:29
19	08:44 16:10	07:39 17:22	06:24 18:26	05:58 20:35	04:48 21:40	04:15 22:21	04:44 22:00	05:47 20:52	06:53 19:27	07:58 18:04	08:09 15:54	08:57 15:29
20	08:43 16:13	07:37 17:25	06:21 18:29	05:56 20:37	04:46 21:42	04:15 22:21	04:46 21:59	05:49 20:50	06:55 19:24	08:00 18:02	08:11 15:53	08:58 15:29
21	08:41 16:15	07:34 17:27	06:18 18:31	05:53 20:39	04:44 21:44	04:15 22:21	04:47 21:57	05:51 20:47	06:57 19:21	08:02 17:59	08:13 15:51	08:59 15:30
22	08:40 16:17	07:32 17:30	06:16 18:33	05:50 20:41	04:42 21:45	04:15 22:22	04:49 21:55	05:53 20:44	06:59 19:19	08:05 17:57	08:15 15:49	08:59 15:30
23	08:38 16:19	07:29 17:32	06:13 18:35	05:48 20:44	04:40 21:47	04:15 22:22	04:51 21:53	05:56 20:42	07:01 19:16	08:07 17:54	08:17 15:48	09:00 15:31
24	08:36 16:21	07:27 17:34	06:10 18:37	05:45 20:46	04:39 21:49	04:15 22:22	04:53 21:52	05:58 20:39	07:03 19:13	08:09 17:51	08:19 15:46	09:00 15:31
25	08:34 16:24	07:24 17:37	06:07 18:40	05:43 20:48	04:37 21:51	04:16 22:22	04:55 21:50	06:00 20:36	07:06 19:10	07:11 16:49	08:21 15:45	09:00 15:32
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28	08:29 16:30	07:16 17:43	05:59 18:46	05:35 20:55	04:32 21:56	04:17 22:21	05:01 21:44	06:06 20:28	07:12 19:02	07:18 16:42	08:27 15:41	09:01 15:35
29	08:27 16:33		05:56 19:48	05:33 20:57	04:31 21:58	04:18 22:21	05:03 21:42	06:08 20:26	07:14 18:59	07:21 16:39	08:29 15:39	09:01 15:35
30	08:25 16:35		05:53 19:51	05:30 20:59	04:29 22:00	04:19 22:21	05:05 21:40	06:10 20:23	07:16 18:56	07:23 16:37	08:31 15:38	09:01 15:37
31	08:23 16:37		05:50 19:53		04:28 22:01		05:07 21:38	06:13 20:20		07:25 16:34		09:01 15:38
Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
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Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Rigas iela 71 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (509)
Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:28 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
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3	09:00 15:42	08:17 16:45	07:08 17:50	06:42 19:59	05:23 21:06	04:24 22:06	04:21 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:37 15:35
4	08:59 15:43	08:15 16:47	07:05 17:53	06:39 20:02	05:20 21:08	04:23 22:07	04:23 22:18	05:15 21:29	06:21 20:09	07:25 18:45	07:34 16:25	08:38 15:34
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Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Rigas iela 72 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (727)
 Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
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	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:28 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
2	09:00 15:41	08:19 16:42	07:11 17:48	06:45 19:57	05:25 21:04	04:25 22:04	04:21 22:20	05:11 21:33	06:17 20:15	07:21 18:51	07:30 16:29	08:35 15:36
3	09:00 15:42	08:17 16:45	07:08 17:50	06:42 19:59	05:23 21:06	04:24 22:06	04:21 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:37 15:35
4	08:59 15:43	08:15 16:47	07:05 17:53	06:39 20:02	05:20 21:08	04:23 22:07	04:22 22:18	05:15 21:29	06:21 20:09	07:25 18:45	07:34 16:25	08:38 15:34
5	08:59 15:45	08:13 16:49	07:03 17:55	06:37 20:04	05:18 21:10	04:22 22:08	04:24 22:18	05:17 21:26	06:23 20:06	07:27 18:42	07:37 16:23	08:40 15:33
6	08:58 15:46	08:10 16:52	07:00 17:57	06:34 20:06	05:16 21:12	04:21 22:10	04:25 22:17	05:19 21:24	06:25 20:04	07:29 18:39	07:39 16:20	08:42 15:32
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9	08:56 15:51	08:04 16:59	06:52 18:04	06:25 20:13	05:09 21:19	04:18 22:13	04:28 22:14	05:26 21:17	06:32 19:55	07:36 18:31	07:46 16:14	08:46 15:31
10	08:55 15:53	08:01 17:01	06:49 18:06	06:23 20:15	05:06 21:21	04:18 22:14	04:30 22:13	05:28 21:15	06:34 19:52	07:38 18:28	07:48 16:12	08:48 15:30
11	08:54 15:55	07:59 17:04	06:46 18:09	06:20 20:17	05:04 21:23	04:17 22:15	04:31 22:12	05:30 21:12	06:36 19:50	07:40 18:26	07:51 16:10	08:49 15:30
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31	08:23 16:37		05:50 19:53		04:28 22:01		05:07 21:38	06:13 20:20		07:25 16:34		09:01 15:38
Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Rigas iela 73 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (563)
 Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:28 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
2	09:00 15:41	08:19 16:42	07:11 17:48	06:45 19:57	05:25 21:04	04:25 22:04	04:21 22:20	05:11 21:33	06:17 20:15	07:21 18:51	07:30 16:30	08:35 15:36
3	09:00 15:42	08:17 16:45	07:08 17:50	06:42 19:59	05:23 21:06	04:24 22:06	04:21 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:37 15:35
4	08:59 15:43	08:15 16:47	07:05 17:53	06:39 20:02	05:20 21:08	04:23 22:07	04:23 22:18	05:15 21:29	06:21 20:09	07:25 18:45	07:34 16:25	08:38 15:34
5	08:59 15:45	08:13 16:49	07:03 17:55	06:37 20:04	05:18 21:10	04:22 22:08	04:24 22:18	05:17 21:26	06:23 20:06	07:27 18:42	07:37 16:23	08:40 15:33
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11	08:54 15:55	07:59 17:04	06:46 18:09	06:20 20:17	05:04 21:23	04:17 22:15	04:31 22:12	05:30 21:12	06:36 19:50	07:40 18:26	07:51 16:10	08:49 15:30
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19	08:44 16:11	07:39 17:22	06:24 18:26	05:58 20:35	04:48 21:40	04:15 22:21	04:44 22:00	05:47 20:52	06:53 19:27	07:58 18:04	08:09 15:54	08:57 15:29
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31	08:23 16:37		05:50 19:53		04:28 22:01		05:07 21:38	06:13 20:20		07:25 16:34		09:01 15:38
Potential sun hours	227	262	365	429	515	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Rigas iela 74 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (755)
 Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:28 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
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20	08:43 16:13	07:37 17:25	06:21 18:29	05:56 20:37	04:46 21:42	04:15 22:21	04:46 21:59	05:49 20:50	06:55 19:24	08:00 18:02	08:11 15:53	08:58 15:29
21	08:41 16:15	07:34 17:27	06:18 18:31	05:53 20:39	04:44 21:44	04:15 22:21	04:48 21:57	05:51 20:47	06:57 19:21	08:02 17:59	08:13 15:51	08:59 15:30
22	08:40 16:17	07:32 17:30	06:16 18:33	05:50 20:41	04:42 21:45	04:15 22:22	04:49 21:55	05:53 20:44	06:59 19:19	08:05 17:57	08:15 15:49	08:59 15:30
23	08:38 16:19	07:29 17:32	06:13 18:35	05:48 20:44	04:40 21:47	04:15 22:22	04:51 21:53	05:56 20:42	07:01 19:16	08:07 17:54	08:17 15:48	09:00 15:31
24	08:36 16:21	07:27 17:34	06:10 18:37	05:45 20:46	04:39 21:49	04:15 22:22	04:53 21:52	05:58 20:39	07:03 19:13	08:09 17:51	08:19 15:46	09:00 15:31
25	08:34 16:24	07:24 17:37	06:07 18:40	05:43 20:48	04:37 21:51	04:16 22:22	04:55 21:50	06:00 20:36	07:06 19:10	07:11 16:49	08:21 15:45	09:00 15:32
26	08:33 16:26	07:21 17:39	06:04 18:42	05:40 20:50	04:35 21:53	04:16 22:22	04:57 21:48	06:02 20:34	07:08 19:07	07:14 16:46	08:23 15:43	09:01 15:33
27	08:31 16:28	07:19 17:41	06:02 18:44	05:38 20:53	04:34 21:55	04:17 22:22	04:59 21:46	06:04 20:31	07:10 19:05	07:16 16:44	08:25 15:42	09:01 15:34
28	08:29 16:30	07:16 17:43	05:59 18:46	05:35 20:55	04:32 21:56	04:17 22:21	05:01 21:44	06:06 20:28	07:12 19:02	07:18 16:42	08:27 15:41	09:01 15:35
29	08:27 16:33		05:56 19:48	05:33 20:57	04:31 21:58	04:18 22:21	05:03 21:42	06:08 20:26	07:14 18:59	07:21 16:39	08:29 15:39	09:01 15:36
30	08:25 16:35		05:53 19:51	05:30 20:59	04:29 22:00	04:19 22:21	05:05 21:40	06:10 20:23	07:16 18:56	07:23 16:37	08:31 15:38	09:01 15:37
31	08:23 16:37		05:50 19:53		04:28 22:01		05:07 21:38	06:13 20:20		07:25 16:34		09:01 15:38
Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
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Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Rigas iela 75 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (510)
Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:28 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
2	09:00 15:41	08:19 16:42	07:11 17:48	06:45 19:57	05:25 21:04	04:25 22:04	04:21 22:20	05:11 21:33	06:17 20:15	07:21 18:51	07:30 16:30	08:35 15:36
3	09:00 15:42	08:17 16:45	07:08 17:50	06:42 19:59	05:23 21:06	04:24 22:06	04:22 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:37 15:35
4	08:59 15:43	08:15 16:47	07:05 17:53	06:39 20:02	05:20 21:08	04:23 22:07	04:23 22:18	05:15 21:29	06:21 20:09	07:25 18:45	07:34 16:25	08:38 15:34
5	08:59 15:45	08:13 16:49	07:03 17:55	06:37 20:04	05:18 21:10	04:22 22:08	04:24 22:18	05:17 21:26	06:23 20:06	07:27 18:42	07:37 16:23	08:40 15:33
6	08:58 15:46	08:10 16:52	07:00 17:57	06:34 20:06	05:16 21:12	04:21 22:10	04:25 22:17	05:19 21:24	06:25 20:04	07:29 18:39	07:39 16:20	08:42 15:32
7	08:58 15:48	08:08 16:54	06:57 17:59	06:31 20:08	05:13 21:15	04:20 22:11	04:26 22:16	05:21 21:22	06:28 20:01	07:31 18:37	07:41 16:18	08:43 15:32
8	08:57 15:50	08:06 16:56	06:55 18:02	06:28 20:10	05:11 21:17	04:19 22:12	04:27 22:15	05:24 21:19	06:30 19:58	07:34 18:34	07:44 16:16	08:45 15:31
9	08:56 15:51	08:04 16:59	06:52 18:04	06:25 20:13	05:09 21:19	04:19 22:13	04:28 22:14	05:26 21:17	06:32 19:55	07:36 18:31	07:46 16:14	08:46 15:31
10	08:55 15:53	08:01 17:01	06:49 18:06	06:23 20:15	05:06 21:21	04:18 22:14	04:30 22:13	05:28 21:15	06:34 19:52	07:38 18:28	07:48 16:12	08:48 15:30
11	08:54 15:55	07:59 17:04	06:46 18:09	06:20 20:17	05:04 21:23	04:17 22:15	04:31 22:12	05:30 21:12	06:36 19:50	07:40 18:26	07:51 16:10	08:49 15:30
12	08:53 15:57	07:57 17:06	06:44 18:11	06:17 20:19	05:02 21:25	04:17 22:16	04:33 22:10	05:32 21:19	06:38 19:47	07:42 18:23	07:53 16:08	08:50 15:29
13	08:52 15:58	07:54 17:08	06:41 18:13	06:15 20:22	05:00 21:27	04:16 22:17	04:34 22:09	05:34 21:07	06:40 19:44	07:45 18:20	07:55 16:06	08:51 15:29
14	08:51 16:00	07:52 17:11	06:38 18:15	06:12 20:24	04:58 21:29	04:16 22:18	04:36 22:08	05:36 21:05	06:42 19:41	07:47 18:18	07:57 16:04	08:53 15:29
15	08:50 16:02	07:49 17:13	06:35 18:17	06:09 20:26	04:56 21:32	04:15 22:19	04:37 22:06	05:38 21:02	06:44 19:38	07:49 18:15	08:00 16:02	08:54 15:29
16	08:48 16:04	07:47 17:15	06:32 18:20	06:06 20:28	04:54 21:34	04:15 22:19	04:39 22:05	05:41 21:00	06:47 19:36	07:51 18:12	08:02 16:00	08:55 15:29
17	08:47 16:06	07:44 17:18	06:30 18:22	06:04 20:30	04:52 21:36	04:15 22:20	04:41 22:03	05:43 20:57	06:49 19:33	07:53 18:10	08:04 15:58	08:56 15:29
18	08:46 16:08	07:42 17:20	06:27 18:24	06:01 20:33	04:50 21:38	04:15 22:20	04:42 22:02	05:45 20:55	06:51 19:30	07:56 18:07	08:06 15:56	08:56 15:29
19	08:44 16:11	07:39 17:22	06:24 18:26	05:58 20:35	04:48 21:40	04:15 22:21	04:44 22:00	05:47 20:52	06:53 19:27	07:58 18:04	08:09 15:54	08:57 15:29
20	08:43 16:13	07:37 17:25	06:21 18:29	05:56 20:37	04:46 21:42	04:15 22:21	04:46 21:59	05:49 20:50	06:55 19:24	08:00 18:02	08:11 15:53	08:58 15:29
21	08:41 16:15	07:34 17:27	06:18 18:31	05:53 20:39	04:44 21:44	04:15 22:21	04:48 21:57	05:51 20:47	06:57 19:21	08:02 17:59	08:13 15:51	08:59 15:30
22	08:40 16:17	07:32 17:30	06:16 18:33	05:50 20:41	04:42 21:45	04:15 22:22	04:49 21:55	05:53 20:44	06:59 19:19	08:05 17:57	08:15 15:49	08:59 15:30
23	08:38 16:19	07:29 17:32	06:13 18:35	05:48 20:44	04:40 21:47	04:15 22:22	04:51 21:53	05:56 20:42	07:01 19:16	08:07 17:54	08:17 15:48	09:00 15:31
24	08:36 16:21	07:27 17:34	06:10 18:37	05:45 20:46	04:39 21:49	04:15 22:22	04:53 21:52	05:58 20:39	07:03 19:13	08:09 17:52	08:19 15:46	09:00 15:31
25	08:34 16:24	07:24 17:37	06:07 18:40	05:43 20:48	04:37 21:51	04:16 22:22	04:55 21:50	06:00 20:36	07:06 19:10	07:11 16:49	08:21 15:45	09:00 15:32
26	08:33 16:26	07:21 17:39	06:04 18:42	05:40 20:50	04:35 21:53	04:16 22:22	04:57 21:48	06:02 20:34	07:08 19:07	07:14 16:46	08:23 15:43	09:01 15:33
27	08:31 16:28	07:19 17:41	06:02 18:44	05:38 20:53	04:34 21:55	04:17 22:22	04:59 21:46	06:04 20:31	07:10 19:05	07:16 16:44	08:25 15:42	09:01 15:34
28	08:29 16:30	07:16 17:43	05:59 18:46	05:35 20:55	04:32 21:56	04:17 22:21	05:01 21:44	06:06 20:28	07:12 19:02	07:18 16:42	08:27 15:41	09:01 15:35
29	08:27 16:33		05:56 19:48	05:33 20:57	04:31 21:58	04:18 22:21	05:03 21:42	06:08 20:26	07:14 18:59	07:21 16:39	08:29 15:39	09:01 15:36
30	08:25 16:35		05:53 19:51	05:30 20:59	04:29 22:00	04:19 22:21	05:05 21:40	06:11 20:23	07:16 18:56	07:23 16:37	08:31 15:38	09:01 15:37
31	08:23 16:37		05:50 19:53		04:28 22:01		05:07 21:38	06:13 20:20		07:25 16:34		09:01 15:38
Potential sun hours	227	262	365	429	515	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Rigas iela 76 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (747)
Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:28 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
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3	09:00 15:42	08:17 16:45	07:08 17:50	06:42 19:59	05:23 21:06	04:24 22:06	04:21 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:37 15:35
4	08:59 15:43	08:15 16:47	07:05 17:53	06:39 20:02	05:20 21:08	04:23 22:07	04:22 22:18	05:15 21:29	06:21 20:09	07:25 18:45	07:34 16:25	08:38 15:34
5	08:59 15:45	08:13 16:49	07:03 17:55	06:37 20:04	05:18 21:10	04:22 22:08	04:24 22:18	05:17 21:26	06:23 20:06	07:27 18:42	07:37 16:23	08:40 15:33
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7	08:58 15:48	08:08 16:54	06:57 17:59	06:31 20:08	05:13 21:15	04:20 22:11	04:26 22:16	05:21 21:22	06:27 20:01	07:31 18:37	07:41 16:18	08:43 15:32
8	08:57 15:49	08:06 16:56	06:55 18:02	06:28 20:10	05:11 21:17	04:19 22:12	04:27 22:15	05:24 21:19	06:30 19:58	07:34 18:34	07:44 16:16	08:45 15:31
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10	08:55 15:53	08:01 17:01	06:49 18:06	06:23 20:15	05:06 21:21	04:18 22:14	04:30 22:13	05:28 21:15	06:34 19:52	07:38 18:28	07:48 16:12	08:48 15:30
11	08:54 15:55	07:59 17:04	06:46 18:09	06:20 20:17	05:04 21:23	04:17 22:15	04:31 22:12	05:30 21:12	06:36 19:50	07:40 18:26	07:51 16:10	08:49 15:30
12	08:53 15:57	07:57 17:06	06:44 18:11	06:17 20:19	05:02 21:25	04:17 22:16	04:33 22:10	05:32 21:19	06:38 19:47	07:42 18:23	07:53 16:08	08:50 15:29
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19	08:44 16:11	07:39 17:22	06:24 18:26	05:58 20:35	04:48 21:40	04:15 22:21	04:44 22:00	05:47 20:52	06:53 19:27	07:58 18:04	08:09 15:54	08:57 15:29
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22	08:40 16:17	07:32 17:30	06:16 18:33	05:50 20:41	04:42 21:45	04:15 22:22	04:49 21:55	05:53 20:44	06:59 19:19	08:05 17:57	08:15 15:49	08:59 15:30
23	08:38 16:19	07:29 17:32	06:13 18:35	05:48 20:44	04:40 21:47	04:15 22:22	04:51 21:53	05:56 20:42	07:01 19:16	08:07 17:54	08:17 15:48	09:00 15:31
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Total, worst case												
Sun reduction												
Oper. time red.												
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Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Rigas iela 78 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (693)
 Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
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4	08:59 15:43	08:15 16:47	07:05 17:53	06:39 20:02	05:20 21:08	04:23 22:07	04:22 22:18	05:15 21:29	06:21 20:09	07:25 18:45	07:34 16:25	08:38 15:34
5	08:59 15:45	08:13 16:49	07:03 17:55	06:37 20:04	05:18 21:10	04:22 22:08	04:24 22:18	05:17 21:26	06:23 20:06	07:27 18:42	07:37 16:23	08:40 15:33
6	08:58 15:46	08:10 16:52	07:00 17:57	06:34 20:06	05:16 21:12	04:21 22:10	04:25 22:17	05:19 21:24	06:25 20:04	07:29 18:39	07:39 16:20	08:42 15:32
7	08:58 15:48	08:08 16:54	06:57 17:59	06:31 20:08	05:13 21:15	04:20 22:11	04:26 22:16	05:21 21:22	06:27 20:01	07:31 18:37	07:41 16:18	08:43 15:32
8	08:57 15:49	08:06 16:56	06:55 18:02	06:28 20:10	05:11 21:17	04:19 22:12	04:27 22:15	05:24 21:19	06:30 19:58	07:34 18:34	07:44 16:16	08:45 15:31
9	08:56 15:51	08:04 16:59	06:52 18:04	06:25 20:13	05:09 21:19	04:19 22:13	04:28 22:14	05:26 21:17	06:32 19:55	07:36 18:31	07:46 16:14	08:46 15:31
10	08:55 15:53	08:01 17:01	06:49 18:06	06:23 20:15	05:06 21:21	04:18 22:14	04:30 22:13	05:28 21:15	06:34 19:52	07:38 18:28	07:48 16:12	08:48 15:30
11	08:54 15:55	07:59 17:04	06:46 18:09	06:20 20:17	05:04 21:23	04:17 22:15	04:31 22:12	05:30 21:12	06:36 19:50	07:40 18:26	07:51 16:10	08:49 15:30
12	08:53 15:57	07:57 17:06	06:44 18:11	06:17 20:19	05:02 21:25	04:17 22:16	04:33 22:10	05:32 21:19	06:38 19:47	07:42 18:23	07:53 16:08	08:50 15:29
13	08:52 15:58	07:54 17:08	06:41 18:13	06:15 20:22	05:00 21:27	04:16 22:17	04:34 22:09	05:34 21:07	06:40 19:44	07:45 18:20	07:55 16:06	08:51 15:29
14	08:51 16:00	07:52 17:11	06:38 18:15	06:12 20:24	04:58 21:29	04:16 22:18	04:36 22:08	05:36 21:05	06:42 19:41	07:47 18:18	07:57 16:04	08:53 15:29
15	08:50 16:02	07:49 17:13	06:35 18:17	06:09 20:26	04:56 21:32	04:15 22:19	04:37 22:06	05:38 21:02	06:44 19:38	07:49 18:15	08:00 16:02	08:54 15:29
16	08:48 16:04	07:47 17:15	06:32 18:20	06:06 20:28	04:54 21:34	04:15 22:19	04:39 22:05	05:41 21:00	06:47 19:36	07:51 18:12	08:02 16:00	08:55 15:29
17	08:47 16:06	07:44 17:18	06:30 18:22	06:04 20:30	04:52 21:36	04:15 22:20	04:41 22:03	05:43 20:57	06:49 19:33	07:53 18:10	08:04 15:58	08:56 15:29
18	08:46 16:08	07:42 17:20	06:27 18:24	06:01 20:33	04:50 21:38	04:15 22:20	04:42 22:02	05:45 20:55	06:51 19:30	07:56 18:07	08:06 15:56	08:56 15:29
19	08:44 16:11	07:39 17:22	06:24 18:26	05:58 20:35	04:48 21:40	04:15 22:21	04:44 22:00	05:47 20:52	06:53 19:27	07:58 18:04	08:09 15:54	08:57 15:29
20	08:43 16:13	07:37 17:25	06:21 18:29	05:56 20:37	04:46 21:42	04:15 22:21	04:46 21:59	05:49 20:50	06:55 19:24	08:00 18:02	08:11 15:53	08:58 15:29
21	08:41 16:15	07:34 17:27	06:18 18:31	05:53 20:39	04:44 21:44	04:15 22:21	04:48 21:57	05:51 20:47	06:57 19:21	08:02 17:59	08:13 15:51	08:59 15:30
22	08:40 16:17	07:32 17:30	06:16 18:33	05:50 20:41	04:42 21:45	04:15 22:22	04:49 21:55	05:53 20:44	06:59 19:19	08:05 17:57	08:15 15:49	08:59 15:30
23	08:38 16:19	07:29 17:32	06:13 18:35	05:48 20:44	04:40 21:47	04:15 22:22	04:51 21:53	05:56 20:42	07:01 19:16	08:07 17:54	08:17 15:48	09:00 15:31
24	08:36 16:21	07:27 17:34	06:10 18:37	05:45 20:46	04:39 21:49	04:15 22:22	04:53 21:52	05:58 20:39	07:03 19:13	08:09 17:52	08:19 15:46	09:00 15:31
25	08:34 16:24	07:24 17:37	06:07 18:40	05:43 20:48	04:37 21:51	04:16 22:22	04:55 21:50	06:00 20:36	07:06 19:10	07:11 16:49	08:21 15:45	09:00 15:32
26	08:33 16:26	07:21 17:39	06:04 18:42	05:40 20:50	04:35 21:53	04:16 22:22	04:57 21:48	06:02 20:34	07:08 19:07	07:14 16:46	08:23 15:43	09:01 15:33
27	08:31 16:28	07:19 17:41	06:02 18:44	05:38 20:53	04:34 21:55	04:17 22:22	04:59 21:46	06:04 20:31	07:10 19:05	07:16 16:44	08:25 15:42	09:01 15:34
28	08:29 16:30	07:16 17:43	05:59 18:46	05:35 20:55	04:32 21:56	04:17 22:21	05:01 21:44	06:06 20:28	07:12 19:02	07:18 16:42	08:27 15:41	09:01 15:35
29	08:27 16:33		05:56 19:48	05:33 20:57	04:31 21:58	04:18 22:21	05:03 21:42	06:08 20:26	07:14 18:59	07:21 16:39	08:29 15:39	09:01 15:36
30	08:25 16:35		05:53 19:51	05:30 20:59	04:29 22:00	04:19 22:21	05:05 21:40	06:10 20:23	07:16 18:56	07:23 16:37	08:31 15:38	09:01 15:37
31	08:23 16:37		05:50 19:53		04:28 22:01		05:07 21:38	06:13 20:20		07:25 16:34		09:01 15:38
Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Rigas iela 80 - Shadow Receptor: 1.0×1.0 Azimuth: 3.1° Slope: 90.0° (758)
 Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) []

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
 0.80 1.82 4.75 6.09 9.67 10.05 8.16 7.72 5.94 2.93 0.63 0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01	09:54 (1)	08:21	07:14	06:48	05:28	04:27	04:20	05:09	06:15	07:18	07:28
2	15:39	10:18 (1)	16:40	17:46	19:55	21:01	22:03	22:20	21:35	20:17	18:53	16:32
3	09:00	09:55 (1)	08:19	07:11	06:45	05:25	04:26	04:21	05:11	06:17	07:21	07:30
4	15:41	10:19 (1)	16:42	17:48	19:57	21:04	22:04	22:20	21:33	20:15	18:51	16:30
5	09:00	09:55 (1)	08:17	07:08	06:42	05:23	04:24	04:22	05:13	06:19	07:23	07:32
6	15:42	10:19 (1)	16:45	17:50	20:00	21:06	22:06	22:19	21:31	20:12	18:48	16:27
7	08:59	09:56 (1)	08:15	07:05	06:39	05:20	04:23	04:23	05:15	06:21	07:25	07:35
8	15:43	10:19 (1)	16:47	17:53	20:02	21:08	22:07	22:18	21:29	20:09	18:45	16:25
9	08:59	09:56 (1)	08:13	07:03	06:37	05:18	04:22	04:24	05:17	06:23	07:27	07:37
10	15:45	10:19 (1)	16:49	17:55	20:04	21:10	22:09	22:18	21:27	20:06	18:42	16:23
11	08:58	09:57 (1)	08:10	07:00	06:34	05:16	04:21	04:25	05:19	06:25	07:29	07:39
12	15:46	10:21 (1)	16:52	17:57	20:06	21:12	22:10	22:17	21:24	20:04	18:40	16:20
13	08:58	09:57 (1)	08:08	06:57	06:31	05:13	04:20	04:26	05:21	06:28	07:31	07:41
14	15:48	10:20 (1)	16:54	18:00	20:08	21:15	22:11	22:16	21:22	20:01	18:37	16:18
15	08:57	09:58 (1)	08:06	06:55	06:28	05:11	04:19	04:27	05:24	06:30	07:34	07:44
16	15:50	10:20 (1)	16:56	18:02	20:11	21:17	22:12	22:15	21:20	19:58	18:34	16:16
17	08:56	09:58 (1)	08:04	06:52	06:26	05:09	04:19	04:29	05:26	06:32	07:36	07:46
18	15:51	10:21 (1)	16:59	18:04	20:13	21:19	22:13	22:14	21:17	19:55	18:31	16:14
19	08:55	09:59 (1)	08:01	06:49	06:23	05:06	04:18	04:30	05:28	06:34	07:38	07:48
20	15:53	10:21 (1)	17:01	18:06	20:15	21:21	22:14	22:13	21:15	19:52	18:29	16:12
21	08:54	10:00 (1)	07:59	06:46	06:20	05:04	04:17	04:31	05:30	06:36	07:40	07:51
22	15:55	10:22 (1)	17:04	18:09	20:17	21:23	22:15	22:12	21:12	19:50	18:26	16:10
23	08:53	10:00 (1)	07:57	06:44	06:17	05:02	04:17	04:33	05:32	06:38	07:42	07:53
24	15:57	10:21 (1)	17:06	18:11	20:19	21:25	22:16	22:10	21:10	19:47	18:23	16:08
25	08:52	10:02 (1)	07:54	06:41	06:15	05:00	04:16	04:34	05:34	06:40	07:45	07:55
26	15:59	10:21 (1)	17:08	18:13	20:22	21:27	22:17	22:09	21:07	19:44	18:20	16:06
27	08:51	10:02 (1)	07:52	06:38	06:12	04:58	04:16	04:36	05:36	06:42	07:47	07:57
28	16:00	10:21 (1)	17:11	18:15	20:24	21:29	22:18	22:08	21:05	19:41	18:18	16:04
29	08:50	10:04 (1)	07:49	06:35	06:09	04:56	04:15	04:37	05:39	06:44	07:49	08:00
30	16:02	10:21 (1)	17:13	18:18	20:26	21:32	22:19	22:06	21:02	19:38	18:15	16:02
31	08:48	10:04 (1)	07:47	06:32	06:06	04:54	04:15	04:39	05:41	06:47	07:51	08:02
32	16:04	10:20 (1)	17:15	18:20	20:28	21:34	22:19	22:05	21:00	19:36	18:12	16:00
33	08:47	10:06 (1)	07:45	06:30	06:04	04:52	04:15	04:41	05:43	06:49	07:53	08:04
34	16:06	10:19 (1)	17:18	18:22	20:30	21:36	22:20	22:03	20:57	19:33	18:10	15:58
35	08:46	10:08 (1)	07:42	06:27	06:01	04:50	04:15	04:42	05:45	06:51	07:56	08:06
36	16:09	10:19 (1)	17:20	18:24	20:33	21:38	22:20	22:02	20:55	19:30	18:07	15:56
37	08:44	10:10 (1)	07:40	06:24	05:58	04:48	04:15	04:44	05:47	06:53	07:58	08:09
38	16:11	10:17 (1)	17:23	18:26	20:35	21:40	22:21	22:00	20:52	19:27	18:04	15:54
39	08:43	07:37	06:21	05:56	04:46	04:15	04:46	05:49	06:55	08:00	08:11	08:58
40	16:13	17:25	18:29	20:37	21:42	22:21	21:59	20:50	19:24	18:02	15:53	15:29
41	08:41	07:34	06:19	05:53	04:44	04:15	04:48	05:51	06:57	08:02	08:13	08:59
42	16:15	17:27	18:31	20:39	21:44	22:21	21:57	20:47	19:21	17:59	15:51	15:30
43	08:40	07:32	06:16	05:51	04:42	04:15	04:49	05:53	06:59	08:05	08:15	08:59
44	16:17	17:30	18:33	20:42	21:45	22:22	21:55	20:44	19:19	17:57	15:49	15:30
45	08:38	07:29	06:13	05:48	04:40	04:15	04:51	05:56	07:01	08:07	08:17	09:00
46	16:19	17:32	18:35	20:44	21:47	22:22	21:53	20:42	19:16	17:54	15:48	15:31
47	08:36	07:27	06:10	05:45	04:39	04:16	04:53	05:58	07:03	08:09	08:19	09:00
48	16:21	17:34	18:37	20:46	21:49	22:22	21:52	20:39	19:13	17:52	15:46	15:31
49	08:35	07:24	06:07	05:43	04:37	04:16	04:55	06:00	07:06	07:12	08:21	09:00
50	16:24	17:37	18:40	20:48	21:51	22:22	21:50	20:36	19:10	16:49	15:45	15:32
51	08:33	07:21	06:05	05:40	04:35	04:16	04:57	06:02	07:08	07:14	08:23	09:01
52	16:26	17:39	18:42	20:50	21:53	22:22	21:48	20:34	19:07	16:47	15:43	15:33
53	08:31	07:19	06:02	05:38	04:34	04:17	04:59	06:04	07:10	07:16	08:25	09:01
54	16:28	17:41	18:44	20:53	21:55	22:22	21:46	20:31	19:05	16:44	15:42	15:34
55	08:29	07:16	05:59	05:35	04:32	04:18	05:01	06:06	07:12	07:18	08:27	09:01
56	16:31	17:44	18:46	20:55	21:56	22:21	21:44	20:28	19:02	16:42	15:41	15:35
57	08:27	06:56	05:33	04:31	04:18	05:03	06:08	07:14	07:21	08:29	09:42	09:01
58	16:33	19:49	20:57	21:58	22:21	21:42	20:26	18:59	16:39	15:39	10:02	15:36
59	08:25	06:53	05:30	04:29	04:19	05:05	06:11	07:16	07:23	08:31	09:42	09:01
60	16:35	19:51	20:59	22:00	22:21	21:40	20:23	18:56	16:37	15:38	10:02	15:37
61	08:23	06:51	05:28	04:28	05:07	06:13	07:18	07:25	08:33	09:44	10:55	09:01
62	16:38	19:53	20:59	22:01	22:21	21:38	20:20	18:56	16:34	15:34	10:02	15:38
Potential sun hours	227	262	365	429	515	539	539	475	386	321	241	207
Total, worst case	377										122	715
Sun reduction	0.11										0.08	0.06
Oper. time red.	1.00										1.00	1.00
Wind dir. red.	1.00										1.00	1.00
Total reduction	0.11										0.08	0.06
Total, real	41										10	44

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Last time (hh:mm) with flicker	(WTG causing flicker last time)

Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Rīgas iela 82 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (752)
Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:28 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
2	09:00 15:41	08:19 16:42	07:11 17:48	06:45 19:57	05:25 21:04	04:25 22:04	04:21 22:20	05:11 21:33	06:17 20:15	07:21 18:51	07:30 16:30	08:35 15:36
3	09:00 15:42	08:17 16:45	07:08 17:50	06:42 19:59	05:23 21:06	04:24 22:06	04:21 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:37 15:35
4	08:59 15:43	08:15 16:47	07:05 17:53	06:39 20:02	05:20 21:08	04:23 22:07	04:23 22:18	05:15 21:29	06:21 20:09	07:25 18:45	07:34 16:25	08:38 15:34
5	08:59 15:45	08:13 16:49	07:03 17:55	06:37 20:04	05:18 21:10	04:22 22:08	04:24 22:18	05:17 21:26	06:23 20:06	07:27 18:42	07:37 16:23	08:40 15:33
6	08:58 15:46	08:10 16:52	07:00 17:57	06:34 20:06	05:16 21:12	04:21 22:10	04:25 22:17	05:19 21:24	06:25 20:04	07:29 18:39	07:39 16:20	08:42 15:32
7	08:58 15:48	08:08 16:54	06:57 17:59	06:31 20:08	05:13 21:15	04:20 22:11	04:26 22:16	05:21 21:22	06:27 20:01	07:31 18:37	07:41 16:18	08:43 15:32
8	08:57 15:50	08:06 16:56	06:55 18:02	06:28 20:10	05:11 21:17	04:19 22:12	04:27 22:15	05:24 21:19	06:30 19:58	07:34 18:34	07:44 16:16	08:45 15:31
9	08:56 15:51	08:04 16:59	06:52 18:04	06:25 20:13	05:09 21:19	04:19 22:13	04:28 22:14	05:26 21:17	06:32 19:55	07:36 18:31	07:46 16:14	08:46 15:31
10	08:55 15:53	08:01 17:01	06:49 18:06	06:23 20:15	05:06 21:21	04:18 22:14	04:30 22:13	05:28 21:15	06:34 19:52	07:38 18:28	07:48 16:12	08:48 15:30
11	08:54 15:55	07:59 17:04	06:46 18:09	06:20 20:17	05:04 21:23	04:17 22:15	04:31 22:12	05:30 21:12	06:36 19:50	07:40 18:26	07:51 16:10	08:49 15:30
12	08:53 15:57	07:57 17:06	06:44 18:11	06:17 20:19	05:02 21:25	04:17 22:16	04:33 22:10	05:32 21:19	06:38 19:47	07:42 18:23	07:53 16:08	08:50 15:29
13	08:52 15:58	07:54 17:08	06:41 18:13	06:15 20:22	05:00 21:27	04:16 22:17	04:34 22:09	05:34 21:07	06:40 19:44	07:45 18:20	07:55 16:06	08:51 15:29
14	08:51 16:00	07:52 17:11	06:38 18:15	06:12 20:24	04:58 21:29	04:16 22:18	04:36 22:08	05:36 21:05	06:42 19:41	07:47 18:18	07:57 16:04	08:53 15:29
15	08:50 16:02	07:49 17:13	06:35 18:17	06:09 20:26	04:56 21:32	04:15 22:19	04:37 22:06	05:38 21:02	06:44 19:38	07:49 18:15	08:00 16:02	08:54 15:29
16	08:48 16:04	07:47 17:15	06:32 18:20	06:06 20:28	04:54 21:34	04:15 22:19	04:39 22:05	05:41 21:00	06:47 19:36	07:51 18:12	08:02 16:00	08:55 15:29
17	08:47 16:06	07:44 17:18	06:30 18:22	06:04 20:30	04:52 21:36	04:15 22:20	04:41 22:03	05:43 20:57	06:49 19:33	07:53 18:10	08:04 15:58	08:56 15:29
18	08:46 16:08	07:42 17:20	06:27 18:24	06:01 20:33	04:50 21:38	04:15 22:20	04:42 22:02	05:45 20:55	06:51 19:30	07:56 18:07	08:06 15:56	08:56 15:29
19	08:44 16:11	07:39 17:22	06:24 18:26	05:58 20:35	04:48 21:40	04:15 22:21	04:44 22:00	05:47 20:52	06:53 19:27	07:58 18:04	08:09 15:54	08:57 15:29
20	08:43 16:13	07:37 17:25	06:21 18:29	05:56 20:37	04:46 21:42	04:15 22:21	04:46 21:59	05:49 20:50	06:55 19:24	08:00 18:02	08:11 15:53	08:58 15:29
21	08:41 16:15	07:34 17:27	06:18 18:31	05:53 20:39	04:44 21:44	04:15 22:21	04:48 21:57	05:51 20:47	06:57 19:21	08:02 17:59	08:13 15:51	08:59 15:30
22	08:40 16:17	07:32 17:30	06:16 18:33	05:50 20:41	04:42 21:45	04:15 22:22	04:49 21:55	05:53 20:44	06:59 19:19	08:05 17:57	08:15 15:49	08:59 15:30
23	08:38 16:19	07:29 17:32	06:13 18:35	05:48 20:44	04:40 21:47	04:15 22:22	04:51 21:53	05:56 20:42	07:01 19:16	08:07 17:54	08:17 15:48	09:00 15:31
24	08:36 16:21	07:27 17:34	06:10 18:37	05:45 20:46	04:39 21:49	04:15 22:22	04:53 21:52	05:58 20:39	07:03 19:13	08:09 17:52	08:19 15:46	09:00 15:31
25	08:34 16:24	07:24 17:37	06:07 18:40	05:43 20:48	04:37 21:51	04:16 22:22	04:55 21:50	06:00 20:36	07:06 19:10	07:11 16:49	08:21 15:45	09:00 15:32
26	08:33 16:26	07:21 17:39	06:04 18:42	05:40 20:50	04:35 21:53	04:16 22:22	04:57 21:48	06:02 20:34	07:08 19:07	07:14 16:46	08:23 15:43	09:01 15:33
27	08:31 16:28	07:19 17:41	06:02 18:44	05:38 20:53	04:34 21:55	04:17 22:22	04:59 21:46	06:04 20:31	07:10 19:05	07:16 16:44	08:25 15:42	09:01 15:34
28	08:29 16:30	07:16 17:43	05:59 18:46	05:35 20:55	04:32 21:56	04:17 22:21	05:01 21:44	06:06 20:28	07:12 19:02	07:18 16:42	08:27 15:41	09:01 15:35
29	08:27 16:33		05:56 19:48	05:33 20:57	04:31 21:58	04:18 22:21	05:03 21:42	06:08 20:26	07:14 18:59	07:21 16:39	08:29 15:39	09:01 15:36
30	08:25 16:35		05:53 19:51	05:30 20:59	04:29 22:00	04:19 22:21	05:05 21:40	06:11 20:23	07:16 18:56	07:23 16:37	08:31 15:38	09:01 15:37
31	08:23 16:37		05:50 19:53		04:28 22:01		05:07 21:38	06:13 20:20		07:25 16:34		09:01 15:38
Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Rīgas iela 90 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (686)
Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:28 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
2	09:00 15:41	08:19 16:42	07:11 17:48	06:45 19:57	05:25 21:04	04:25 22:04	04:21 22:20	05:11 21:33	06:17 20:15	07:21 18:51	07:30 16:30	08:35 15:36
3	09:00 15:42	08:17 16:45	07:08 17:50	06:42 19:59	05:23 21:06	04:24 22:06	04:22 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:37 15:35
4	08:59 15:43	08:15 16:47	07:05 17:53	06:39 20:02	05:20 21:08	04:23 22:07	04:23 22:18	05:15 21:29	06:21 20:09	07:25 18:45	07:35 16:25	08:38 15:34
5	08:59 15:45	08:13 16:49	07:03 17:55	06:37 20:04	05:18 21:10	04:22 22:08	04:24 22:18	05:17 21:26	06:23 20:06	07:27 18:42	07:37 16:23	08:40 15:33
6	08:58 15:46	08:10 16:52	07:00 17:57	06:34 20:06	05:16 21:12	04:21 22:10	04:25 22:17	05:19 21:24	06:25 20:04	07:29 18:39	07:39 16:20	08:42 15:33
7	08:58 15:48	08:08 16:54	06:57 18:00	06:31 20:08	05:13 21:15	04:20 22:11	04:26 22:16	05:21 21:22	06:28 20:01	07:31 18:37	07:41 16:18	08:43 15:32
8	08:57 15:50	08:06 16:56	06:55 18:02	06:28 20:10	05:11 21:17	04:19 22:12	04:27 22:15	05:24 21:19	06:30 19:58	07:34 18:34	07:44 16:16	08:45 15:31
9	08:56 15:51	08:04 16:59	06:52 18:04	06:25 20:13	05:09 21:19	04:19 22:13	04:28 22:14	05:26 21:17	06:32 19:55	07:36 18:31	07:46 16:14	08:46 15:31
10	08:55 15:53	08:01 17:01	06:49 18:06	06:23 20:15	05:06 21:21	04:18 22:14	04:30 22:13	05:28 21:15	06:34 19:52	07:38 18:29	07:48 16:12	08:48 15:30
11	08:54 15:55	07:59 17:04	06:46 18:09	06:20 20:17	05:04 21:23	04:17 22:15	04:31 22:12	05:30 21:12	06:36 19:50	07:40 18:26	07:51 16:10	08:49 15:30
12	08:53 15:57	07:57 17:06	06:44 18:11	06:17 20:19	05:02 21:25	04:17 22:16	04:33 22:10	05:32 21:19	06:38 19:47	07:42 18:23	07:53 16:08	08:50 15:29
13	08:52 15:58	07:54 17:08	06:41 18:13	06:15 20:22	05:00 21:27	04:16 22:17	04:34 22:09	05:34 21:07	06:40 19:44	07:45 18:20	07:55 16:06	08:51 15:29
14	08:51 16:00	07:52 17:11	06:38 18:15	06:12 20:24	04:58 21:29	04:16 22:18	04:36 22:08	05:36 21:05	06:42 19:41	07:47 18:18	07:57 16:04	08:53 15:29
15	08:50 16:02	07:49 17:13	06:35 18:18	06:09 20:26	04:56 21:32	04:15 22:19	04:37 22:06	05:38 21:02	06:44 19:38	07:49 18:15	08:00 16:02	08:54 15:29
16	08:48 16:04	07:47 17:15	06:32 18:20	06:06 20:28	04:54 21:34	04:15 22:19	04:39 22:05	05:41 21:00	06:47 19:36	07:51 18:12	08:02 16:00	08:55 15:29
17	08:47 16:06	07:45 17:18	06:30 18:22	06:04 20:30	04:52 21:36	04:15 22:20	04:41 22:03	05:43 20:57	06:49 19:33	07:53 18:10	08:04 15:58	08:56 15:29
18	08:46 16:08	07:42 17:20	06:27 18:24	06:01 20:33	04:50 21:38	04:15 22:20	04:42 22:02	05:45 20:55	06:51 19:30	07:56 18:07	08:06 15:56	08:56 15:29
19	08:44 16:11	07:40 17:23	06:24 18:26	05:58 20:35	04:48 21:40	04:15 22:21	04:44 22:00	05:47 20:52	06:53 19:27	07:58 18:04	08:09 15:54	08:57 15:29
20	08:43 16:13	07:37 17:25	06:21 18:29	05:56 20:37	04:46 21:42	04:15 22:21	04:46 21:59	05:49 20:50	06:55 19:24	08:00 18:02	08:11 15:53	08:58 15:29
21	08:41 16:15	07:34 17:27	06:18 18:31	05:53 20:39	04:44 21:44	04:15 22:21	04:48 21:57	05:51 20:47	06:57 19:21	08:02 17:59	08:13 15:51	08:59 15:30
22	08:40 16:17	07:32 17:30	06:16 18:33	05:50 20:41	04:42 21:45	04:15 22:22	04:49 21:55	05:53 20:44	06:59 19:19	08:05 17:57	08:15 15:49	08:59 15:30
23	08:38 16:19	07:29 17:32	06:13 18:35	05:48 20:44	04:40 21:47	04:15 22:22	04:51 21:53	05:56 20:42	07:01 19:16	08:07 17:54	08:17 15:48	09:00 15:31
24	08:36 16:21	07:27 17:34	06:10 18:37	05:45 20:46	04:39 21:49	04:15 22:22	04:53 21:52	05:58 20:39	07:03 19:13	08:09 17:52	08:19 15:46	09:00 15:31
25	08:34 16:24	07:24 17:37	06:07 18:40	05:43 20:48	04:37 21:51	04:16 22:22	04:55 21:50	06:00 20:36	07:06 19:10	07:11 16:49	08:21 15:45	09:00 15:32
26	08:33 16:26	07:21 17:39	06:04 18:42	05:40 20:50	04:35 21:53	04:16 22:22	04:57 21:48	06:02 20:34	07:08 19:07	07:14 16:46	08:23 15:43	09:01 15:33
27	08:31 16:28	07:19 17:41	06:02 18:44	05:38 20:53	04:34 21:55	04:17 22:22	04:59 21:46	06:04 20:31	07:10 19:05	07:16 16:44	08:25 15:42	09:01 15:34
28	08:29 16:31	07:16 17:43	05:59 18:46	05:35 20:55	04:32 21:56	04:17 22:21	05:01 21:44	06:06 20:28	07:12 19:02	07:18 16:42	08:27 15:41	09:01 15:35
29	08:27 16:33		05:56 19:48	05:33 20:57	04:31 21:58	04:18 22:21	05:03 21:42	06:08 20:26	07:14 18:59	07:21 16:39	08:29 15:39	09:01 15:36
30	08:25 16:35		05:53 19:51	05:30 20:59	04:29 22:00	04:19 22:21	05:05 21:40	06:11 20:23	07:16 18:56	07:23 16:37	08:31 15:38	09:01 15:37
31	08:23 16:37		05:50 19:53		04:28 22:01		05:07 21:38	06:13 20:20		07:25 16:34		09:01 15:38
Potential sun hours	227	262	365	429	515	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa
Assumptions for shadow calculations

Shadow receptor: Rukiš i - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (795)
Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June
1	09:01	08:21	08:54 (7)	07:14	07:52 (6)	06:48
	15:40	16:40	16	09:10 (7)	17:46	15
2	09:00	08:19	08:52 (7)	07:11	08:07 (6)	19:55
	15:41	16:42	17	09:09 (7)	17:48	12
3	09:00	08:17	08:52 (7)	07:08	07:55 (6)	19:57
	15:42	16:45	18	09:10 (7)	17:51	7
4	08:59	08:15	08:53 (7)	07:06	08:02 (6)	20:00
	15:44	16:47	17	09:10 (7)	17:53	20:02
5	08:59	08:13	08:53 (7)	07:03	20:04	21:06
	15:45	16:50	16	09:09 (7)	17:55	21:08
6	08:58	08:11	08:54 (7)	07:00	20:04	21:10
	15:47	16:52	15	09:09 (7)	17:57	21:12
7	08:58	08:08	08:55 (7)	06:57	20:06	21:12
	15:48	16:54	12	09:07 (7)	18:00	21:15
8	08:57	08:06	08:58 (7)	06:55	20:08	21:15
	15:50	16:57	8	09:06 (7)	18:02	21:17
9	08:56	08:04		06:52	20:08	21:17
	15:52	16:59		18:04	20:11	21:17
10	08:55	08:01		06:49	20:13	21:19
	15:53	17:01		18:06	20:13	21:19
11	08:54	07:59		06:46	20:15	21:21
	15:55	17:04		18:09	20:15	21:21
12	08:53	07:57		06:44	20:17	21:23
	15:57	17:06		18:11	20:17	21:23
13	08:52	07:54		06:41	20:19	21:25
	15:59	17:09		18:13	20:19	21:25
14	08:51	07:52		06:38	20:22	21:27
	16:01	17:11		18:15	20:22	21:27
15	08:50	07:50		06:35	20:24	21:30
	16:03	17:13		18:18	20:24	21:30
16	08:48	07:47		06:33	20:26	21:32
	16:05	17:16		18:20	20:26	21:32
17	08:47	07:45		06:30	20:28	21:34
	16:07	17:18		18:22	20:28	21:34
18	08:46	07:42		06:27	20:30	21:36
	16:09	17:20		18:24	20:30	21:36
19	08:44	07:40		06:24	20:31	21:38
	16:11	17:23		18:27	20:31	21:38
20	08:43	07:37		06:21	20:33	21:40
	16:13	17:25		18:29	20:33	21:40
21	08:41	07:35		06:19	20:35	21:42
	16:15	17:27		18:31	20:35	21:42
22	08:40	07:32		06:16	20:37	21:44
	16:17	17:30		18:33	20:37	21:44
23	08:38	07:29		06:13	20:39	21:46
	16:19	17:32		18:35	20:39	21:46
24	08:36	07:27		06:10	20:41	21:48
	16:22	17:34		18:38	20:41	21:48
25	08:35	07:24		06:07	20:43	21:50
	16:24	17:37		18:40	20:43	21:50
26	08:33	07:22		06:05	20:45	21:52
	16:26	17:39		18:42	20:45	21:52
27	08:31	07:19		06:02	20:47	21:54
	16:28	17:41		18:44	20:47	21:54
28	08:29	07:16		05:59	20:49	21:56
	16:31	17:44		18:46	20:49	21:56
29	08:27	07:14		05:56	20:51	21:58
	16:33	17:46		18:49	20:51	21:58
30	08:25	07:11		05:53	20:53	22:00
	16:35	17:48		18:51	20:53	22:00
31	08:23	07:08		05:51	20:55	22:02
	16:38	17:51		18:53	20:55	22:02
Potential sun hours	227	262	365	429	515	539
Total, worst case	34	225	114			
Sun reduction	0.11	0.19	0.40			
Oper. time red.	1.00	1.00	1.00			
Wind dir. red.	1.00	1.00	1.00			
Total reduction	0.11	0.19	0.40			
Total, real	4	44	46			

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Last time (hh:mm) with flicker	(WTG causing flicker last time)

Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Rukiš i - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (795)
Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	July	August	September	October	November	December
1	04:20	05:09	06:15	07:19	07:28	08:33
	22:20	21:35	20:18	18:54	16:32	15:37
2	04:21	05:11	06:17	07:21	07:30	08:35
	22:20	21:33	20:15	18:51	16:30	15:36
3	04:22	05:13	06:19	07:23	07:32	08:37 (7)
	22:19	21:31	20:12	18:48	16:27	9 08:36 (7) 15:35
4	04:23	05:15	06:21	07:25	07:35	08:25 (7) 08:38
	22:18	21:29	20:09	18:45	16:25	12 08:37 (7) 15:34
5	04:24	05:18	06:24	07:27	07:37	08:24 (7) 08:40
	22:18	21:27	20:06	18:42	16:23	14 08:38 (7) 15:34
6	04:25	05:20	06:26	07:29	07:39	08:23 (7) 08:42
	22:17	21:24	20:04	18:40	16:21	16 08:39 (7) 15:33
7	04:26	05:22	06:28	07:32	07:42	08:23 (7) 08:43
	22:16	21:22	20:01	18:37	16:18	16 08:39 (7) 15:32
8	04:27	05:24	06:30	07:34	07:44	08:23 (7) 08:45
	22:15	21:20	19:58	18:34	16:16	17 08:40 (7) 15:31
9	04:29	05:26	06:32	07:36	07:46	08:22 (7) 08:46
	22:14	21:17	19:55	18:31	16:14	18 08:40 (7) 15:31
10	04:30	05:28	06:34	07:38	08:32 (6) 07:48	08:25 (7) 08:48
	22:13	21:15	19:53	18:29	2 08:34 (6) 16:12	15 08:40 (7) 15:30
11	04:32	05:30	06:36	07:40	08:28 (6) 07:51	08:27 (7) 08:49
	22:12	21:12	19:50	18:26	11 08:39 (6) 16:10	13 08:40 (7) 15:30
12	04:33	05:32	06:38	07:42	08:26 (6) 07:53	08:30 (7) 08:50
	22:10	21:10	19:47	18:23	14 08:40 (6) 16:08	10 08:40 (7) 15:30
13	04:34	05:34	06:40	07:45	08:24 (6) 07:55	08:32 (7) 08:51
	22:09	21:07	19:44	18:21	16 08:40 (6) 16:06	7 08:39 (7) 15:29
14	04:36	05:37	06:43	07:47	08:24 (6) 07:58	08:35 (7) 08:53
	22:08	21:05	19:41	18:18	17 08:41 (6) 16:04	4 08:39 (7) 15:29
15	04:38	05:39	06:45	07:49	08:23 (6) 08:00	08:54
	22:06	21:02	19:39	18:15	18 08:41 (6) 16:02	15:29
16	04:39	05:41	06:47	07:51	08:22 (6) 08:02	08:55
	22:05	21:00	19:36	18:13	19 08:41 (6) 16:00	15:29
17	04:41	05:43	06:49	07:54	08:25 (6) 08:04	08:56
	22:04	20:57	19:33	18:10	16 08:41 (6) 15:58	15:29
18	04:43	05:45	06:51	07:56	08:27 (6) 08:06	08:57
	22:02	20:55	19:30	18:07	13 08:40 (6) 15:56	15:29
19	04:44	05:47	06:53	07:58	08:29 (6) 08:09	08:57
	22:00	20:52	19:27	18:05	10 08:39 (6) 15:55	15:29
20	04:46	05:49	06:55	08:00	08:32 (6) 08:11	08:58
	21:59	20:50	19:24	18:02	6 08:38 (6) 15:53	15:30
21	04:48	05:52	06:57	08:03	08:34 (6) 08:13	08:59
	21:57	20:47	19:22	8 07:45 (5) 17:59	2 08:36 (6) 15:51	15:30
22	04:50	05:54	06:59	07:35 (5) 08:05	08:15	08:59
	21:55	20:44	19:19	12 07:47 (5) 17:57	15:50	15:31
23	04:52	05:56	07:02	07:33 (5) 08:07	08:17	09:00
	21:53	20:42	19:16	14 07:47 (5) 17:54	15:48	15:31
24	04:53	05:58	07:04	07:33 (5) 08:09	08:19	09:00
	21:52	20:39	19:13	15 07:48 (5) 17:52	15:46	15:32
25	04:55	06:00	07:06	07:35 (5) 07:12	08:21	09:00
	21:50	20:36	19:10	12 07:47 (5) 16:49	15:45	15:32
26	04:57	06:02	07:08	07:37 (5) 07:14	08:23	09:01
	21:48	20:34	19:08	10 07:47 (5) 16:47	15:44	15:33
27	04:59	06:04	07:10	07:40 (5) 07:16	08:25	09:01
	21:46	20:31	19:05	7 07:47 (5) 16:44	15:42	15:34
28	05:01	06:06	07:12	07:42 (5) 07:18	08:27	09:01
	21:44	20:28	19:02	4 07:46 (5) 16:42	15:41	15:35
29	05:03	06:09	07:14	07:21	08:29	09:01
	21:42	20:26	18:59	16:39	15:40	15:36
30	05:05	06:11	07:16	07:23	08:31	09:01
	21:40	20:23	18:56	16:37	15:39	15:37
31	05:07	06:13		07:25		09:01
	21:38	20:20		16:35		15:38
Potential sun hours	538	474	386	321	241	207
Total, worst case			82	144	151	
Sun reduction			0.46	0.28	0.08	
Oper. time red.			1.00	1.00	1.00	
Wind dir. red.			1.00	1.00	1.00	
Total reduction			0.46	0.28	0.08	
Total, real			38	41	12	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Saulieš i - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (782)
 Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January		February		March		April	May	June
1	09:01	09:43 (7)	08:21		07:14	07:47 (9)	06:48	05:28	04:27
	15:40	8	09:51 (7)	16:40		17:46	14	08:01 (9)	19:55
2	09:00	09:43 (7)	08:19		07:11	07:48 (9)	06:45	05:25	04:26
	15:41	9	09:52 (7)	16:42	2	08:53 (8)	17:48	11	07:59 (9)
3	09:00	09:42 (7)	08:17		07:08	08:49 (6)	07:08	06:42	05:23
	15:42	10	09:52 (7)	16:45	6	08:55 (8)	17:51	5	07:56 (9)
4	08:59	09:41 (7)	08:15		07:06	07:33 (5)	06:40	05:21	04:23
	15:44	12	09:53 (7)	16:47	9	08:55 (6)	17:53	4	07:37 (5)
5	08:59	09:40 (7)	08:13		07:03	07:30 (5)	06:37	05:18	04:22
	15:45	13	09:53 (7)	16:49	12	08:56 (6)	17:55	8	07:38 (5)
6	08:58	09:40 (7)	08:11		07:00	07:27 (5)	06:34	05:16	04:21
	15:47	15	09:55 (7)	16:52	16	08:58 (6)	17:57	12	07:39 (5)
7	08:58	09:38 (7)	08:08		06:57	07:24 (5)	06:31	05:13	04:20
	15:48	17	09:55 (7)	16:54	19	08:58 (6)	18:00	15	07:39 (5)
8	08:57	09:37 (7)	08:06		06:55	07:21 (5)	06:28	05:11	04:20
	15:50	18	09:57 (7)	16:57	21	08:59 (6)	18:02	18	07:39 (5)
9	08:56	09:37 (7)	08:04		06:52	07:20 (5)	06:26	05:09	04:19
	15:51	19	09:56 (7)	16:59	21	08:59 (6)	18:04	19	07:39 (5)
10	08:55	09:38 (7)	08:01		06:49	07:20 (5)	06:23	05:07	04:18
	15:53	19	09:57 (7)	17:01	22	09:00 (6)	18:06	19	07:39 (5)
11	08:54	09:38 (7)	07:59		06:46	07:20 (5)	06:20	05:04	04:17
	15:55	20	09:58 (7)	17:04	21	08:59 (6)	18:09	18	07:38 (5)
12	08:53	09:38 (7)	07:57		06:44	07:20 (5)	06:17	05:02	04:17
	15:57	19	09:57 (7)	17:06	22	09:00 (6)	18:11	16	07:36 (5)
13	08:52	09:39 (7)	07:54		06:41	07:21 (5)	06:15	05:00	04:16
	15:59	19	09:58 (7)	17:09	21	08:59 (6)	18:13	14	07:35 (5)
14	08:51	09:39 (7)	07:52		06:38	07:23 (5)	06:12	04:58	04:16
	16:01	19	09:58 (7)	17:11	19	08:58 (6)	18:15	9	07:32 (5)
15	08:50	09:40 (7)	07:50		06:35	08:40 (6)	06:09	04:56	04:16
	16:03	19	09:59 (7)	17:13	17	08:57 (6)	18:18	20:26	21:32
16	08:48	09:40 (7)	07:47		06:33	08:41 (6)	06:07	04:54	04:15
	16:05	18	09:58 (7)	17:16	15	08:56 (6)	18:20	20:28	21:34
17	08:47	09:41 (7)	07:45		06:30	08:43 (6)	06:04	04:52	04:15
	16:07	17	09:58 (7)	17:18	10	08:53 (6)	18:22	20:31	21:36
18	08:46	09:42 (7)	07:42		06:27	08:44 (6)	06:01	04:50	04:15
	16:09	17	09:59 (7)	17:20		18:24	20:33	21:38	22:20
19	08:44	09:43 (7)	07:40		06:24	08:45 (6)	05:59	04:48	04:15
	16:11	15	09:58 (7)	17:23		18:27	20:35	21:40	22:21
20	08:43	09:44 (7)	07:37		06:21	08:46 (6)	05:56	04:46	04:15
	16:13	14	09:58 (7)	17:25		18:29	20:37	21:42	22:21
21	08:41	09:45 (7)	07:35		06:19	08:47 (6)	05:53	04:44	04:15
	16:15	12	09:57 (7)	17:27		18:31	20:39	21:44	22:22
22	08:40	09:47 (7)	07:32		06:16	08:00 (9)	05:51	04:42	04:15
	16:17	8	09:55 (7)	17:30	1	08:01 (9)	20:42	21:46	22:22
23	08:38	09:50 (7)	07:29		06:13	07:57 (9)	05:48	04:41	04:15
	16:19	2	09:52 (7)	17:32	5	08:02 (9)	20:44	21:47	22:22
24	08:36		07:27		06:10	07:55 (9)	05:45	04:39	04:16
	16:22		17:34	8	08:03 (9)	18:38	20:46	21:49	22:22
25	08:35		07:24		06:07	07:52 (9)	05:43	04:37	04:16
	16:24		17:37	11	08:03 (9)	18:40	20:48	21:51	22:22
26	08:33		07:22		06:05	07:49 (9)	05:40	04:36	04:17
	16:26		17:39	14	08:03 (9)	18:42	20:50	21:53	22:22
27	08:31		07:19		06:02	07:46 (9)	05:38	04:34	04:17
	16:28		17:41	16	08:02 (9)	18:44	20:53	21:55	22:22
28	08:29		07:16		05:59	07:47 (9)	05:35	04:32	04:18
	16:31		17:44	15	08:02 (9)	18:46	20:55	21:56	22:21
29	08:27				06:56		05:33	04:31	04:18
	16:33				19:49		20:57	21:58	22:21
30	08:25				06:53		05:30	04:30	04:19
	16:35				19:51		20:59	22:00	22:21
31	08:23				06:51			04:28	
	16:38				19:53			22:01	
Potential sun hours	227		262		365		429	515	539
Total, worst case		339		323		182			
Sun reduction		0.11		0.19		0.40			
Oper. time red.		1.00		1.00		1.00			
Wind dir. red.		1.00		1.00		1.00			
Total reduction		0.11		0.19		0.40			
Total, real		37		63		73			

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Sauliešis - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (782)
Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	July	August	September	October	November	December
1	04:20	05:09	06:15	07:19	08:00 (5)	07:28
	22:20	21:35	20:17	18:54	15	08:15 (5)
2	04:21	05:11	06:17	07:21	07:58 (5)	07:30
	22:20	21:33	20:15	18:51	17	08:15 (5)
3	04:22	05:13	06:19	07:23	07:58 (5)	07:32
	22:19	21:31	20:12	18:48	18	08:16 (5)
4	04:23	05:15	06:21	07:25	07:57 (5)	07:35
	22:18	21:29	20:09	18:45	19	08:16 (5)
5	04:24	05:17	06:23	07:27	07:57 (5)	07:37
	22:18	21:27	20:06	18:42	19	08:16 (5)
6	04:25	05:20	06:26	07:29	07:59 (5)	07:39
	22:17	21:24	20:04	18:40	16	08:15 (5)
7	04:26	05:22	06:28	07:32	08:01 (5)	07:42
	22:16	21:22	20:01	18:37	13	08:14 (5)
8	04:27	05:24	06:30	07:34	08:04 (5)	07:44
	22:15	21:20	19:58	18:34	10	08:14 (5)
9	04:29	05:26	06:32	07:36	08:06 (5)	07:46
	22:14	21:17	19:55	18:31	6	08:12 (5)
10	04:30	05:28	06:34	07:38	08:08 (5)	07:48
	22:13	21:15	19:53	18:29	2	08:10 (5)
11	04:31	05:30	06:36	07:40	08:24 (9)	07:51
	22:12	21:12	19:50	18:26	8	08:32 (9)
12	04:33	05:32	06:38	07:42	08:22 (9)	07:53
	22:10	21:10	19:47	18:23	12	08:34 (9)
13	04:34	05:34	06:40	07:45	08:20 (9)	07:55
	22:09	21:07	19:44	18:21	14	08:34 (9)
14	04:36	05:37	06:42	07:47	08:19 (9)	07:58
	22:08	21:05	19:41	18:18	15	08:34 (9)
15	04:38	05:39	06:45	07:49	08:20 (9)	08:00
	22:06	21:02	19:38	18:15	15	08:35 (9)
16	04:39	05:41	06:47	07:51	08:22 (9)	08:02
	22:05	21:00	19:36	18:13	13	08:35 (9)
17	04:41	05:43	06:49	07:54	08:25 (9)	08:04
	22:04	20:57	19:33	18:10	10	08:35 (9)
18	04:43	05:45	06:51	07:56	08:27 (9)	08:06
	22:02	20:55	19:30	18:07	7	08:34 (9)
19	04:44	05:47	06:53	07:58	08:29 (9)	08:09
	22:00	20:52	19:27	18:05	3	08:32 (9)
20	04:46	05:49	06:55	08:00		08:11
	21:59	20:50	19:24	18:02		15:53
21	04:48	05:51	06:57	08:03		08:13
	21:57	20:47	19:22	17:59		15:51
22	04:50	05:54	06:59	08:05		08:15
	21:55	20:44	19:19	17:57		15:50
23	04:51	05:56	07:01	08:07		08:17
	21:53	20:42	19:16	17:54		15:48
24	04:53	05:58	07:04	08:09	09:16 (6)	08:19
	21:52	20:39	19:13	17:52	6	09:22 (6)
25	04:55	06:00	07:06	07:12	08:12 (6)	08:21
	21:50	20:36	19:10	16:49	12	08:24 (6)
26	04:57	06:02	07:08	07:14	08:10 (6)	08:23
	21:48	20:34	19:08	16:47	15	08:25 (6)
27	04:59	06:04	07:10	07:16	08:09 (6)	08:25
	21:46	20:31	19:05	16:44	18	08:27 (6)
28	05:01	06:06	07:12	07:18	08:08 (6)	08:27
	21:44	20:28	19:02	16:42	19	08:27 (6)
29	05:03	06:09	07:14	07:21	08:08 (6)	08:29
	21:42	20:26	18:59	7	08:12 (5)	16:39
30	05:05	06:11	07:16	07:23	08:07 (6)	08:31
	21:40	20:23	18:56	12	08:14 (5)	16:37
31	05:07	06:13		07:25	08:07 (6)	
	21:38	20:20		16:34	22	08:29 (6)
Potential sun hours	538	474	386	321	241	207
Total, worst case			19	365	305	218
Sun reduction			0.46	0.28	0.08	0.06
Oper. time red.			1.00	1.00	1.00	1.00
Wind dir. red.			1.00	1.00	1.00	1.00
Total reduction			0.46	0.28	0.08	0.06
Total, real			9	103	24	13

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment
Vilandes 3-6
LV-1010 Riga
0037167242411
Baiba / baiba.ozolina@environment.lv
Calculated:
15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Saulites - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (456)
Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) []

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
0.80 1.82 4.75 6.09 9.67 10.05 8.16 7.72 5.94 2.93 0.63 0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:00 15:39 20	14:32 (4) 14:32 (4) 16:40	08:21 16:03 (2) 17:46	16:01 (2) 16:03 (2) 17:46	06:48 19:55 21:01	05:27 22:02 22:20	04:27 22:20 21:35	04:20 21:35 20:17	05:09 20:17 18:53	06:15 16:32 16:30	07:18 15:49 (2) 15:26 (2)	07:18 15:37 14:38 (4)
2	09:00 15:40 20	14:32 (4) 14:52 (4) 16:42	08:19 16:06 (2) 17:48	16:00 (2) 16:06 (2) 17:48	06:45 19:57 21:03	05:25 22:04 22:20	04:25 22:19 21:33	04:21 22:19 21:33	05:11 20:14 18:50	06:17 16:29 16:29	07:20 15:49 (2) 15:26 (2)	07:20 15:36 14:38 (4)
3	09:00 15:42 20	14:34 (4) 14:54 (4) 16:44	08:17 16:09 (2) 17:50	15:59 (2) 16:09 (2) 17:50	06:42 19:59 21:06	05:23 22:05 22:21	04:24 22:19 21:31	04:21 22:19 21:31	05:13 20:12 18:48	06:19 16:27 16:27	07:23 15:26 (2) 15:48 (2)	07:23 15:36 14:39 (4)
4	08:59 15:43 20	14:34 (4) 14:54 (4) 16:47	08:15 16:11 (2) 17:53	15:58 (2) 16:11 (2) 17:53	06:39 20:01 21:08	05:20 22:07 22:22	04:23 22:18 21:28	04:22 22:18 21:28	05:15 20:09 18:45	06:21 16:25 16:25	07:25 15:26 (2) 15:49 (2)	07:25 15:34 14:39 (4)
5	08:59 15:45 20	14:34 (4) 14:54 (4) 16:49	08:12 16:14 (2) 17:55	15:58 (2) 16:14 (2) 17:55	06:36 20:04 21:10	05:18 22:08 22:23	04:22 22:17 21:26	04:24 22:17 21:26	05:17 20:06 18:42	06:23 16:22 16:22	07:27 15:26 (2) 15:46 (2)	07:27 15:33 14:40 (4)
6	08:58 15:46 21	14:35 (4) 14:55 (4) 16:52	08:10 16:16 (2) 17:57	15:57 (2) 16:16 (2) 17:57	06:34 20:06 21:12	05:15 22:09 22:24	04:21 22:16 21:24	04:25 22:16 21:24	05:19 20:03 18:39	06:25 16:20 16:20	07:29 15:29 (2) 15:44 (2)	07:29 15:32 14:41 (4)
7	08:57 15:48 20	14:35 (4) 14:55 (4) 16:54	08:08 16:19 (2) 17:59	15:57 (2) 16:19 (2) 17:59	06:31 20:08 21:14	05:13 22:11 22:26	04:20 22:11 21:26	04:26 22:22 21:22	05:21 20:01 18:37	06:27 16:18 16:18	07:31 15:29 (2) 15:41 (2)	07:31 15:32 14:41 (4)
8	08:57 15:49 19	14:36 (4) 14:55 (4) 16:56	08:06 16:19 (2) 18:02	15:56 (2) 16:19 (2) 18:02	06:28 20:10 21:16	05:11 22:12 22:27	04:19 22:12 21:25	04:27 22:15 21:19	05:23 19:58 18:34	06:29 16:16 16:16	07:33 15:29 (2) 15:39 (2)	07:33 15:34 14:42 (4)
9	08:56 15:51 20	14:36 (4) 14:56 (4) 16:59	08:03 16:19 (2) 18:04	15:57 (2) 16:19 (2) 18:04	06:25 20:12 21:19	05:09 22:13 22:28	04:18 22:14 21:17	04:28 22:14 21:17	05:26 19:55 18:31	06:32 16:14 16:14	07:36 15:37 (2) 15:32 (2)	07:36 15:30 14:42 (4)
10	08:55 15:53 19	14:37 (4) 14:56 (4) 17:01	08:01 16:19 (2) 18:06	15:56 (2) 16:19 (2) 18:06	06:23 20:15 21:21	05:06 22:24 22:29	04:18 22:12 21:14	04:30 22:12 21:14	05:28 19:52 18:28	06:34 16:12 16:12	07:38 15:34 (2) 15:34 (2)	07:38 15:20 14:43 (4)
11	08:54 15:55 19	14:37 (4) 14:56 (4) 17:03	07:59 16:19 (2) 18:08	15:57 (2) 16:19 (2) 18:08	06:20 20:17 21:23	05:04 22:25 22:30	04:17 22:11 21:12	04:31 22:11 21:12	05:30 19:49 18:26	06:36 16:09 16:09	07:40 15:30 15:30	07:40 14:42 (4) 14:42 (4)
12	08:53 15:56 18	14:38 (4) 14:56 (4) 17:06	07:56 16:18 (2) 18:11	15:57 (2) 16:18 (2) 18:11	06:17 20:19 21:25	05:02 22:26 22:31	04:17 22:10 21:10	04:33 22:10 21:10	05:32 19:47 18:23	06:38 16:07 16:07	07:42 15:29 (2) 15:29 (2)	07:42 14:43 (4) 14:43 (4)
13	08:52 15:58 18	14:38 (4) 14:56 (4) 17:08	07:54 16:18 (2) 18:13	15:58 (2) 16:18 (2) 18:13	06:14 20:21 21:27	05:00 22:27 22:32	04:16 22:09 21:07	04:34 22:09 21:07	05:34 19:44 18:20	06:40 16:05 16:05	07:44 15:29 (2) 15:29 (2)	07:44 14:42 (4) 14:42 (4)
14	08:51 16:00 16	14:40 (4) 14:56 (4) 17:11	07:52 16:17 (2) 18:15	15:59 (2) 16:17 (2) 18:15	06:12 20:24 21:29	04:58 22:18 22:33	04:16 22:08 21:05	04:36 22:08 21:05	05:36 19:41 18:18	06:42 16:03 16:03	07:47 15:29 (2) 15:29 (2)	07:47 14:42 (4) 14:42 (4)
15	08:49 16:02 15	14:40 (4) 14:55 (4) 17:13	07:49 16:15 (2) 18:17	16:00 (2) 16:15 (2) 18:17	06:09 20:26 21:31	04:56 22:26 22:31	04:15 22:06 21:02	04:37 22:06 21:02	05:38 19:38 18:15	06:44 16:02 16:02	07:49 15:29 (2) 15:29 (2)	07:49 14:42 (4) 14:42 (4)
16	08:48 16:04 14	14:42 (4) 14:56 (4) 17:15	07:47 16:16 (2) 18:12	16:02 (2) 16:16 (2) 18:12	06:06 20:28 21:33	04:53 22:19 22:05	04:15 22:05 21:00	04:39 22:05 21:00	05:40 19:35 18:12	06:46 16:00 16:00	07:51 15:29 (2) 15:29 (2)	07:51 14:41 (4) 14:41 (4)
17	08:47 16:06 12	14:43 (4) 14:55 (4) 17:18	07:44 16:14 (2) 18:18	16:04 (2) 16:14 (2) 18:18	06:04 20:30 21:35	04:51 22:20 22:03	04:15 22:03 21:03	04:40 22:03 21:03	05:43 19:33 18:10	06:48 16:06 16:06	07:53 15:29 (2) 15:29 (2)	07:53 14:42 (4) 14:42 (4)
18	08:45 16:08 8	14:45 (4) 14:53 (4) 17:20	07:42 16:14 (2) 18:24	16:06 (2) 16:14 (2) 18:24	06:01 20:32 21:37	04:49 22:20 22:02	04:15 22:02 21:04	04:42 22:02 21:04	05:45 19:30 18:07	06:51 16:08 16:08	07:55 15:29 (2) 15:29 (2)	07:55 14:42 (4) 14:42 (4)
19	08:44 16:10 2	14:49 (4) 14:51 (4) 17:22	07:39 16:16 (2) 18:26	16:04 (2) 16:16 (2) 18:26	05:58 20:35 21:39	04:48 22:21 22:00	04:15 22:00 21:05	04:44 22:00 21:05	05:47 19:27 18:04	06:53 16:10 16:10	07:58 15:29 (2) 15:29 (2)	07:58 14:42 (4) 14:42 (4)
20	08:42 16:13 08:41	14:51 (4) 17:25 07:34	17:22 16:18 (2) 18:31	16:14 (2) 16:18 (2) 18:31	05:56 20:37 21:41	04:46 22:21 22:00	04:15 22:00 21:05	04:46 22:00 21:05	05:49 19:24 18:02	06:55 16:13 16:13	08:00 15:29 (2) 15:29 (2)	08:00 14:42 (4) 14:42 (4)
21	08:41 16:15 08:39	17:27 07:32 17:29	17:32 16:16 (2) 18:33	16:14 (2) 16:16 (2) 18:33	05:53 20:39 21:43	04:44 22:21 22:00	04:15 22:00 21:05	04:47 22:00 21:05	05:51 19:21 18:04	06:57 16:15 16:15	08:02 15:29 (2) 15:29 (2)	08:02 14:42 (4) 14:42 (4)
22	08:39 16:17 08:38	17:32 17:29 17:32	17:32 16:16 (2) 18:33	16:14 (2) 16:16 (2) 18:33	05:50 20:41 21:45	04:42 22:21 22:00	04:15 22:00 21:05	04:49 22:00 21:05	05:53 19:18 18:04	06:59 16:17 16:17	08:04 15:29 (2) 15:29 (2)	08:04 14:42 (4) 14:42 (4)
23	08:38 16:19 08:36	17:32 17:26 17:34	17:32 16:16 (2) 18:33	16:14 (2) 16:16 (2) 18:33	05:48 20:43 21:47	04:40 22:22 22:00	04:15 22:00 21:05	04:51 22:00 21:05	05:55 19:16 18:04	07:01 16:19 16:19	08:07 15:29 (2) 15:29 (2)	08:07 14:42 (4) 14:42 (4)
24	08:36 16:21 08:34	17:32 17:26 17:34	17:32 16:16 (2) 18:33	16:14 (2) 16:16 (2) 18:33	05:45 20:46 21:49	04:38 22:22 22:00	04:15 22:00 21:05	04:53 22:00 21:05	05:58 19:13 18:04	07:03 16:21 16:21	08:09 15:29 (2) 15:29 (2)	08:09 14:42 (4) 14:42 (4)
25	08:34 16:24 08:32	17:34 17:36 17:21	17:34 16:16 (2) 18:33	16:14 (2) 16:16 (2) 18:33	05:43 20:48 21:51	04:37 22:22 22:00	04:16 22:00 21:05	04:55 22:00 21:05	06:00 19:10 18:04	07:05 16:24 16:24	07:11 15:29 (2) 15:29 (2)	07:11 14:42 (4) 14:42 (4)
26	08:32 16:26 08:31	17:36 17:39 17:19	17:36 16:16 (2) 18:33	16:14 (2) 16:16 (2) 18:33	05:40 20:50 21:53	04:35 22:21 22:00	04:16 22:00 21:05	04:57 22:00 21:05	06:02 19:07 18:04	07:08 16:46 16:46	07:14 15:29 (2) 15:29 (2)	07:14 14:42 (4) 14:42 (4)
27	08:31 16:28 08:29	17:39 17:41 17:16	17:39 16:16 (2) 18:33	16:14 (2) 16:16 (2) 18:33	05:37 20:52 21:55	04:34 22:21 22:00	04:17 22:00 21:05	04:59 22:00 21:05	06:04 19:04 18:04	07:10 16:44 16:44	07:16 15:29 (2) 15:29 (2)	07:16 14:42 (4) 14:42 (4)
28	08:29 16:30 08:27	17:41 17:43 17:33	17:41 16:16 (2) 18:33	16:14 (2) 16:16 (2) 18:33	05:35 20:55 21:58	04:32 22:21 22:00	04:17 22:00 21:05	04:59 22:00 21:05	06:06 19:02 18:04	07:12 16:41 16:41	07:18 15:29 (2) 15:29 (2)	07:18 14:42 (4) 14:42 (4)
29	08:27 16:33 08:25	17:43 17:43 17:35	17:43 16:16 (2) 18:33	16:14 (2) 16:16 (2) 18:33	05:32 20:57 21:59	04:31 22:21 22:00	04:18 22:00 21:05	05:03 22:00 21:05	06:08 18:59 18:59	07:14 16:39 16:39	07:20 15:29 (2) 15:29 (2)	07:20 14:42 (4) 14:42 (4)
30	08:25 16:35 08:23	17:43 17:43 17:37	17:43 16:16 (2) 18:33	16:14 (2) 16:16 (2) 18:33	05:30 20:59 21:59	04:30 22:21 22:00	04:19 22:00 21:05	05:05 22:00 21:05	06:10 18:56 18:56	07:16 16:37 16:37	07:23 15:29 (2) 15:29 (2)	07:23 14:42 (4) 14:42 (4)
31	08:23 16:37 227	17:43 17:43 17:37	17:43 16:16 (2) 18:33	16:14 (2) 16:16 (2) 18:33	05:28 20:59 21:59	04:28 22:21 22:00	04:19 22:00 21:05	05:07 22:00 21:05	06:13 18:56 18:56	07:16 16:34 16:34	07:25 15:29 (2) 15:29 (2)	07:25 14:42 (4) 14:42 (4)
Potential sun hours	227	262	365	429	515	539	538	474	386	321	241	207
Total, worst case	321	268								118	262	536
Sun reduction	0.11	0.19								0.28	0.08	0.06
Oper. time red.	1.00	1.00								1.00	1.00	1.00
Wind dir. red.	1.00	1.00								1.00	1.00	1.00
Total reduction	0.11	0.19								0.28	0.08	0.06
Total, real	35	52								33	21	33

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Last time (hh:mm) with flicker	(WTG causing flicker last time)
	Minutes with flicker		

Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Sedaskalni (94880100120001) - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (496) Sunshine probability S (Average daily sunshine hours) []

Assumptions for shadow calculations

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
0.80 1.82 4.75 6.09 9.67 10.05 8.16 7.72 5.94 2.93 0.63 0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June
1	09:00	08:21	07:13	06:47	05:27	04:27
	15:39	16:40	17:46	19:55	21:01	22:02
2	09:00	08:19	07:11	06:45	05:25	04:25
	15:40	16:42	17:48	19:57	21:03	22:04
3	08:59	08:17	07:08	06:42	05:23	04:24
	15:42	16:44	17:50	19:59	21:05	22:05
4	08:59	08:14	07:05	06:39	05:20	04:23
	15:43	16:47	17:52	20:01	21:08	22:07
5	08:58	08:12	07:02	06:36	05:18	04:22
	15:45	16:49	17:55	20:04	21:10	22:08
6	08:58	08:10	07:00	06:34	05:15	04:21
	15:46	16:52	17:57	20:06	21:12	22:09
7	08:57	08:08	06:57	06:31	05:13	04:20
	15:48	16:54	17:59	20:08	21:14	22:11
8	08:56	08:06	06:54	06:28	05:11	04:19
	15:49	16:56	18:02	20:10	21:16	22:12
9	08:56	08:03	06:52	06:25	05:09	04:18
	15:51	16:59	18:04	20:12	21:19	22:13
10	08:55	08:01	06:49	06:23	05:06	04:18
	15:53	17:01	18:06	20:15	21:21	22:14
11	08:54	07:59	06:46	06:20	05:04	04:17
	15:55	17:03	18:08	20:17	21:23	22:15
12	08:53	07:56	06:43	06:17	05:02	04:17
	15:56	17:06	18:11	20:19	21:25	22:16
13	08:52	07:54	06:41	17:40 (2) 06:14	05:00	04:16
	15:58	17:08	18:13	4 17:44 (2) 20:21	21:27	22:17
14	08:51	07:52	16:37 (4) 06:38	17:39 (2) 06:12	04:58	04:16
	16:00	17:11	1 16:38 (4) 18:15	7 17:46 (2) 20:23	21:29	22:18
15	08:49	07:49	16:35 (4) 06:35	17:38 (2) 06:09	04:56	04:15
	16:02	17:13	5 16:40 (4) 18:17	10 17:48 (2) 20:26	21:31	22:18
16	08:48	07:47	16:35 (4) 06:32	17:37 (2) 06:06	04:53	04:15
	16:04	17:15	8 16:43 (4) 18:20	13 17:50 (2) 20:28	21:33	22:19
17	08:47	07:44	16:34 (4) 06:29	17:37 (2) 06:04	04:51	04:15
	16:06	17:18	11 16:45 (4) 18:22	16 17:53 (2) 20:30	21:35	22:19
18	08:45	15:26 (11) 07:42	16:33 (4) 06:27	17:37 (2) 06:01	04:49	04:15
	16:08	1 15:27 (11) 17:20	15 16:48 (4) 18:24	18 17:55 (2) 20:32	21:37	22:20
19	08:44	15:26 (11) 07:39	16:33 (4) 06:24	17:37 (2) 05:58	04:48	04:15
	16:10	3 15:29 (11) 17:22	18 16:51 (4) 18:26	17 17:54 (2) 20:35	21:39	22:20
20	08:42	15:27 (11) 07:37	16:33 (4) 06:21	17:37 (2) 05:56	04:46	04:15
	16:13	6 15:33 (11) 17:25	19 16:52 (4) 18:28	15 17:52 (2) 20:37	21:41	22:21
21	08:41	15:27 (11) 07:34	16:33 (4) 06:18	17:38 (2) 05:53	04:44	04:15
	16:15	8 15:35 (11) 17:27	18 16:51 (4) 18:31	13 17:51 (2) 20:39	21:43	22:21
22	08:39	15:27 (11) 07:32	16:34 (4) 06:15	17:40 (2) 05:50	04:42	04:15
	16:17	10 15:37 (11) 17:29	17 16:51 (4) 18:33	8 17:48 (2) 20:41	21:45	22:21
23	08:38	15:27 (11) 07:29	16:35 (4) 06:13	05:48	04:40	04:15
	16:19	13 15:40 (11) 17:32	14 16:49 (4) 18:35	20:43	21:47	22:21
24	08:36	15:28 (11) 07:26	16:36 (4) 06:10	05:45	04:38	04:15
	16:21	15 15:43 (11) 17:34	12 16:48 (4) 18:37	20:46	21:49	22:21
25	08:34	15:28 (11) 07:24	16:40 (4) 06:07	05:43	04:37	04:16
	16:24	16 15:44 (11) 17:36	5 16:45 (4) 18:39	20:48	21:51	22:21
26	08:32	15:29 (11) 07:21	06:04	05:40	04:35	04:16
	16:26	15 15:44 (11) 17:39	18:42	20:50	21:52	22:21
27	08:31	15:29 (11) 07:19	06:01	05:37	04:34	04:17
	16:28	13 15:42 (11) 17:41	18:44	20:52	21:54	22:21
28	08:29	15:31 (11) 07:16	05:59	05:35	04:32	04:17
	16:30	11 15:42 (11) 17:43	18:46	20:54	21:56	22:21
29	08:27	15:33 (11)	06:56	05:32	04:31	04:18
	16:33	8 15:41 (11)	19:48	20:57	21:58	22:21
30	08:25		06:53	05:30	04:29	04:19
	16:35		19:50	20:59	21:59	22:20
31	08:23		06:50		04:28	
	16:37		19:53		22:01	
Potential sun hours	227	262	365	429	515	539
Total, worst case	119	143	121			
Sun reduction	0.11	0.19	0.40			
Oper. time red.	1.00	1.00	1.00			
Wind dir. red.	1.00	1.00	1.00			
Total reduction	0.11	0.19	0.40			
Total, real	13	28	49			

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Last time (hh:mm) with flicker	(WTG causing flicker last time)
	Minutes with flicker		

Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Sedaskalni (94880100120001) - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (496) Sunshine probability S (Average daily sunshine hours) []

Assumptions for shadow calculations

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
0.80 1.82 4.75 6.09 9.67 10.05 8.16 7.72 5.94 2.93 0.63 0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	July	August	September	October	November	December		
1	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	18:21 (2) 18:22 (2)	07:27 16:32	08:33 15:37	
2	04:21 22:19	05:11 21:33	06:17 20:14	07:20 18:50		07:30 16:29	08:34 15:36	
3	04:21 22:19	05:13 21:31	06:19 20:12	07:22 18:48		07:32 16:27	08:36 15:35	
4	04:22 22:18	05:15 21:28	06:21 20:09	07:25 18:45		07:34 16:25	08:38 15:34	
5	04:24 22:17	05:17 21:26	06:23 20:06	07:27 18:42		07:37 16:22	08:40 15:33	
6	04:25 22:16	05:19 21:24	06:25 20:03	07:29 18:39		07:39 16:20	08:41 15:32	
7	04:26 22:15	05:21 21:22	06:27 20:00	07:31 18:37		07:41 16:18	08:43 15:32	
8	04:27 22:15	05:23 21:19	06:29 19:58	07:33 18:34		07:43 16:16	08:44 15:31	
9	04:28 22:13	05:26 21:17	06:32 19:55	07:35 18:31		07:46 16:14	08:46 15:30	
10	04:30 22:12	05:28 21:14	06:34 19:52	07:38 18:28		07:48 16:12	08:47 15:30	
11	04:31 22:11	05:30 21:12	06:36 19:49	07:40 18:26		07:50 16:09	08:49 15:30	
12	04:33 22:10	05:32 21:10	06:38 19:47	07:42 18:23		07:53 16:07	08:50 15:29	
13	04:34 22:09	05:34 21:07	06:40 19:44	07:44 18:20		07:55 16:05	15:05 (11) 15:13 (11)	08:51 15:29
14	04:36 22:07	05:36 21:05	06:42 19:41	07:46 18:17		07:57 16:03	15:04 (11) 15:15 (11)	08:52 15:29
15	04:37 22:06	05:38 21:02	06:44 19:38	07:49 18:15		07:59 16:01	15:02 (11) 15:15 (11)	08:53 15:29
16	04:39 22:05	05:40 21:00	06:46 19:35	07:51 18:12		08:02 16:00	15:02 (11) 15:17 (11)	08:54 15:29
17	04:40 22:03	05:43 20:57	06:48 19:32	07:53 18:09	17:10 (4) 17:18 (4)	08:04 15:58	15:01 (11) 15:17 (11)	08:55 15:29
18	04:42 22:02	05:45 20:54	06:51 19:30	07:55 18:07	17:08 (4) 17:20 (4)	08:06 15:56	15:02 (11) 15:16 (11)	08:56 15:29
19	04:44 22:00	05:47 20:52	06:53 19:27	07:58 18:04	17:06 (4) 17:21 (4)	08:08 15:54	15:01 (11) 15:14 (11)	08:57 15:29
20	04:46 21:58	05:49 20:49	06:55 19:24	08:00 18:02	17:04 (4) 17:21 (4)	08:10 15:52	15:02 (11) 15:12 (11)	08:58 15:29
21	04:47 21:57	05:51 20:47	06:57 19:21	08:02 18:27 (2)	17:04 (4) 17:22 (4)	08:13 15:51	15:02 (11) 15:10 (11)	08:58 15:30
22	04:49 21:55	05:53 20:44	06:59 19:18	08:04 18:24 (2)	17:03 (4) 17:03 (4)	08:15 15:49	15:03 (11) 15:09 (11)	08:59 15:30
23	04:51 21:53	05:55 20:41	07:01 19:16	08:07 18:23 (2)	17:04 (4) 17:20 (4)	08:17 15:48	15:03 (11) 15:06 (11)	08:59 15:31
24	04:53 21:51	05:58 20:39	07:03 19:13	08:09 18:21 (2)	17:03 (4) 17:17 (4)	08:19 15:46	15:03 (11) 15:04 (11)	09:00 15:31
25	04:55 21:49	06:00 20:36	07:05 19:10	08:11 18:20 (2)	16:04 (4) 16:15 (4)	08:21 15:45		09:00 15:32
26	04:57 21:47	06:02 20:33	07:07 19:07	08:13 18:19 (2)	16:04 (4) 16:12 (4)	08:23 15:43		09:00 15:33
27	04:59 21:45	06:04 20:31	07:10 19:04	08:16 18:33 (2)	16:06 (4) 16:10 (4)	08:25 15:42		09:00 15:34
28	05:01 21:43	06:06 20:28	07:12 19:02	08:18 18:18 (2)	07:18 16:41	08:27 15:41		09:01 15:34
29	05:03 21:41	06:08 20:25	07:14 18:59	08:20 18:27 (2)	07:20 16:39	08:29 15:39		09:01 15:35
30	05:05 21:39	06:10 20:23	07:16 18:56	08:23 18:20 (2)	07:23 16:36	08:31 15:38		09:01 15:37
31	05:07 21:37	06:12 20:20		08:25 16:34				09:00 15:38
Potential sun hours	538	474	386	321		241		207
Total, worst case			120	143		118		
Sun reduction			0.46	0.28		0.08		
Oper. time red.			1.00	1.00		1.00		
Wind dir. red.			1.00	1.00		1.00		
Total reduction			0.46	0.28		0.08		
Total, real			55	40		9		

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Last time (hh:mm) with flicker	(WTG causing flicker last time)
	Minutes with flicker		

Flickering_Valka_Siemens_Gamesa

SIA Estonian, Latvian & Lithuanian environment
Vilandes 3-6
LV-1010 Riga
0037167242411
Baiba / baiba.ozolina@environment.lv
Calculated:
15/01/2026 18:42/4.1.254

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Sedaskalni (94880100255001) - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (584)
Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) []
Sunrise: 06:00 Sunset: 18:00 Moonrise: 00:00 Moonset: 12:00 Day: 15/01/2025

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

January		February		March		April		May		June		July		August		September		October		November		December	
1	09:00	12:40 (2)	08:21	15:52 (9)	07:13	06:48	05:28	04:27	04:20	05:09	06:15	07:18			07:27		15:25 (9)	08:33			12:34 (3)		
2	15:39	48 14:47 (3)	16:40	11 16:03 (9)	17:46	19:55	21:01	22:03	22:20	21:35	20:17	18:53			16:32	14	15:56 (1)	15:37	33	14:33 (2)			
3	09:00	12:42 (2)	08:19	15:52 (9)	07:11	06:45	05:25	04:25	04:21	05:11	06:17	07:20			07:30		15:24 (9)	08:35			12:32 (2)		
4	15:41	48 14:49 (3)	16:42	14 16:06 (9)	17:48	19:57	21:03	04:24	22:19	21:33	20:14	18:50			16:29	15	15:39 (9)	15:36	38	14:34 (3)			
5	09:00	12:42 (2)	08:17	15:52 (9)	07:08	06:42	05:23	04:24	04:22	05:13	06:19	07:23			07:32		15:23 (9)	08:36			12:32 (2)		
6	15:42	47 14:49 (3)	16:44	17 16:09 (9)	17:50	19:59	21:06	22:06	22:19	21:31	20:12	18:48			16:27	16	15:39 (9)	15:35	38	14:34 (3)			
7	08:59	12:43 (2)	08:15	15:52 (9)	07:05	06:39	05:20	04:23	04:23	05:15	06:21	07:25			07:34		15:23 (9)	08:38			12:31 (2)		
8	15:43	46 14:49 (3)	16:47	18 16:10 (9)	17:53	20:02	21:08	22:07	22:18	21:29	20:09	18:45			16:25	17	15:40 (9)	15:34	41	14:35 (3)			
9	08:59	12:44 (2)	08:12	15:52 (9)	07:03	06:36	05:18	04:22	04:24	05:17	06:23	07:27			07:37		15:23 (9)	08:40			12:31 (2)		
10	15:45	44 14:49 (3)	16:49	19 16:11 (9)	17:55	20:04	21:10	22:08	22:17	21:26	20:06	18:42			16:23	18	15:41 (9)	15:33	43	14:35 (3)			
11	08:58	12:44 (2)	08:10	15:52 (9)	07:00	06:34	05:16	04:21	04:25	05:19	06:25	07:29			07:39		15:22 (9)	08:41			12:31 (2)		
12	15:46	45 14:50 (3)	16:52	18 16:10 (9)	17:57	20:06	21:12	22:10	22:17	21:24	20:03	18:39			16:20	19	15:41 (9)	15:32	44	14:36 (3)			
13	08:57	12:46 (2)	08:08	15:53 (9)	06:57	06:31	05:13	04:20	04:26	05:21	06:27	07:31			07:41		15:22 (9)	08:43			12:31 (2)		
14	15:48	43 14:50 (3)	16:54	17 16:10 (9)	17:59	20:08	21:14	22:11	22:16	21:22	20:01	18:37			16:18	19	15:41 (9)	15:32	44	14:36 (3)			
15	08:57	12:47 (2)	08:06	15:53 (9)	06:54	06:28	05:11	04:21	04:27	05:23	06:30	07:33			07:44		15:22 (9)	08:45			12:31 (2)		
16	15:49	41 14:51 (3)	16:56	16 16:09 (9)	18:02	20:10	21:17	22:12	22:15	21:19	19:58	18:34			16:16	16	15:38 (9)	15:31	46	14:37 (3)			
17	08:56	12:48 (2)	08:04	15:55 (9)	06:52	06:25	05:09	04:19	04:28	05:26	06:32	07:36			07:46		15:23 (9)	08:46			12:30 (2)		
18	15:51	39 14:51 (3)	16:59	14 16:09 (9)	18:04	20:13	21:19	22:13	22:14	21:17	19:55	18:31			16:14	14	15:37 (9)	15:31	47	14:37 (3)			
19	08:55	12:50 (2)	08:01	15:56 (9)	06:49	06:23	05:06	04:18	04:30	05:28	06:34	07:38			07:48		15:23 (9)	08:47			12:31 (2)		
20	15:53	38 14:52 (3)	17:01	15 16:27 (1)	1																		

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Minutes with flicker	Last time (hh:mm) with flicker
			(WTG causing flicker last time)

Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Sermuli - Shadow Receptor: 1.0×1.0 Azimuth: 3.1° Slope: 90.0° (768)
 Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:14 17:46	06:48 19:55	05:28 21:02	04:27 22:03	04:20 22:20	05:09 21:36	06:15 20:18	07:19 18:54	07:28 16:32	08:33 15:37
2	09:00 15:41	08:19 16:42	07:11 17:48	06:45 19:57	05:25 21:04	04:26 22:04	04:21 22:20	05:11 21:33	06:17 20:15	07:21 18:51	07:30 16:30	08:35 15:36
3	09:00 15:42	08:17 16:45	07:08 17:51	06:42 20:00	05:23 21:06	04:24 22:06	04:22 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:37 15:35
4	09:00 15:43	08:15 16:47	07:06 17:53	06:39 20:02	05:20 21:08	04:23 22:07	04:23 22:18	05:15 21:29	06:21 20:09	07:25 18:45	07:35 16:25	08:38 15:34
5	08:59 15:45	08:13 16:49	07:03 17:55	06:37 20:04	05:18 21:10	04:22 22:09	04:24 22:18	05:17 21:27	06:23 20:06	07:27 18:42	07:37 16:23	08:40 15:33
6	08:58 15:46	08:11 16:52	07:00 17:57	06:34 20:06	05:16 21:13	04:21 22:10	04:25 22:17	05:20 21:24	06:26 20:04	07:29 18:40	07:39 16:21	08:42 15:33
7	08:58 15:48	08:08 16:54	06:57 18:00	06:31 20:08	05:13 21:15	04:20 22:11	04:26 22:16	05:22 21:22	06:28 20:01	07:32 18:37	07:42 16:18	08:43 15:32
8	08:57 15:50	08:06 16:57	06:55 18:02	06:28 20:11	05:11 21:17	04:19 22:12	04:27 22:15	05:24 21:20	06:30 19:58	07:34 18:34	07:44 16:16	08:45 15:31
9	08:56 15:51	08:04 16:59	06:52 18:04	06:26 20:13	05:09 21:19	04:19 22:13	04:29 22:14	05:26 21:17	06:32 19:55	07:36 18:31	07:46 16:14	08:46 15:31
10	08:55 15:53	08:02 17:01	06:49 18:06	06:23 20:15	05:07 21:21	04:18 22:15	04:30 22:13	05:28 21:15	06:34 19:53	07:38 18:29	07:48 16:12	08:48 15:30
11	08:54 15:55	07:59 17:04	06:46 18:09	06:20 20:17	05:04 21:23	04:17 22:16	04:31 22:12	05:30 21:12	06:36 19:50	07:40 18:26	07:51 16:10	08:49 15:30
12	08:53 15:57	07:57 17:06	06:44 18:11	06:17 20:19	05:02 21:25	04:17 22:16	04:33 22:11	05:32 21:10	06:38 19:47	07:42 18:23	07:53 16:08	08:50 15:30
13	08:52 15:59	07:54 17:08	06:41 18:13	06:15 20:22	05:00 21:28	04:16 22:17	04:34 22:09	05:34 21:08	06:40 19:44	07:45 18:21	07:55 16:06	08:52 15:29
14	08:51 16:01	07:52 17:11	06:38 18:15	06:12 20:24	04:58 21:30	04:16 22:18	04:36 22:08	05:36 21:05	06:42 19:41	07:47 18:18	07:58 16:04	08:53 15:29
15	08:50 16:03	07:50 17:13	06:35 18:18	06:09 20:26	04:56 21:32	04:15 22:19	04:37 22:07	05:39 21:03	06:45 19:38	07:49 18:15	08:00 16:02	08:54 15:29
16	08:49 16:05	07:47 17:16	06:33 18:20	06:07 20:28	04:54 21:34	04:15 22:19	04:39 22:05	05:41 21:00	06:47 19:36	07:51 18:13	08:02 16:00	08:55 15:29
17	08:47 16:07	07:45 17:18	06:30 18:22	06:04 20:31	04:52 21:36	04:15 22:20	04:41 22:04	05:43 20:57	06:49 19:33	07:54 18:10	08:04 15:58	08:56 15:29
18	08:46 16:09	07:42 17:20	06:27 18:24	06:01 20:33	04:50 21:38	04:15 22:21	04:42 22:02	05:45 20:55	06:51 19:30	07:56 18:07	08:07 15:56	08:57 15:29
19	08:44 16:11	07:40 17:23	06:24 18:27	05:59 20:35	04:48 21:40	04:15 22:21	04:44 22:00	05:47 20:52	06:53 19:27	07:58 18:05	08:09 15:54	08:57 15:29
20	08:43 16:13	07:37 17:25	06:21 18:29	05:56 20:37	04:46 21:42	04:15 22:21	04:46 21:59	05:49 20:50	06:55 19:24	08:00 18:02	08:11 15:53	08:58 15:30
21	08:41 16:15	07:35 17:27	06:19 18:31	05:53 20:39	04:44 21:44	04:15 22:22	04:48 21:57	05:51 20:47	06:57 19:22	08:03 17:59	08:13 15:51	08:59 15:30
22	08:40 16:17	07:32 17:30	06:16 18:33	05:51 20:42	04:42 21:46	04:15 22:22	04:50 21:55	05:54 20:44	06:59 19:19	08:05 17:57	08:15 15:49	08:59 15:30
23	08:38 16:19	07:29 17:32	06:13 18:35	05:48 20:44	04:40 21:48	04:15 22:22	04:51 21:54	05:56 20:42	07:01 19:16	08:07 17:54	08:17 15:48	09:00 15:31
24	08:36 16:22	07:27 17:34	06:10 18:38	05:45 20:46	04:39 21:49	04:16 22:22	04:53 21:52	05:58 20:39	07:04 19:13	08:09 17:52	08:19 15:46	09:00 15:32
25	08:35 16:24	07:24 17:37	06:07 18:40	05:43 20:48	04:37 21:51	04:16 22:22	04:55 21:50	06:00 20:37	07:06 19:10	07:12 16:49	08:21 15:45	09:01 15:32
26	08:33 16:26	07:22 17:39	06:05 18:42	05:40 20:51	04:35 21:53	04:16 22:22	04:57 21:48	06:02 20:34	07:08 19:08	07:14 16:47	08:24 15:43	09:01 15:33
27	08:31 16:28	07:19 17:41	06:02 18:44	05:38 20:53	04:34 21:55	04:17 22:22	04:59 21:46	06:04 20:31	07:10 19:05	07:16 16:44	08:26 15:42	09:01 15:34
28	08:29 16:31	07:16 17:44	05:59 18:46	05:35 20:55	04:32 21:56	04:18 22:22	05:01 21:44	06:06 20:28	07:12 19:02	07:19 16:42	08:27 15:41	09:01 15:35
29	08:27 16:33		06:56 19:49	05:33 20:57	04:31 21:58	04:18 22:21	05:03 21:42	06:09 20:26	07:14 18:59	07:21 16:39	08:29 15:40	09:01 15:36
30	08:25 16:35		06:53 19:51	05:30 20:59	04:29 22:00	04:19 22:21	05:05 21:40	06:11 20:23	07:16 18:56	07:23 16:37	08:31 15:38	09:01 15:37
31	08:23 16:38		06:51 19:53		04:28 22:01		05:07 21:38	06:13 20:20		07:25 16:34		09:01 15:38
Potential sun hours	227	262	365	429	515	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa

Assumptions for shadow calculations

Shadow receptor: Sietini - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (453)
Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January		February		March		April	May	June
1	09:00	14:23 (4)	08:21	15:37 (14)	07:13		06:48	05:27	04:27
	15:39	23	14:46 (4)	16:40	5	15:42 (14)	17:46	19:55	21:01
2	09:00	14:23 (4)	08:19				07:11	06:45	05:25
	15:41	23	14:46 (4)	16:42			17:48	19:57	21:03
3	09:00	14:24 (4)	08:17	16:08 (2)	07:08		06:42	05:23	04:24
	15:42	23	14:47 (4)	16:44	1	16:09 (2)	17:50	19:59	21:06
4	08:59	14:24 (4)	08:15	16:05 (2)	07:05		06:39	05:20	04:23
	15:43	23	14:47 (4)	16:47	6	16:11 (2)	17:53	20:01	21:08
5	08:59	14:24 (4)	08:12	16:03 (2)	07:03		06:36	05:18	04:22
	15:45	23	14:47 (4)	16:49	11	16:14 (2)	17:55	20:04	21:10
6	08:58	14:25 (4)	08:10	16:02 (2)	07:00		06:34	05:15	04:21
	15:46	23	14:48 (4)	16:52	14	16:16 (2)	17:57	20:06	21:12
7	08:57	14:25 (4)	08:08	16:01 (2)	06:57		06:31	05:13	04:20
	15:48	23	14:48 (4)	16:54	18	16:19 (2)	17:59	20:08	21:14
8	08:57	14:26 (4)	08:06	16:00 (2)	06:54		06:28	05:11	04:19
	15:49	23	14:49 (4)	16:56	22	16:22 (2)	18:02	20:10	21:16
9	08:56	14:27 (4)	08:03	16:00 (2)	06:52		06:25	05:09	04:18
	15:51	22	14:49 (4)	16:59	25	16:25 (2)	18:04	20:13	21:19
10	08:55	14:27 (4)	08:01	15:59 (2)	06:49		06:23	05:06	04:18
	15:53	22	14:49 (4)	17:01	26	16:25 (2)	18:06	20:15	21:21
11	08:54	14:27 (4)	07:59	15:59 (2)	06:46		06:20	05:04	04:17
	15:55	22	14:49 (4)	17:03	27	16:26 (2)	18:08	20:17	21:23
12	08:53	14:28 (4)	07:56	15:59 (2)	06:43		06:17	05:02	04:17
	15:57	21	14:49 (4)	17:06	27	16:26 (2)	18:11	20:19	21:25
13	08:52	14:29 (4)	07:54	15:59 (2)	06:41		17:43 (1)	06:14	05:00
	15:58	20	14:49 (4)	17:08	27	16:26 (2)	18:13	1	17:44 (1)
14	08:51	14:30 (4)	07:52	15:59 (2)	06:38		17:42 (1)	06:12	04:58
	16:00	19	14:49 (4)	17:11	32	16:38 (3)	18:15	4	17:46 (1)
15	08:49	14:30 (4)	07:49	15:59 (2)	06:35		17:41 (1)	06:09	04:56
	16:02	19	14:49 (4)	17:13	34	16:40 (3)	18:17	7	17:48 (1)
16	08:48	14:32 (4)	07:47	16:00 (2)	06:32		17:40 (1)	06:06	04:53
	16:04	17	14:49 (4)	17:15	35	16:43 (3)	18:20	10	17:50 (1)
17	08:47	14:33 (4)	07:44	16:00 (2)	06:29		17:41 (1)	06:04	04:51
	16:06	15	14:48 (4)	17:18	37	16:45 (3)	18:22	12	17:53 (1)
18	08:45	14:34 (4)	07:42	16:01 (2)	06:27		17:41 (1)	06:01	04:50
	16:08	13	14:47 (4)	17:20	38	16:48 (3)	18:24	14	17:55 (1)
19	08:44	14:36 (4)	07:39	16:02 (2)	06:24		17:41 (1)	05:58	04:48
	16:10	11	15:29 (14)	17:22	38	16:50 (3)	18:26	15	17:56 (1)
20	08:42	14:40 (4)	07:37	16:03 (2)	06:21		17:41 (1)	05:56	04:46
	16:13	7	15:32 (14)	17:25	34	16:49 (3)	18:28	13	17:54 (1)
21	08:41	15:29 (14)	07:34	16:05 (2)	06:18		17:43 (1)	05:53	04:44
	16:15	6	15:35 (14)	17:27	27	16:47 (3)	18:31	9	17:52 (1)
22	08:39	15:29 (14)	07:32	16:09 (2)	06:16			05:50	04:42
	16:17	8	15:37 (14)	17:29	16	16:46 (3)	18:33	20:41	21:45
23	08:38	15:29 (14)	07:29				06:13	05:48	04:40
	16:19	11	15:40 (14)	17:32			18:35	20:43	21:47
24	08:36	15:29 (14)	07:26				06:10	05:45	04:39
	16:21	13	15:42 (14)	17:34			18:37	20:46	21:49
25	08:34	15:29 (14)	07:24				06:07	05:43	04:37
	16:24	16	15:45 (14)	17:36			18:39	20:48	21:51
26	08:32	15:30 (14)	07:21				06:04	05:40	04:35
	16:26	18	15:48 (14)	17:39			18:42	20:50	21:53
27	08:31	15:29 (14)	07:19				06:02	05:37	04:34
	16:28	18	15:47 (14)	17:41			18:44	20:52	21:54
28	08:29	15:30 (14)	07:16				05:59	05:35	04:32
	16:30	17	15:47 (14)	17:43			18:46	20:55	21:56
29	08:27	15:31 (14)					06:56	05:32	04:31
	16:33	15	15:46 (14)				19:48	20:57	21:58
30	08:25	15:33 (14)					06:53	05:30	04:29
	16:35	13	15:46 (14)				19:50	20:59	21:59
31	08:23	15:35 (14)					06:50		04:28
	16:37	10	15:45 (14)				19:53		22:01
Potential sun hours	227		262		365		429	515	539
Total, worst case	537		500		85				
Sun reduction	0.11		0.19		0.40				
Oper. time red.	1.00		1.00		1.00				
Wind dir. red.	1.00		1.00		1.00				
Total reduction	0.11		0.19		0.40				
Total, real	59		97		34				

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Sietini - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (453)
Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) []

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
0.80 1.82 4.75 6.09 9.67 10.05 8.16 7.72 5.94 2.93 0.63 0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	July	August	September	October	November	December
1	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:27 16:32 26	08:33 15:28 (2) 15:37 22
2	04:21 22:19	05:11 21:33	06:17 20:14	07:20 18:50	07:30 16:29 25	08:35 15:29 (2) 15:36 23
3	04:21 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27 21	08:36 15:30 (2) 15:35 22
4	04:22 22:18	05:15 21:28	06:21 20:09	07:25 18:45	07:34 16:25 18	08:38 15:31 (2) 15:34 23
5	04:24 22:17	05:17 21:26	06:23 20:06	07:27 18:42	07:37 16:23 15	08:40 15:31 (2) 15:33 23
6	04:25 22:16	05:19 21:24	06:25 20:03	07:29 18:39	07:39 16:20 11	08:41 15:33 (2) 15:32 23
7	04:26 22:16	05:21 21:22	06:27 20:01	07:31 18:37	07:41 16:18 7	08:43 15:35 (2) 15:32 24
8	04:27 22:15	05:23 21:19	06:29 19:58	07:33 18:34	07:43 16:16 1	08:44 15:38 (2) 15:31 23
9	04:28 22:14	05:26 21:17	06:32 19:55	07:36 18:31	07:46 16:14	08:46 15:39 (2) 15:31 23
10	04:30 22:12	05:28 21:14	06:34 19:52	07:38 18:28	07:48 16:12 6	08:47 15:07 (14) 15:30 23
11	04:31 22:11	05:30 21:12	06:36 19:49	07:40 18:26	07:50 16:10 11	08:49 15:05 (14) 15:30 23
12	04:33 22:10	05:32 21:10	06:38 19:47	07:42 18:23	07:53 16:07 13	08:50 15:05 (14) 15:29 23
13	04:34 22:09	05:34 21:07	06:40 19:44	07:44 18:20	07:55 16:05 15	08:51 15:03 (14) 15:29 23
14	04:36 22:08	05:36 21:05	06:42 19:41	07:47 18:18	07:57 16:03 17	08:52 15:03 (14) 15:29 23
15	04:37 22:06	05:38 21:02	06:44 19:38	07:49 18:15	07:59 16:02 18	08:53 15:02 (14) 15:29 23
16	04:39 22:05	05:40 21:00	06:46 19:35	07:51 18:12	08:02 16:00 18	08:54 15:03 (14) 15:29 23
17	04:40 22:03	05:43 20:57	06:48 19:33	07:53 18:10	08:04 15:58 16	08:55 15:02 (14) 15:29 23
18	04:42 22:02	05:45 20:55	06:51 19:30	07:55 18:07	08:06 15:56 13	08:56 15:03 (14) 15:29 23
19	04:44 22:00	05:47 20:52	06:53 19:27	07:58 18:04 6	08:08 17:09 (3) 17:15 (3) 15:54 11	08:57 15:03 (14) 15:29 22
20	04:46 21:58	05:49 20:49	06:55 19:24	08:00 18:02 20	08:10 16:38 (2) 17:17 (3) 15:52 8	08:58 15:04 (14) 15:29 22
21	04:47 21:57	05:51 20:47	06:57 19:21	08:02 17:59 30	08:13 16:35 (2) 17:19 (3) 15:51 6	08:58 15:04 (14) 15:30 23
22	04:49 21:55	05:53 20:44	06:59 19:18 7	08:04 18:29 (1) 17:57 35	08:15 16:33 (2) 17:19 (3) 15:49 7	08:59 14:17 (4) 15:30 23
23	04:51 21:53	05:55 20:41	07:01 19:16 11	08:07 18:27 (1) 17:54 38	08:17 16:32 (2) 17:20 (3) 15:48 11	08:59 14:13 (4) 15:31 23
24	04:53 21:51	05:58 20:39	07:03 19:13 14	08:09 18:25 (1) 17:51 39	08:19 16:30 (2) 17:17 (3) 15:46 13	09:00 14:11 (4) 15:31 22
25	04:55 21:49	06:00 20:36	07:05 19:10 15	08:11 18:24 (1) 16:49 37	08:21 15:30 (2) 16:15 (3) 15:45 15	09:00 14:11 (4) 15:32 23
26	04:57 21:47	06:02 20:33	07:08 19:07 13	08:14 18:23 (1) 16:46 36	08:23 15:29 (2) 16:12 (3) 15:43 17	09:00 14:10 (4) 15:33 23
27	04:59 21:45	06:04 20:31	07:10 19:04 11	08:16 18:22 (1) 16:44 34	08:25 15:29 (2) 16:10 (3) 15:42 18	09:01 14:10 (4) 15:34 23
28	05:01 21:43	06:06 20:28	07:12 19:02 8	08:18 18:22 (1) 16:41 30	08:27 15:28 (2) 16:06 (3) 15:41 19	09:01 14:10 (4) 15:35 23
29	05:03 21:41	06:08 20:25	07:14 18:59 5	08:20 18:27 (1) 16:39 27	08:29 15:29 (2) 15:56 (2) 15:39 20	09:01 14:10 (4) 15:35 23
30	05:05 21:39	06:10 20:23	07:16 18:56 2	08:23 18:23 (1) 16:37 27	08:31 15:28 (2) 15:55 (2) 15:38 21	09:01 14:10 (4) 15:37 23
31	05:07 21:37	06:13 20:20		08:25 17:25 26	08:33 15:29 (2) 15:55 (2) 241	09:01 14:22 (4) 15:38 24
Potential sun hours	538	474	386	321	241	207
Total, worst case			86	385	417	710
Sun reduction			0.46	0.28	0.08	0.06
Oper. time red.			1.00	1.00	1.00	1.00
Wind dir. red.			1.00	1.00	1.00	1.00
Total reduction			0.46	0.28	0.08	0.06
Total, real			40	109	33	44

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Last time (hh:mm) with flicker	(WTG causing flicker last time)

Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa
Assumptions for shadow calculations

Shadow receptor: Silkalni - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (774)
Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01	08:21	07:14	06:48	05:28	04:27	04:20	05:09	06:15	07:19	07:28	08:33
	15:40	16:40	17:46	19:55	21:02	22:03	22:20	21:36	20:18	18:54	16:32	15:37
2	09:00	08:19	07:11	06:45	05:25	04:26	04:21	05:11	06:17	07:21	07:30	08:35
	15:41	16:42	17:48	19:57	21:04	22:04	22:20	21:33	20:15	18:51	16:30	15:36
3	09:00	08:17	07:08	06:42	05:23	04:25	04:22	05:13	06:19	07:23	07:32	08:37
	15:42	16:45	17:51	20:00	21:06	22:06	22:19	21:31	20:12	18:48	16:27	15:35
4	09:00	08:15	07:06	06:40	05:21	04:23	04:23	05:15	06:21	07:25	07:35	08:38
	15:44	16:47	17:53	20:02	21:08	22:07	22:18	21:29	20:09	18:45	16:25	15:34
5	08:59	08:13	07:03	06:37	05:18	04:22	04:24	05:18	06:24	07:27	07:37	08:40
	15:45	16:50	17:55	20:04	21:10	22:09	22:18	21:27	20:07	18:42	16:23	15:34
6	08:58	08:11	07:00	06:34	05:16	04:21	04:25	05:20	06:26	07:29	07:39	08:42
	15:47	16:52	17:57	20:06	21:13	22:10	22:17	21:24	20:04	18:40	16:21	15:33
7	08:58	08:08	06:57	06:31	05:14	04:21	04:26	05:22	06:28	07:32	07:42	08:43
	15:48	16:54	18:00	20:08	21:15	22:11	22:16	21:22	20:01	18:37	16:18	15:32
8	08:57	08:06	06:55	06:29	05:11	04:20	04:28	05:24	06:30	07:34	07:44	08:45
	15:50	16:57	18:02	20:11	21:17	22:12	22:15	21:20	19:58	18:34	16:16	15:31
9	08:56	08:04	06:52	06:26	05:09	04:19	04:29	05:26	06:32	07:36	07:46	08:46
	15:52	16:59	18:04	20:13	21:19	22:13	22:14	21:17	19:55	18:31	16:14	15:31
10	08:55	08:02	06:49	06:23	05:07	04:18	04:30	05:28	06:34	07:38	07:48	08:48
	15:53	17:01	18:07	20:15	21:21	22:14	22:13	21:15	19:53	18:29	16:12	15:30
11	08:54	07:59	06:47	06:20	05:04	04:18	04:32	05:30	06:36	07:40	07:51	08:49
	15:55	17:04	18:09	20:17	21:23	22:15	22:12	21:12	19:50	18:26	16:10	15:30
12	08:53	07:57	06:44	06:18	05:02	04:17	04:33	05:32	06:38	07:43	07:53	08:50
	15:57	17:06	18:11	20:20	21:25	22:16	22:11	21:10	19:47	18:23	16:08	15:30
13	08:52	07:54	06:41	06:15	05:00	04:16	04:34	05:34	06:40	07:45	07:55	08:52
	15:59	17:09	18:13	20:22	21:28	22:17	22:09	21:08	19:44	18:21	16:06	15:29
14	08:51	07:52	06:38	06:12	04:58	04:16	04:36	05:37	06:43	07:47	07:58	08:53
	16:01	17:11	18:16	20:24	21:30	22:18	22:08	21:05	19:41	18:18	16:04	15:29
15	08:50	07:50	06:35	06:09	04:56	04:16	04:38	05:39	06:45	07:49	08:00	08:54
	16:03	17:13	18:18	20:26	21:32	22:19	22:07	21:03	19:39	18:15	16:02	15:29
16	08:49	07:47	06:33	06:07	04:54	04:15	04:39	05:41	06:47	07:51	08:02	08:55
	16:05	17:16	18:20	20:28	21:34	22:19	22:05	21:00	19:36	18:13	16:00	15:29
17	08:47	07:45	06:30	06:04	04:52	04:15	04:41	05:43	06:49	07:54	08:04	08:56
	16:07	17:18	18:22	20:31	21:36	22:20	22:04	20:57	19:33	18:10	15:58	15:29
18	08:46	07:42	06:27	06:01	04:50	04:15	04:43	05:45	06:51	07:56	08:07	08:57
	16:09	17:20	18:24	20:33	21:38	22:21	22:02	20:55	19:30	18:07	15:56	15:29
19	08:44	07:40	06:24	05:59	04:48	04:15	04:44	05:47	06:53	07:58	08:09	08:57
	16:11	17:23	18:27	20:35	21:40	22:21	22:00	20:52	19:27	18:05	15:55	15:29
20	08:43	07:37	06:22	05:56	04:46	04:15	04:46	05:49	06:55	08:00	08:11	08:58
	16:13	17:25	18:29	20:37	21:42	22:21	21:59	20:50	19:24	18:02	15:53	15:30
21	08:41	07:35	06:19	05:53	04:44	04:15	04:48	05:52	06:57	08:03	08:13	08:59
	16:15	17:27	18:31	20:39	21:44	22:22	21:57	20:47	19:22	17:59	15:51	15:30
22	08:40	07:32	06:16	05:51	04:42	04:15	04:50	05:54	06:59	08:05	08:15	08:59
	16:17	17:30	18:33	20:42	21:46	22:22	21:55	20:44	19:19	17:57	15:50	15:31
23	08:38	07:29	06:13	05:48	04:41	04:15	04:52	05:56	07:02	08:07	08:17	09:00
	16:20	17:32	18:35	20:44	21:47	22:22	21:54	20:42	19:16	17:54	15:48	15:31
24	08:36	07:27	06:10	05:46	04:39	04:16	04:53	05:58	07:04	08:09	08:19	09:00
	16:22	17:34	18:38	20:46	21:49	22:22	21:52	20:39	19:13	17:52	15:46	15:32
25	08:35	07:24	06:08	05:43	04:37	04:16	04:55	06:00	07:06	07:12	08:21	09:01
	16:24	17:37	18:40	20:48	21:51	22:22	21:50	20:37	19:10	16:49	15:45	15:32
26	08:33	07:22	06:05	05:40	04:36	04:17	04:57	06:02	07:08	07:14	08:23	09:01
	16:26	17:39	18:42	20:51	21:53	22:22	21:48	20:34	19:08	16:47	15:44	15:33
27	08:31	07:19	06:02	05:38	04:34	04:17	04:59	06:04	07:10	07:16	08:25	09:01
	16:29	17:41	18:44	20:53	21:55	22:22	21:46	20:31	19:05	16:44	15:42	15:34
28	08:29	07:16	05:59	05:35	04:33	04:18	05:01	06:07	07:12	07:19	08:27	09:01
	16:31	17:44	18:46	20:55	21:56	22:21	21:44	20:28	19:02	16:42	15:41	15:35
29	08:27		06:56	05:33	04:31	04:18	05:03	06:09	07:14	07:21	08:29	09:01
	16:33		19:49	20:57	21:58	22:21	21:42	20:26	18:59	16:39	15:40	15:36
30	08:25		06:54	05:30	04:30	04:19	05:05	06:11	07:16	07:23	08:31	09:01
	16:35		19:51	20:59	22:00	22:21	21:40	20:23	18:56	16:37	15:39	15:37
31	08:23		06:51		04:28		05:07	06:13		07:25		09:01
	16:38		19:53		22:01		21:38	20:20		16:35		15:38
Potential sun hours	227	262	365	429	515	539	538	474	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Staldoti - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (798)
 Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January			February			March			April	May	June
1	09:01		09:43 (7)	08:21		08:54 (6)	07:14		07:54 (9)	06:48	05:28	04:27
	15:40	19	10:02 (7)	16:40	10	09:04 (6)	17:46	10	08:04 (9)	19:55	21:01	22:03
2	09:00		09:44 (7)	08:19		08:51 (6)	07:11		07:38 (5)	06:45	05:25	04:26
	15:41	19	10:03 (7)	16:42	14	09:05 (6)	17:48	6	08:00 (9)	19:57	21:04	22:04
3	09:00		09:44 (7)	08:17		08:49 (6)	07:08		07:35 (5)	06:42	05:23	04:25
	15:42	20	10:04 (7)	16:45	17	09:06 (6)	17:51	7	07:42 (5)	20:00	21:06	22:06
4	08:59		09:44 (7)	08:15		08:46 (6)	07:06		07:33 (5)	06:40	05:21	04:23
	15:44	20	10:04 (7)	16:47	20	09:06 (6)	17:53	11	07:44 (5)	20:02	21:08	22:07
5	08:59		09:45 (7)	08:13		08:46 (6)	07:03		07:30 (5)	06:37	05:18	04:22
	15:45	19	10:04 (7)	16:49	22	09:08 (6)	17:55	14	07:44 (5)	20:04	21:10	22:09
6	08:58		09:46 (7)	08:11		08:46 (6)	07:00		07:27 (5)	06:34	05:16	04:21
	15:47	20	10:06 (7)	16:52	22	09:08 (6)	17:57	17	07:44 (5)	20:06	21:12	22:10
7	08:58		09:45 (7)	08:08		08:46 (6)	06:57		07:24 (5)	06:31	05:13	04:20
	15:48	20	10:05 (7)	16:54	22	09:08 (6)	18:00	20	07:44 (5)	20:08	21:15	22:11
8	08:57		09:46 (7)	08:06		08:46 (6)	06:55		07:23 (5)	06:28	05:11	04:20
	15:50	20	10:06 (7)	16:57	23	09:09 (6)	18:02	20	07:43 (5)	20:11	21:17	22:12
9	08:56		09:46 (7)	08:04		08:46 (6)	06:52		07:24 (5)	06:26	05:09	04:19
	15:51	20	10:06 (7)	16:59	22	09:08 (6)	18:04	20	07:44 (5)	20:13	21:19	22:13
10	08:55		09:47 (7)	08:01		08:47 (6)	06:49		07:24 (5)	06:23	05:07	04:18
	15:53	20	10:07 (7)	17:01	21	09:08 (6)	18:06	19	07:43 (5)	20:15	21:21	22:14
11	08:54		09:48 (7)	07:59		08:47 (6)	06:46		07:25 (5)	06:20	05:04	04:17
	15:55	19	10:07 (7)	17:04	21	09:08 (6)	18:09	17	07:42 (5)	20:17	21:23	22:15
12	08:53		09:48 (7)	07:57		08:48 (6)	06:44		07:25 (5)	06:17	05:02	04:17
	15:57	19	10:07 (7)	17:06	19	09:07 (6)	18:11	15	07:40 (5)	20:19	21:25	22:16
13	08:52		09:49 (7)	07:54		08:49 (6)	06:41		07:27 (5)	06:15	05:00	04:16
	15:59	18	10:07 (7)	17:09	17	09:06 (6)	18:13	11	07:38 (5)	20:22	21:27	22:17
14	08:51		09:49 (7)	07:52		08:49 (6)	06:38		06:12	04:58	04:16	
	16:01	18	10:07 (7)	17:11	15	09:04 (6)	18:15		20:24	21:30	22:18	
15	08:50		09:51 (7)	07:50		08:52 (6)	06:35		06:09	04:56	04:16	
	16:03	16	10:07 (7)	17:13	11	09:03 (6)	18:18		20:26	21:32	22:19	
16	08:48		09:51 (7)	07:47			06:33		06:07	04:54	04:15	
	16:05	16	10:07 (7)	17:16			18:20		20:28	21:34	22:19	
17	08:47		09:52 (7)	07:45			06:30		06:04	04:52	04:15	
	16:07	14	10:06 (7)	17:18			18:22		20:31	21:36	22:20	
18	08:46		09:54 (7)	07:42			06:27		06:01	04:50	04:15	
	16:09	12	10:06 (7)	17:20			18:24		20:33	21:38	22:20	
19	08:44		09:56 (7)	07:40			06:24		05:59	04:48	04:15	
	16:11	9	10:05 (7)	17:23			18:27		20:35	21:40	22:21	
20	08:43		09:58 (7)	07:37			06:21		05:56	04:46	04:15	
	16:13	4	10:02 (7)	17:25			18:29		20:37	21:42	22:21	
21	08:41			07:35		08:03 (9)	06:19		05:53	04:44	04:15	
	16:15			17:27	4	08:07 (9)	18:31		20:39	21:44	22:22	
22	08:40			07:32		08:00 (9)	06:16		05:51	04:42	04:15	
	16:17			17:30	7	08:07 (9)	18:33		20:42	21:46	22:22	
23	08:38			07:29		07:57 (9)	06:13		05:48	04:41	04:15	
	16:19			17:32	11	08:08 (9)	18:35		20:44	21:47	22:22	
24	08:36			07:27		07:55 (9)	06:10		05:45	04:39	04:16	
	16:22			17:34	13	08:08 (9)	18:38		20:46	21:49	22:22	
25	08:35			07:24		07:52 (9)	06:07		05:43	04:37	04:16	
	16:24			17:37	16	08:08 (9)	18:40		20:48	21:51	22:22	
26	08:33			07:22		07:51 (9)	06:05		05:40	04:36	04:17	
	16:26			17:39	16	08:07 (9)	18:42		20:50	21:53	22:22	
27	08:31			07:19		07:51 (9)	06:02		05:38	04:34	04:17	
	16:28			17:41	15	08:06 (9)	18:44		20:53	21:55	22:22	
28	08:29			07:16		07:53 (9)	05:59		05:35	04:32	04:18	
	16:31			17:44	13	08:06 (9)	18:46		20:55	21:56	22:21	
29	08:27						06:56		05:33	04:31	04:18	
	16:33						19:49		20:57	21:58	22:21	
30	08:25		08:58 (6)				06:53		05:30	04:30	04:19	
	16:35	1	08:59 (6)				19:51		20:59	22:00	22:21	
31	08:23		08:56 (6)				06:51			04:28		
	16:38	6	09:02 (6)				19:53			22:01		
Potential sun hours	227			262			365		429	515	539	
Total, worst case		349			371		187					
Sun reduction		0.11			0.19		0.40					
Oper. time red.		1.00			1.00		1.00					
Wind dir. red.		1.00			1.00		1.00					
Total reduction		0.11			0.19		0.40					
Total, real		38			72		75					

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Staldoti - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (798)
 Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	July	August	September	October	November	December
1	04:20	05:09	06:15	07:19	08:05 (5)	07:28
	22:20	21:35	20:17	18:54	13	08:16 (6)
2	04:21	05:11	06:17	07:21	08:18 (5)	16:32
	22:20	21:33	20:15	18:51	16	08:38 (6)
3	04:22	05:13	06:19	07:23	08:03 (5)	16:30
	22:19	21:31	20:12	18:48	18	08:38 (6)
4	04:23	05:15	06:21	07:25	08:01 (5)	16:27
	22:18	21:29	20:09	18:45	20	08:38 (6)
5	04:24	05:17	06:23	07:27	08:01 (5)	16:25
	22:18	21:27	20:06	18:42	20	08:38 (6)
6	04:25	05:20	06:26	07:29	08:00 (5)	16:23
	22:17	21:24	20:04	18:40	20	08:38 (6)
7	04:26	05:22	06:28	07:32	08:01 (5)	16:21
	22:16	21:22	20:01	18:37	19	08:37 (6)
8	04:27	05:24	06:30	07:34	08:04 (5)	16:18
	22:15	21:20	19:58	18:34	16	08:37 (6)
9	04:29	05:26	06:32	07:36	08:06 (5)	16:16
	22:14	21:17	19:55	18:31	12	08:36 (6)
10	04:30	05:28	06:34	07:38	08:08 (5)	16:14
	22:13	21:15	19:53	18:29	9	08:35 (6)
11	04:31	05:30	06:36	07:40	08:11 (5)	16:12
	22:12	21:12	19:50	18:26	5	08:33 (6)
12	04:33	05:32	06:38	07:42	08:29 (9)	16:10
	22:10	21:10	19:47	18:23	7	08:30 (6)
13	04:34	05:34	06:40	07:45	08:26 (9)	16:08
	22:09	21:07	19:44	18:21	12	08:31 (6)
14	04:36	05:37	06:42	07:47	08:24 (9)	16:06
	22:08	21:05	19:41	18:18	14	08:30 (6)
15	04:38	05:39	06:45	07:49	08:24 (9)	16:04
	22:06	21:02	19:38	18:15	16	08:30 (6)
16	04:39	05:41	06:47	07:51	08:23 (9)	16:02
	22:05	21:00	19:36	18:13	17	08:30 (6)
17	04:41	05:43	06:49	07:54	08:25 (9)	16:00
	22:04	20:57	19:33	18:10	15	08:30 (6)
18	04:43	05:45	06:51	07:56	08:27 (9)	15:58
	22:02	20:55	19:30	18:07	13	08:30 (6)
19	04:44	05:47	06:53	07:58	08:29 (9)	15:56
	22:00	20:52	19:27	18:05	10	08:30 (6)
20	04:46	05:49	06:55	08:00	08:32 (9)	15:55
	21:59	20:50	19:24	18:02	6	08:30 (6)
21	04:48	05:51	06:57	08:03	08:34 (9)	15:53
	21:57	20:47	19:22	17:59	3	08:30 (6)
22	04:50	05:54	06:59	08:05	08:37 (9)	15:51
	21:55	20:44	19:19	17:57		15:50
23	04:51	05:56	07:01	08:07		15:48
	21:53	20:42	19:16	17:54		15:46
24	04:53	05:58	07:04	08:09		15:44
	21:52	20:39	19:13	17:52		15:42
25	04:55	06:00	07:06	08:12		15:40
	21:50	20:36	19:10	16:49		15:38
26	04:57	06:02	07:08	08:14	08:24 (6)	15:36
	21:48	20:34	19:08	16:47	5	15:34
27	04:59	06:04	07:10	08:16	08:21 (6)	15:32
	21:46	20:31	19:05	16:44	12	15:30
28	05:01	06:06	07:12	08:18	08:19 (6)	15:28
	21:44	20:28	19:02	16:42	15	15:26
29	05:03	06:09	07:14	08:21	08:18 (6)	15:24
	21:42	20:26	18:59	16:39	18	15:22
30	05:05	06:11	07:16	08:23	08:16 (6)	15:20
	21:40	20:23	18:56	16:37	20	15:18
31	05:07	06:13		08:25	08:16 (6)	15:16
	21:38	20:20		16:34	21	15:14
Potential sun hours	538	474	386	321	241	207
Total, worst case			8	372	328	513
Sun reduction			0.46	0.28	0.08	0.06
Oper. time red.			1.00	1.00	1.00	1.00
Wind dir. red.			1.00	1.00	1.00	1.00
Total reduction			0.46	0.28	0.08	0.06
Total, real			4	105	26	32

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Sviestini - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (471)
Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December	
1	09:00 15:39	08:21 16:40	07:13 17:46	06:47 19:55	05:27 21:01	04:27 22:02	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	7 17:55 (2)	07:27 16:32	15:31 (4) 15:49 (4)
2	09:00 15:40	08:19 16:42	16:03 (4) 17:48	17:15 (2) 06:45	05:25 21:03	04:25 22:04	04:21 22:19	05:11 21:33	06:17 20:14	07:20 18:50	12 17:50 (2)	07:30 16:29	15:31 (4) 15:50 (4)
3	09:00 15:42	08:17 16:44	16:02 (4) 17:50	17:13 (2) 06:42	05:23 21:06	04:24 22:05	04:21 22:19	05:13 21:31	06:19 20:12	07:22 18:48	15 18:05 (2)	07:32 16:27	15:30 (4) 15:49 (4)
4	08:59 15:43	08:15 16:47	16:01 (4) 17:52	17:12 (2) 06:39	05:20 21:08	04:23 22:07	04:22 22:18	05:15 21:28	06:21 20:09	07:25 18:45	17 17:48 (2)	07:34 16:25	15:31 (4) 15:49 (4)
5	08:59 15:45	08:12 16:49	16:01 (4) 17:55	17:11 (2) 06:36	05:18 21:10	04:22 22:08	04:24 22:17	05:17 21:26	06:23 20:06	07:27 18:42	18 18:06 (2)	07:37 16:22	15:30 (4) 15:46 (4)
6	08:58 15:46	08:10 16:52	16:01 (4) 17:57	17:11 (2) 06:34	05:15 21:12	04:21 22:09	04:25 22:16	05:19 21:24	06:25 20:03	07:29 18:39	19 17:47 (2)	07:39 16:20	15:31 (4) 15:44 (4)
7	08:57 15:48	08:08 16:54	16:01 (4) 17:59	17:11 (2) 06:31	05:13 21:14	04:20 22:11	04:26 22:16	05:21 21:22	06:27 20:01	07:31 18:37	18 18:04 (2)	07:41 16:18	15:32 (4) 15:42 (4)
8	08:56 15:49	08:06 16:56	16:01 (4) 18:02	17:11 (2) 06:28	05:11 21:16	04:19 22:12	04:27 22:15	05:23 21:19	06:29 19:58	07:33 18:34	15 18:01 (2)	07:43 16:16	15:32 (4) 15:39 (4)
9	08:56 15:51	08:03 16:59	16:02 (4) 18:04	17:11 (2) 06:25	05:09 21:19	04:18 22:13	04:28 22:14	05:26 21:17	06:32 19:55	07:35 18:31	12 17:59 (2)	07:46 16:14	15:34 (4) 15:37 (4)
10	08:55 15:53	08:01 17:01	16:02 (4) 18:06	17:11 (2) 06:23	05:06 21:21	04:18 22:14	04:30 22:12	05:28 21:14	06:34 19:52	07:38 18:28	9 17:56 (2)	07:48 16:12	15:37 (4) 15:30
11	08:54 15:55	07:59 17:03	16:03 (4) 18:08	17:13 (2) 06:20	05:04 21:23	04:17 22:15	04:31 22:11	05:30 21:12	06:36 19:49	07:40 18:26	6 17:53 (2)	07:50 16:09	15:30 (4) 15:30
12	08:53 15:56	07:56 17:06	16:03 (4) 18:11	17:15 (2) 06:17	05:02 21:25	04:17 22:16	04:33 22:10	05:32 21:10	06:38 19:47	07:42 18:23	2 17:50 (2)	07:53 16:07	15:30 (4) 15:29
13	08:52 15:58	07:54 17:08	16:06 (4) 18:13	17:14 (2) 06:14	05:00 21:27	04:16 22:17	04:34 22:09	05:34 21:07	06:40 19:44	07:44 18:20		07:55 16:05	15:31 (4) 15:29
14	08:51 16:00	07:52 17:11	16:08 (4) 18:15	06:12 20:23	04:58 21:29	04:16 22:18	04:36 22:07	05:36 21:05	06:42 19:41	07:46 18:17		07:57 16:03	15:32 (4) 15:29
15	08:49 16:02	07:49 17:13	16:14 (4) 18:17	06:09 20:26	04:56 21:31	04:15 22:18	05:37 22:06	05:38 21:02	06:44 19:38	07:49 18:15		07:59 16:01	15:33 (4) 15:29
16	08:48 16:04	07:47 17:15	16:16 (4) 18:20	06:06 20:28	04:53 21:33	04:15 22:19	05:39 22:05	05:40 21:00	06:46 19:35	07:51 18:12		08:02 16:00	15:34 (4) 15:29
17	08:47 16:06	07:44 17:18	16:19 (4) 18:22	06:04 20:30	04:51 21:35	04:15 22:20	05:40 22:03	05:43 20:57	06:48 19:32	07:53 18:10		08:04 15:58	15:35 (4) 15:29
18	08:45 16:08	07:42 17:20	16:20 (4) 18:24	06:01 20:32	04:49 21:37	04:15 22:20	05:42 22:02	05:45 20:54	06:51 19:30	07:55 18:07		08:06 15:56	15:36 (4) 15:29
19	08:44 16:10	07:39 17:22	16:23 (4) 18:26	05:58 20:35	04:48 21:39	04:15 22:20	05:44 22:00	05:47 20:52	06:53 19:27	07:58 18:04		08:08 15:54	15:37 (4) 15:29
20	08:42 16:13	07:37 17:25	16:26 (4) 18:28	05:56 20:37	04:46 21:41	04:15 22:21	05:46 21:58	05:49 20:49	06:55 19:24	08:00 18:02		08:10 15:52	15:38 (4) 15:29
21	08:41 16:15	07:34 17:27	16:29 (4) 18:31	05:53 20:39	04:44 21:43	04:15 22:21	05:47 21:57	05:51 20:47	06:57 19:21	08:02 17:59		08:13 15:51	15:39 (4) 15:30
22	08:39 16:17	07:32 17:29	16:32 (4) 18:33	05:50 20:41	04:42 21:45	04:15 22:21	05:49 21:55	05:53 20:44	06:59 19:18	08:04 17:56		08:15 15:49	15:40 (4) 15:30
23	08:38 16:19	07:29 17:32	16:35 (4) 18:35	05:48 20:43	04:40 21:47	04:15 22:21	05:51 21:53	05:55 20:41	07:01 19:16	08:07 17:54		08:17 15:48	15:41 (4) 15:31
24	08:36 16:21	07:26 17:34	16:38 (4) 18:37	05:45 20:46	04:38 21:49	04:15 22:22	05:53 21:51	05:58 20:39	07:03 19:13	08:09 17:51		08:19 15:46	15:42 (4) 15:31
25	08:34 16:24	07:24 17:36	16:41 (4) 18:39	05:43 20:48	04:37 21:51	04:16 22:21	06:00 21:49	06:06 20:36	07:05 19:10	08:10 16:49		07:11 15:45	15:43 (4) 15:32
26	08:32 16:26	07:21 17:39	16:44 (4) 18:42	05:40 20:50	04:35 21:52	04:16 22:21	06:02 21:47	06:07 20:33	07:07 19:07	07:14 16:46		07:14 15:43	15:44 (4) 15:33
27	08:31 16:28	07:19 17:41	16:47 (4) 18:44	05:37 20:52	04:34 21:54	04:17 22:21	06:04 21:45	07:10 20:31	07:16 19:04	07:16 16:44		07:16 15:42	15:45 (4) 15:34
28	08:29 16:30	07:16 17:43	16:50 (4) 18:46	05:35 20:54	04:32 21:56	04:17 22:21	06:01 21:43	06:06 20:28	07:12 19:02	07:18 16:41	15:36 (4) 8 15:44 (4)	08:27 15:41	15:46 (4) 15:34
29	08:27 16:33		16:53 (4) 19:48	05:32 20:57	04:31 21:58	04:18 22:21	06:08 21:41	06:08 20:25	07:14 18:59	07:20 16:39	12 15:47 (4)	08:29 15:39	15:47 (4) 15:35
30	08:25 16:35		16:56 (4) 19:50	05:30 20:59	04:29 21:59	04:19 22:20	06:05 21:39	06:10 20:23	07:16 18:56	07:23 16:37	15 15:48 (4)	08:31 15:38	15:48 (4) 15:37
31	08:23 16:37		16:59 (4) 19:53	05:28 22:01	04:28 22:01	04:17 22:21	06:12 21:37	07:25 20:20	07:25 16:34	07:25 15:49 (4)	17 15:49 (4)	08:32 15:49 (4)	15:49 (4) 15:38
Potential sun hours	227	262	365	429	515	539	538	474	386	321	241	123	207
Total, worst case		167	145							202		0.28	
Sun reduction		0.19	0.40							0.28		0.08	
Oper. time red.		1.00	1.00							1.00		1.00	
Wind dir. red.		1.00	1.00							1.00		1.00	
Total reduction		0.19	0.40							0.28		0.08	
Total, real		32	58							57	10		

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Last time (hh:mm) with flicker	(WTG causing flicker last time)

Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Seli 10 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (486)
 Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June
1	09:00	08:21	15:45 (11)	07:13	16:51 (4)	06:47
	15:39	16:40	16:01 (11)	17:46	17:08 (4)	19:55
2	09:00	08:19	15:46 (11)	07:11	16:53 (4)	06:45
	15:40	16:42	16:00 (11)	17:48	17:07 (4)	19:57
3	08:59	08:17	15:46 (11)	07:08	16:54 (4)	06:42
	15:42	16:44	15:59 (11)	17:50	17:05 (4)	19:59
4	08:59	08:14	15:48 (11)	07:05	16:57 (4)	06:39
	15:43	16:47	15:58 (11)	17:52	17:02 (4)	20:01
5	08:58	08:12	15:52 (11)	07:02	16:56 (4)	06:36
	15:45	16:49	15:56 (11)	17:55	20:04	21:10
6	08:58	08:10	15:56 (11)	07:00	16:54 (4)	06:34
	15:46	16:52	17:57	20:06	21:12	22:09
7	08:57	08:08	16:57	17:59	20:08	21:14
	15:48	16:54	17:59	20:08	21:14	22:11
8	08:56	08:06	16:54	17:59	20:08	21:14
	15:49	16:56	18:02	20:10	21:16	22:12
9	08:56	08:03	16:52	17:57	20:06	21:12
	15:51	16:59	18:04	20:12	21:19	22:13
10	08:55	08:01	16:49	17:56	20:03	21:09
	15:53	17:01	18:06	20:15	21:21	22:14
11	08:54	07:59	16:46	17:55	20:00	21:04
	15:55	17:03	18:08	20:17	21:23	22:15
12	08:53	07:56	16:43	17:54	20:00	21:02
	15:56	17:06	18:11	20:19	21:25	22:16
13	08:52	07:54	16:41	17:52	20:00	21:00
	15:58	17:08	18:13	20:21	21:27	22:17
14	08:51	07:52	16:38	17:51	20:00	21:00
	16:00	17:11	18:15	20:23	21:29	22:18
15	08:49	07:49	16:35	17:50	20:00	21:00
	16:02	17:13	18:17	20:26	21:31	22:18
16	08:48	07:47	16:32	17:50	20:00	21:00
	16:04	17:15	18:20	20:28	21:33	22:19
17	08:47	07:44	16:29	17:50	20:00	21:00
	16:06	17:18	18:22	20:30	21:35	22:19
18	08:45	07:42	16:27	17:50	20:00	21:00
	16:08	17:20	18:24	20:32	21:37	22:20
19	08:44	07:39	16:24	17:50	20:00	21:00
	16:10	17:22	18:26	20:35	21:39	22:20
20	08:42	07:37	16:21	17:50	20:00	21:00
	16:13	17:25	18:28	20:37	21:41	22:21
21	08:41	07:34	16:18	17:50	20:00	21:00
	16:15	17:27	18:31	20:39	21:43	22:21
22	08:39	07:32	16:15	17:50	20:00	21:00
	16:17	17:29	18:33	20:41	21:45	22:21
23	08:38	07:29	16:13	17:50	20:00	21:00
	16:19	17:32	18:35	20:43	21:47	22:21
24	08:36	07:26	16:10	17:50	20:00	21:00
	16:21	17:34	18:37	20:46	21:49	22:21
25	08:34	07:24	16:07	17:50	20:00	21:00
	16:24	17:36	18:39	20:48	21:51	22:21
26	08:32	07:21	16:04	17:50	20:00	21:00
	16:26	17:39	18:42	20:50	21:52	22:21
27	08:31	07:19	16:01	17:50	20:00	21:00
	16:28	17:41	18:44	20:52	21:54	22:21
28	08:29	07:16	16:00	17:50	20:00	21:00
	16:30	17:43	18:46	20:54	21:56	22:21
29	08:27	07:14	16:00	17:50	20:00	21:00
	16:33	17:45	18:48	20:56	21:58	22:21
30	08:25	07:12	16:00	17:50	20:00	21:00
	16:35	17:47	18:50	20:58	21:59	22:21
31	08:23	07:10	16:00	17:50	20:00	21:00
	16:37	17:49	18:53	21:00	22:01	23:01
Potential sun hours	227	262	365	429	515	539
Total, worst case	61	148	159			
Sun reduction	0.11	0.19	0.40			
Oper. time red.	1.00	1.00	1.00			
Wind dir. red.	1.00	1.00	1.00			
Total reduction	0.11	0.19	0.40			
Total, real	7	29	64			

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Seli 10 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (486)
 Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	July	August	September	October	November	December
1	04:20	05:09	06:15	07:18	07:27	08:33
	22:20	21:35	20:17	18:53	16:32	15:37
2	04:21	05:11	06:17	07:20	07:30	08:34
	22:19	21:33	20:14	18:50	16:29	15:36
3	04:21	05:13	06:19	07:22	07:32	08:36
	22:19	21:31	20:12	18:48	16:27	15:35
4	04:22	05:15	06:21	07:25	07:34	08:38
	22:18	21:28	20:09	18:45	16:25	15:34
5	04:24	05:17	06:23	07:27	07:36	08:40
	22:17	21:26	20:06	18:42	16:22	15:33
6	04:25	05:19	06:25	07:29	07:39	15:21 (11) 08:41
	22:16	21:24	20:03	18:39	16:20	5 15:26 (11) 15:32
7	04:26	05:21	06:27	07:31	07:41	15:19 (11) 08:43
	22:15	21:22	20:00	18:37	16:18	10 15:29 (11) 15:32
8	04:27	05:23	06:29	07:33	07:43	15:17 (11) 08:44
	22:14	21:19	19:58	18:34	16:16	13 15:30 (11) 15:31
9	04:28	05:26	06:32	07:35	07:46	15:17 (11) 08:46
	22:13	21:17	19:55	18:31	16:14	14 15:31 (11) 15:31
10	04:30	05:28	06:34	07:38	17:30 (4) 07:48	15:16 (11) 08:47
	22:12	21:14	19:52	18:28	9 17:39 (4) 16:12	15 15:31 (11) 15:30
11	04:31	05:30	06:36	07:40	17:27 (4) 07:50	15:16 (11) 08:49
	22:11	21:12	19:49	18:26	13 17:40 (4) 16:09	16 15:32 (11) 15:30
12	04:33	05:32	06:38	07:42	17:25 (4) 07:53	15:15 (11) 08:50
	22:10	21:10	19:47	18:23	16 17:41 (4) 16:07	14 15:29 (11) 15:29
13	04:34	05:34	06:40	07:44	17:25 (4) 07:55	15:16 (11) 08:51
	22:09	21:07	19:44	18:20	17 17:42 (4) 16:05	11 15:27 (11) 15:29
14	04:36	05:36	06:42	07:46	17:24 (4) 07:57	15:16 (11) 08:52
	22:07	21:05	19:41	18:17	18 17:42 (4) 16:03	9 15:25 (11) 15:29
15	04:37	05:38	06:44	18:45 (2) 07:49	17:23 (4) 07:59	15:16 (11) 08:53
	22:06	21:02	19:38	10 18:55 (2) 18:15	18 17:41 (4) 16:02	7 15:23 (11) 15:29
16	04:39	05:40	06:46	18:43 (2) 07:51	17:23 (4) 08:02	15:17 (11) 08:54
	22:05	21:00	19:35	13 18:56 (2) 18:12	16 17:39 (4) 16:00	4 15:21 (11) 15:29
17	04:40	05:43	06:48	18:41 (2) 07:53	17:23 (4) 08:04	08:55
	22:03	20:57	19:32	16 18:57 (2) 18:09	13 17:36 (4) 15:58	15:29
18	04:42	05:45	06:51	18:40 (2) 07:55	17:24 (4) 08:06	08:56
	22:02	20:54	19:30	17 18:57 (2) 18:07	10 17:34 (4) 15:56	15:29
19	04:44	05:47	06:53	18:39 (2) 07:58	17:24 (4) 08:08	08:57
	22:00	20:52	19:27	17 18:56 (2) 18:04	7 17:31 (4) 15:54	15:29
20	04:46	05:49	06:55	18:39 (2) 08:00	17:25 (4) 08:10	08:58
	21:58	20:49	19:24	14 18:53 (2) 18:02	3 17:28 (4) 15:52	15:29
21	04:47	05:51	06:57	18:38 (2) 08:02	08:13	08:58
	21:57	20:47	19:21	12 18:50 (2) 17:59	15:51	15:30
22	04:49	05:53	06:59	18:38 (2) 08:04	08:15	08:59
	21:55	20:44	19:18	9 18:47 (2) 17:56	15:49	15:30
23	04:51	05:55	07:01	18:40 (2) 08:07	08:17	08:59
	21:53	20:41	19:16	5 18:45 (2) 17:54	15:48	15:31
24	04:53	05:58	07:03	18:41 (2) 08:09	08:19	09:00
	21:51	20:39	19:13	1 18:42 (2) 17:51	15:46	15:31
25	04:55	06:00	07:05	07:11	08:21	09:00
	21:49	20:36	19:10	16:49	15:45	15:32
26	04:57	06:02	07:07	07:13	08:23	09:00
	21:47	20:33	19:07	16:46	15:43	15:33
27	04:59	06:04	07:10	07:16	08:25	09:00
	21:45	20:31	19:04	16:44	15:42	15:34
28	05:01	06:06	07:12	07:18	08:27	09:01
	21:43	20:28	19:02	16:41	15:41	15:34
29	05:03	06:08	07:14	07:20	08:29	09:01
	21:41	20:25	18:59	16:39	15:39	15:35
30	05:05	06:10	07:16	07:23	08:31	09:01
	21:39	20:23	18:56	16:36	15:38	15:37
31	05:07	06:12		07:25		09:00
	21:37	20:20		16:34		15:38
Potential sun hours	538	474	386	321	241	207
Total, worst case			114	140	118	
Sun reduction			0.46	0.28	0.08	
Oper. time red.			1.00	1.00	1.00	
Wind dir. red.			1.00	1.00	1.00	
Total reduction			0.46	0.28	0.08	
Total, real			53	40	9	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Seli 12 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (457)
 Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June
1	09:00	08:21	15:41 (11)	07:13	16:48 (4)	06:47
	15:39	16:40	15:54 (11)	17:46	17:01 (4)	19:55
2	09:00	08:19	15:43 (11)	07:11	16:51 (4)	06:45
	15:40	16:42	15:54 (11)	17:48	16:59 (4)	19:57
3	08:59	08:17	15:45 (11)	07:08	16:42	05:23
	15:42	16:44	15:51 (11)	17:50	19:59	21:05
4	08:59	08:14		07:05	06:39	05:20
	15:43	16:47		17:52	20:01	21:08
5	08:58	08:12		07:02	06:36	05:18
	15:45	16:49		17:55	20:04	21:10
6	08:58	08:10		07:00	06:34	05:15
	15:46	16:52		17:57	20:06	21:12
7	08:57	08:08		06:57	06:31	05:13
	15:48	16:54		17:59	20:08	21:14
8	08:56	08:06		06:54	06:28	05:11
	15:49	16:56		18:02	20:10	21:16
9	08:56	08:03		06:52	06:25	05:09
	15:51	16:59		18:04	20:12	21:19
10	08:55	08:01		06:49	06:23	05:06
	15:53	17:01		18:06	20:15	21:21
11	08:54	07:59		06:46	06:20	05:04
	15:55	17:03		18:08	20:17	21:23
12	08:53	07:56		06:43	06:17	05:02
	15:56	17:06		18:11	20:19	21:25
13	08:52	07:54		06:41	06:14	05:00
	15:58	17:08		18:13	20:21	21:27
14	08:51	07:52		06:38	06:12	04:58
	16:00	17:11		18:15	20:23	21:29
15	08:49	07:49		06:35	06:09	04:56
	16:02	17:13		18:17	20:26	21:31
16	08:48	07:47		06:32	06:06	04:53
	16:04	17:15		18:20	20:28	21:33
17	08:47	07:44		06:29	06:04	04:51
	16:06	17:18		18:22	20:30	21:35
18	08:45	07:42		06:27	17:53 (2)	06:01
	16:08	17:20		18:24	17:55 (2)	20:32
19	08:44	07:39		06:24	17:51 (2)	05:58
	16:10	17:22		18:26	17:57 (2)	20:35
20	08:42	07:37	16:49 (4)	06:21	17:50 (2)	05:56
	16:13	17:25	16:53 (4)	18:28	17:59 (2)	20:37
21	08:41	07:34	16:47 (4)	06:18	17:49 (2)	05:53
	16:15	17:27	16:55 (4)	18:31	18:01 (2)	20:39
22	08:39	07:32	16:47 (4)	06:15	17:48 (2)	05:50
	16:17	17:29	16:58 (4)	18:33	18:03 (2)	20:41
23	08:38	15:39 (11)	07:29	06:13	17:49 (2)	05:48
	16:19	15:40 (11)	17:32	17:01 (4)	18:06 (2)	20:43
24	08:36	15:39 (11)	07:26	06:10	17:49 (2)	05:45
	16:21	15:43 (11)	17:34	17:03 (4)	18:06 (2)	20:46
25	08:34	15:39 (11)	07:24	06:07	17:49 (2)	05:43
	16:24	15:45 (11)	17:36	17:05 (4)	18:04 (2)	20:48
26	08:32	15:39 (11)	07:21	06:04	17:50 (2)	05:40
	16:26	15:48 (11)	17:39	17:05 (4)	18:03 (2)	20:50
27	08:31	15:38 (11)	07:19	06:01	17:51 (2)	05:37
	16:28	15:50 (11)	17:41	17:04 (4)	18:00 (2)	20:52
28	08:29	15:39 (11)	07:16	05:59		05:35
	16:30	15:52 (11)	17:43	17:02 (4)		20:54
29	08:27	15:39 (11)		06:56		05:32
	16:33	15:55 (11)		19:48		20:57
30	08:25	15:40 (11)		06:53		05:30
	16:35	15:56 (11)		19:50		20:59
31	08:23	15:40 (11)		06:50		
	16:37	15:55 (11)		19:53		22:01
Potential sun hours	227	262	365	429	515	539
Total, worst case	92	154	136			
Sun reduction	0.11	0.19	0.40			
Oper. time red.	1.00	1.00	1.00			
Wind dir. red.	1.00	1.00	1.00			
Total reduction	0.11	0.19	0.40			
Total, real	10	30	55			

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Seli 12 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (457)
 Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	July	August	September	October	November	December
1	04:20	05:09	06:15	07:18	07:27	08:33
	22:20	21:35	20:17	18:53	16:32	15:37
2	04:21	05:11	06:17	07:20	07:30	08:34
	22:19	21:33	20:14	18:50	16:29	15:36
3	04:21	05:13	06:19	07:22	07:32	08:36
	22:19	21:31	20:12	18:48	16:27	15:35
4	04:22	05:15	06:21	07:25	07:34	08:38
	22:18	21:28	20:09	18:45	16:25	15:34
5	04:24	05:17	06:23	07:27	07:36	08:40
	22:17	21:26	20:06	18:42	16:22	15:33
6	04:25	05:19	06:25	07:29	07:39	08:41
	22:16	21:24	20:03	18:39	16:20	15:32
7	04:26	05:21	06:27	07:31	07:41	08:43
	22:15	21:22	20:00	18:37	16:18	15:32
8	04:27	05:23	06:29	07:33	07:43	15:15 (11) 08:44
	22:14	21:19	19:58	18:34	16:16	7 15:22 (11) 15:31
9	04:28	05:26	06:32	07:35	07:46	15:14 (11) 08:46
	22:13	21:17	19:55	18:31	16:14	10 15:24 (11) 15:31
10	04:30	05:28	06:34	07:38	07:48	15:12 (11) 08:47
	22:12	21:14	19:52	18:28	16:12	13 15:25 (11) 15:30
11	04:31	05:30	06:36	07:40	07:50	15:12 (11) 08:49
	22:11	21:12	19:49	18:26	16:09	15 15:27 (11) 15:30
12	04:33	05:32	06:38	07:42	17:23 (4) 07:53	15:11 (11) 08:50
	22:10	21:10	19:47	18:23	10 17:33 (4) 16:07	16 15:27 (11) 15:29
13	04:34	05:34	06:40	07:44	17:21 (4) 07:55	15:11 (11) 08:51
	22:09	21:07	19:44	18:20	14 17:35 (4) 16:05	16 15:27 (11) 15:29
14	04:36	05:36	06:42	07:46	17:20 (4) 07:57	15:11 (11) 08:52
	22:07	21:05	19:41	18:17	16 17:36 (4) 16:03	14 15:25 (11) 15:29
15	04:37	05:38	06:44	07:49	17:18 (4) 07:59	15:11 (11) 08:53
	22:06	21:02	19:38	18:15	18 17:36 (4) 16:02	12 15:23 (11) 15:29
16	04:39	05:40	06:46	18:42 (2) 07:51	17:18 (4) 08:02	15:12 (11) 08:54
	22:05	21:00	19:35	7 18:49 (2) 18:12	19 17:37 (4) 16:00	9 15:21 (11) 15:29
17	04:40	05:43	06:48	18:39 (2) 07:53	17:18 (4) 08:04	15:12 (11) 08:55
	22:03	20:57	19:32	12 18:51 (2) 18:09	18 17:36 (4) 15:58	6 15:18 (11) 15:29
18	04:42	05:45	06:51	18:37 (2) 07:55	17:18 (4) 08:06	15:13 (11) 08:56
	22:02	20:54	19:30	15 18:52 (2) 18:07	16 17:34 (4) 15:56	4 15:17 (11) 15:29
19	04:44	05:47	06:53	18:36 (2) 07:58	17:18 (4) 08:08	15:13 (11) 08:57
	22:00	20:52	19:27	16 18:52 (2) 18:04	13 17:31 (4) 15:54	1 15:14 (11) 15:29
20	04:46	05:49	06:55	18:35 (2) 08:00	17:18 (4) 08:10	08:58
	21:58	20:49	19:24	17 18:52 (2) 18:02	10 17:28 (4) 15:52	15:29
21	04:47	05:51	06:57	18:34 (2) 08:02	17:19 (4) 08:13	08:58
	21:57	20:47	19:21	16 18:50 (2) 17:59	7 17:26 (4) 15:51	15:30
22	04:49	05:53	06:59	18:33 (2) 08:04	17:20 (4) 08:15	08:59
	21:55	20:44	19:18	14 18:47 (2) 17:56	2 17:22 (4) 15:49	15:30
23	04:51	05:55	07:01	18:34 (2) 08:07	08:17	08:59
	21:53	20:41	19:16	11 18:45 (2) 17:54	15:48	15:31
24	04:53	05:58	07:03	18:34 (2) 08:09	08:19	09:00
	21:51	20:39	19:13	8 18:42 (2) 17:51	15:46	15:31
25	04:55	06:00	07:05	18:35 (2) 07:11	08:21	09:00
	21:49	20:36	19:10	4 18:39 (2) 16:49	15:45	15:32
26	04:57	06:02	07:07	07:13	08:23	09:00
	21:47	20:33	19:07	16:46	15:43	15:33
27	04:59	06:04	07:10	07:16	08:25	09:00
	21:45	20:31	19:04	16:44	15:42	15:34
28	05:01	06:06	07:12	07:18	08:27	09:01
	21:43	20:28	19:02	16:41	15:41	15:34
29	05:03	06:08	07:14	07:20	08:29	09:01
	21:41	20:25	18:59	16:39	15:39	15:35
30	05:05	06:10	07:16	07:23	08:31	09:01
	21:39	20:23	18:56	16:37	15:38	15:37
31	05:07	06:12		07:25		09:00
	21:37	20:20		16:34		15:38
Potential sun hours	538	474	386	321	241	207
Total, worst case			120	143	123	
Sun reduction			0.46	0.28	0.08	
Oper. time red.			1.00	1.00	1.00	
Wind dir. red.			1.00	1.00	1.00	
Total reduction			0.46	0.28	0.08	
Total, real			55	40	10	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Seli Maja 18 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (464)
Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June
1	09:00 15:39	08:21 16:40	07:13 17:46	06:47 19:55	05:27 21:01	04:27 22:02
2	09:00 15:40	08:19 16:42	07:11 17:48	06:45 19:57	05:25 21:03	04:25 22:04
3	08:59 15:42	08:17 16:44	07:08 17:50	06:42 19:59	05:23 21:05	04:24 22:05
4	08:59 15:43	08:14 16:47	07:05 17:52	06:39 20:01	05:20 21:08	04:23 22:07
5	08:58 15:45	08:12 16:49	07:02 17:55	06:36 20:04	05:18 21:10	04:22 22:08
6	08:58 15:46	08:10 16:52	07:00 17:57	06:34 20:06	05:15 21:12	04:21 22:09
7	08:57 15:48	08:08 16:54	06:57 17:59	06:31 20:08	05:13 21:14	04:20 22:11
8	08:56 15:49	08:06 16:56	06:54 18:02	06:28 20:10	05:11 21:16	04:19 22:12
9	08:56 15:51	08:03 16:59	16:24 (4) 06:52 16:25 (4) 18:04	06:25 20:12	05:09 21:19	04:18 22:13
10	08:55 15:53	08:01 17:01	16:22 (4) 06:49 16:27 (4) 18:06	17:33 (2) 06:23 17:36 (2) 20:15	05:06 21:21	04:18 22:14
11	08:54 15:55	15:09 (11) 17:03 15:11 (11) 17:03	07:59 16:22 (4) 06:46 16:30 (4) 18:08	17:31 (2) 06:20 17:39 (2) 20:17	05:04 21:23	04:17 22:15
12	08:53 15:56	15:10 (11) 17:06 15:13 (11) 17:06	07:56 16:21 (4) 06:43 16:32 (4) 18:11	17:31 (2) 06:17 17:42 (2) 20:19	05:02 21:25	04:17 22:16
13	08:52 15:58	15:09 (11) 17:08 15:15 (11) 17:08	07:54 16:21 (4) 06:41 16:35 (4) 18:13	17:30 (2) 06:14 17:44 (2) 20:21	05:00 21:27	04:16 22:17
14	08:51 16:00	15:10 (11) 17:11 15:18 (11) 17:11	07:52 16:20 (4) 06:38 16:38 (4) 18:15	17:29 (2) 06:12 17:46 (2) 20:23	04:58 21:29	04:16 22:18
15	08:49 16:02	15:10 (11) 17:13 15:20 (11) 17:13	07:49 16:20 (4) 06:35 16:40 (4) 18:17	17:29 (2) 06:09 17:48 (2) 20:26	04:56 21:31	04:15 22:18
16	08:48 16:04	15:11 (11) 17:15 15:23 (11) 17:15	07:47 16:20 (4) 06:32 16:40 (4) 18:20	06:06 17:47 (2) 20:28	04:53 21:33	04:15 22:19
17	08:47 16:06	15:11 (11) 17:18 15:25 (11) 17:18	07:44 16:20 (4) 06:29 16:39 (4) 18:22	06:04 17:30 (2) 20:30	04:51 21:35	04:15 22:20
18	08:45 16:08	15:11 (11) 17:20 15:27 (11) 17:20	07:42 16:21 (4) 06:27 16:38 (4) 18:24	06:01 17:30 (2) 20:32	04:49 21:37	04:15 22:20
19	08:44 16:10	15:11 (11) 17:22 15:28 (11) 17:22	07:39 16:22 (4) 06:24 16:38 (4) 18:26	05:58 17:31 (2) 20:35	04:48 21:39	04:15 22:20
20	08:42 16:13	15:13 (11) 17:25 15:29 (11) 17:25	07:37 16:23 (4) 06:21 16:36 (4) 18:28	05:56 17:33 (2) 20:37	04:46 21:41	04:15 22:21
21	08:41 16:15	15:13 (11) 17:27 15:28 (11) 17:27	07:34 16:25 (4) 06:18 16:34 (4) 18:31	05:53 20:39	04:44 21:43	04:15 22:21
22	08:39 16:17	15:14 (11) 17:32 15:28 (11) 17:29	06:15 18:33	05:50 20:41	04:42 21:45	04:15 22:21
23	08:38 16:19	15:15 (11) 17:29 15:27 (11) 17:32	06:13 18:35	05:48 20:43	04:40 21:47	04:15 22:21
24	08:36 16:21	15:17 (11) 17:34 15:26 (11) 17:34	06:10 18:37	05:45 20:46	04:39 21:49	04:15 22:21
25	08:34 16:24	15:20 (11) 17:36 15:24 (11) 17:36	06:07 18:39	05:43 20:48	04:37 21:51	04:16 22:21
26	08:32 16:26	07:21 17:39	06:04 18:42	05:40 20:50	04:35 21:52	04:16 22:21
27	08:31 16:28	07:19 17:41	06:01 18:44	05:37 20:52	04:34 21:54	04:17 22:21
28	08:29 16:30	07:16 17:43	05:59 18:46	05:35 20:54	04:32 21:56	04:17 22:21
29	08:27 16:33		06:56 19:48	05:32 20:57	04:31 21:58	04:18 22:21
30	08:25 16:35		06:53 19:50	05:30 20:59	04:29 21:59	04:19 22:20
31	08:23 16:37		06:50 19:53		04:28 22:01	
Potential sun hours	227	262	365	429	515	539
Total, worst case	158	171	146			
Sun reduction	0.11	0.19	0.40			
Oper. time red.	1.00	1.00	1.00			
Wind dir. red.	1.00	1.00	1.00			
Total reduction	0.11	0.19	0.40			
Total, real	17	33	59			

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Seli Maja 18 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (464)
Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	July	August	September	October	November	December
1	04:20	05:09	06:15	07:18	18:10 (2)	07:27
	22:20	21:35	20:17	18:53	12 18:22 (2)	16:32
2	04:21	05:11	06:17	07:20	18:10 (2)	07:30
	22:19	21:33	20:14	18:50	9 18:19 (2)	16:29
3	04:21	05:13	06:19	07:22	18:10 (2)	07:32
	22:19	21:31	20:12	18:48	6 18:16 (2)	16:27
4	04:22	05:15	06:21	07:25	18:11 (2)	07:34
	22:18	21:28	20:09	18:45	2 18:13 (2)	16:25
5	04:24	05:17	06:23	07:27	07:37	08:40
	22:17	21:26	20:06	18:42	16:22	15:33
6	04:25	05:19	06:25	07:29	07:39	08:41
	22:16	21:24	20:03	18:39	16:20	15:32
7	04:26	05:21	06:27	07:31	07:41	08:43
	22:15	21:22	20:01	18:37	16:18	15:32
8	04:27	05:23	06:29	07:33	07:43	08:44
	22:15	21:19	19:58	18:34	16:16	15:31
9	04:28	05:26	06:32	07:35	07:46	08:46
	22:14	21:17	19:55	18:31	16:14	15:31
10	04:30	05:28	06:34	07:38	07:48	08:47
	22:12	21:14	19:52	18:28	16:12	15:30
11	04:31	05:30	06:36	07:40	07:50	08:49
	22:11	21:12	19:49	18:26	16:09	15:30
12	04:33	05:32	06:38	07:42	07:53	08:50
	22:10	21:10	19:47	18:23	16:07	15:29
13	04:34	05:34	06:40	07:44	07:55	08:51
	22:09	21:07	19:44	18:20	16:05	15:29
14	04:36	05:36	06:42	07:46	07:57	08:52
	22:07	21:05	19:41	18:17	16:03	15:29
15	04:37	05:38	06:44	07:49	07:59	08:53
	22:06	21:02	19:38	18:15	16:02	15:29
16	04:39	05:40	06:46	07:51	08:02	08:54
	22:05	21:00	19:35	18:12	16:00	15:29
17	04:40	05:43	06:48	07:53	08:04	14:53 (11)
	22:03	20:57	19:32	18:10	15:58	4 14:57 (11)
18	04:42	05:45	06:51	07:55	08:06	14:51 (11)
	22:02	20:54	19:30	18:07	15:56	9 15:00 (11)
19	04:44	05:47	06:53	07:58	08:08	14:49 (11)
	22:00	20:52	19:27	18:04	15:54	12 15:01 (11)
20	04:46	05:49	06:55	08:00	16:58 (4)	08:10
	21:58	20:49	19:24	18:02	4 17:02 (4)	15:52
21	04:47	05:51	06:57	08:02	16:55 (4)	08:13
	21:57	20:47	19:21	17:59	11 17:06 (4)	15:51
22	04:49	05:53	06:59	08:04	16:53 (4)	08:15
	21:55	20:44	19:18	17:56	14 17:07 (4)	15:49
23	04:51	05:55	07:01	08:07	16:52 (4)	08:17
	21:53	20:41	19:16	6 18:25 (2)	17:54	17 17:09 (4)
24	04:53	05:58	07:03	18:15 (2)	08:09	16:51 (4)
	21:51	20:39	19:13	12 18:27 (2)	17:51	18 17:09 (4)
25	04:55	06:00	07:05	18:13 (2)	07:11	15:51 (4)
	21:49	20:36	19:10	15 18:28 (2)	16:49	19 16:10 (4)
26	04:57	06:02	07:07	18:12 (2)	07:13	15:50 (4)
	21:47	20:33	19:07	17 18:29 (2)	16:46	19 16:09 (4)
27	04:59	06:04	07:10	18:10 (2)	07:16	15:50 (4)
	21:45	20:31	19:04	19 18:29 (2)	16:44	20 16:10 (4)
28	05:01	06:06	07:12	18:10 (2)	07:18	15:50 (4)
	21:43	20:28	19:02	19 18:29 (2)	16:41	16 16:06 (4)
29	05:03	06:08	07:14	18:09 (2)	07:20	15:50 (4)
	21:41	20:25	18:59	18 18:27 (2)	16:39	14 16:04 (4)
30	05:05	06:10	07:16	18:10 (2)	07:23	15:50 (4)
	21:39	20:23	18:56	15 18:25 (2)	16:37	11 16:01 (4)
31	05:07	06:12			07:25	15:52 (4)
	21:37	20:20			7 15:59 (4)	
Potential sun hours	538	474	386	321	241	207
Total, worst case			121	199	161	2
Sun reduction			0.46	0.28	0.08	0.06
Oper. time red.			1.00	1.00	1.00	1.00
Wind dir. red.			1.00	1.00	1.00	1.00
Total reduction			0.46	0.28	0.08	0.06
Total, real			56	56	13	0

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa
Assumptions for shadow calculations

Shadow receptor: Sili - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (446)
Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:00 15:40	08:21 16:40	07:13 17:46	06:48 19:55	05:28 21:01	04:27 22:02	04:20 22:19	05:09 21:35	06:15 20:17	07:18 18:53	07:27 16:32	08:32 15:37
2	09:00 15:41	08:19 16:42	07:11 17:48	06:45 19:57	05:25 21:03	04:26 22:04	04:21 22:19	05:11 21:33	06:17 20:14	07:20 18:50	07:29 16:30	08:34 15:36
3	08:59 15:42	08:16 16:45	07:08 17:50	06:42 19:59	05:23 21:05	04:25 22:05	04:22 22:18	05:13 21:30	06:19 20:12	07:22 18:48	07:32 16:27	08:36 15:35
4	08:59 15:44	08:14 16:47	07:05 17:53	06:39 20:01	05:20 21:08	04:23 22:06	04:23 22:18	05:15 21:28	06:21 20:09	07:25 18:45	07:34 16:25	08:38 15:34
5	08:58 15:45	08:12 16:49	07:02 17:55	06:36 20:04	05:18 21:10	04:22 22:08	04:24 22:17	05:17 21:26	06:23 20:06	07:27 18:42	07:36 16:23	08:39 15:34
6	08:58 15:47	08:10 16:52	07:00 17:57	06:34 20:06	05:16 21:12	04:21 22:09	04:25 22:16	05:19 21:24	06:25 20:03	07:29 18:39	07:39 16:20	08:41 15:33
7	08:57 15:48	08:08 16:54	06:57 17:59	06:31 20:08	05:13 21:14	04:20 22:10	04:26 22:15	05:22 21:21	06:27 20:00	07:31 18:37	07:41 16:18	08:43 15:32
8	08:56 15:50	08:06 16:56	06:54 18:02	06:28 20:10	05:11 21:16	04:20 22:12	04:27 22:14	05:24 21:19	06:30 19:58	07:33 18:34	07:43 16:16	08:44 15:31
9	08:55 15:51	08:03 16:59	06:52 18:04	06:25 20:12	05:09 21:18	04:19 22:13	04:29 22:13	05:26 21:17	06:32 19:55	07:35 18:31	07:46 16:14	08:46 15:31
10	08:54 15:53	08:01 17:01	06:49 18:06	06:23 20:15	05:07 21:21	04:18 22:14	04:30 22:12	05:28 21:14	06:34 19:52	07:38 18:28	07:48 16:12	08:47 15:30
11	08:54 15:55	07:59 17:04	06:46 18:08	06:20 20:17	05:04 21:23	04:17 22:15	04:31 22:11	05:30 21:12	06:36 19:49	07:40 18:26	07:50 16:10	08:48 15:30
12	08:53 15:57	07:56 17:06	06:43 18:11	06:17 20:19	05:02 21:25	04:17 22:16	04:33 22:10	05:32 21:09	06:38 19:47	07:42 18:23	07:52 16:08	08:50 15:30
13	08:51 15:59	07:54 17:08	06:41 18:13	06:14 20:21	05:00 21:27	04:16 22:16	04:34 22:08	05:34 21:07	06:40 19:44	07:44 18:20	07:55 16:06	08:51 15:29
14	08:50 16:01	07:51 17:11	06:38 18:15	06:12 20:23	04:58 21:29	04:16 22:17	04:36 22:07	05:36 21:04	06:42 19:41	07:46 18:18	07:57 16:04	08:52 15:29
15	08:49 16:03	07:49 17:13	06:35 18:17	06:09 20:26	04:56 21:31	04:16 22:18	04:38 22:06	05:39 21:02	06:44 19:38	07:49 18:15	07:59 16:02	08:53 15:29
16	08:48 16:05	07:47 17:15	06:32 18:20	06:06 20:28	04:54 21:33	04:15 22:19	04:39 22:04	05:41 20:59	06:46 19:35	07:51 18:12	08:01 16:00	08:54 15:29
17	08:47 16:07	07:44 17:18	06:29 18:22	06:04 20:30	04:52 21:35	04:15 22:19	04:41 22:03	05:43 20:57	06:48 19:32	07:53 18:10	08:04 15:58	08:55 15:29
18	08:45 16:09	07:42 17:20	06:27 18:24	06:01 20:32	04:50 21:37	04:15 22:20	04:42 22:01	05:45 20:54	06:51 19:30	07:55 18:07	08:06 15:56	08:56 15:29
19	08:44 16:11	07:39 17:22	06:24 18:26	05:58 20:34	04:48 21:39	04:15 22:20	04:44 22:00	05:47 20:52	06:53 19:27	07:58 18:04	08:08 15:54	08:57 15:29
20	08:42 16:13	07:37 17:25	06:21 18:28	05:56 20:37	04:46 21:41	04:15 22:20	04:46 21:58	05:49 20:49	06:55 19:24	08:00 18:02	08:10 15:53	08:57 15:30
21	08:41 16:15	07:34 17:27	06:18 18:31	05:53 20:39	04:44 21:43	04:15 22:21	04:48 21:56	05:51 20:47	06:57 19:21	08:02 17:59	08:12 15:51	08:58 15:30
22	08:39 16:17	07:32 17:30	06:16 18:33	05:50 20:41	04:42 21:45	04:15 22:21	04:50 21:55	05:53 20:44	06:59 19:18	08:04 17:57	08:15 15:49	08:59 15:31
23	08:37 16:19	07:29 17:32	06:13 18:35	05:48 20:43	04:41 21:47	04:15 22:21	04:51 21:53	05:56 20:41	07:01 19:16	08:07 17:54	08:17 15:48	08:59 15:31
24	08:36 16:22	07:26 17:34	06:10 18:37	05:45 20:46	04:39 21:49	04:16 22:21	04:53 21:51	05:58 20:39	07:03 19:13	08:09 17:52	08:19 15:46	08:59 15:32
25	08:34 16:24	07:24 17:36	06:07 18:39	05:43 20:48	04:37 21:50	04:16 22:21	04:55 21:49	06:00 20:36	07:05 19:10	07:11 16:49	08:21 15:45	09:00 15:32
26	08:32 16:26	07:21 17:39	06:04 18:42	05:40 20:50	04:36 21:52	04:17 22:21	04:57 21:47	06:02 20:33	07:08 19:07	07:13 16:46	08:23 15:43	09:00 15:33
27	08:30 16:28	07:18 17:41	06:02 18:44	05:38 20:52	04:34 21:54	04:17 22:21	04:59 21:45	06:04 20:31	07:10 19:04	07:16 16:44	08:25 15:42	09:00 15:34
28	08:28 16:31	07:16 17:43	05:59 18:46	05:35 20:54	04:32 21:56	04:18 22:21	05:01 21:43	06:06 20:28	07:12 19:02	07:18 16:42	08:27 15:41	09:00 15:35
29	08:27 16:33		06:56 19:48	05:33 20:57	04:31 21:57	04:18 22:20	05:03 21:41	06:08 20:25	07:14 18:59	07:20 16:39	08:29 15:40	09:00 15:36
30	08:25 16:35		06:53 19:50	05:30 20:59	04:30 21:59	04:19 22:20	05:05 21:39	06:10 20:22	07:16 18:56	07:23 16:37	08:31 15:38	09:00 15:37
31	08:23 16:38		06:50 19:53		04:28 22:01		05:07 21:37	06:13 20:20		07:25 16:34		09:00 15:38
Potential sun hours	228	262	365	429	515	539	538	474	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Flickering_Valka_Siemens_Gamesa

SIA Estonian, Latvian & Lithuanian environment
Vilandes 3-6
LV-1010 Riga
0037167242411
Baiba / baiba.ozolina@environment.lv
Calculated:
15/01/2026 18:42/4.1.254

Calculation: Flickering_Valka_Siemens_Gameasa
Assumptions for shadow calculations

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

Table layout: For each day in each month the following matrix apply

windPRO 4.1.254 by EMD International A/S. Tel. +45 69 16 48 50. www.emd-international.com. support@emd.dk

Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Valdekas - Shadow Receptor: 1.0×1.0 Azimuth: 3.1° Slope: 90.0° (761)
 Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:28 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
2	09:00 15:41	08:19 16:42	07:11 17:48	06:45 19:57	05:25 21:04	04:25 22:04	04:21 22:20	05:11 21:33	06:17 20:15	07:21 18:51	07:30 16:30	08:35 15:36
3	09:00 15:42	08:17 16:45	07:08 17:50	06:42 19:59	05:23 21:06	04:24 22:06	04:22 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:37 15:35
4	08:59 15:43	08:15 16:47	07:05 17:53	06:39 20:02	05:20 21:08	04:23 22:07	04:23 22:18	05:15 21:29	06:21 20:09	07:25 18:45	07:35 16:25	08:38 15:34
5	08:59 15:45	08:13 16:49	07:03 17:55	06:37 20:04	05:18 21:10	04:22 22:09	04:24 22:18	05:17 21:26	06:23 20:06	07:27 18:42	07:37 16:23	08:40 15:33
6	08:58 15:46	08:10 16:52	07:00 17:57	06:34 20:06	05:16 21:12	04:21 22:10	04:25 22:17	05:19 21:24	06:25 20:04	07:29 18:39	07:39 16:20	08:42 15:33
7	08:58 15:48	08:08 16:54	06:57 18:00	06:31 20:08	05:13 21:15	04:20 22:11	04:26 22:16	05:21 21:22	06:28 20:01	07:31 18:37	07:41 16:18	08:43 15:32
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9	08:56 15:51	08:04 16:59	06:52 18:04	06:25 20:13	05:09 21:19	04:19 22:13	04:28 22:14	05:26 21:17	06:32 19:55	07:36 18:31	07:46 16:14	08:46 15:31
10	08:55 15:53	08:01 17:01	06:49 18:06	06:23 20:15	05:06 21:21	04:18 22:14	04:30 22:13	05:28 21:15	06:34 19:52	07:38 18:29	07:48 16:12	08:48 15:30
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12	08:53 15:57	07:57 17:06	06:44 18:11	06:17 20:19	05:02 21:25	04:17 22:16	04:33 22:10	05:32 21:10	06:38 19:47	07:42 18:23	07:53 16:08	08:50 15:29
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18	08:46 16:08	07:42 17:20	06:27 18:24	06:01 20:33	04:50 21:38	04:15 22:20	04:42 22:02	05:45 20:55	06:51 19:30	07:56 18:07	08:06 15:56	08:56 15:29
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31	08:23 16:37		05:50 19:53		04:28 22:01		05:07 21:38	06:13 20:20		07:25 16:34		09:01 15:38
Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Valdemara iela 11 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (732)
 Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:28 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
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Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Last time (hh:mm) with flicker	(WTG causing flicker last time)

Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Valdemara iela 13 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (706)
 Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:28 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
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15	08:50 16:02	07:49 17:13	06:35 18:17	06:09 20:26	04:56 21:32	04:15 22:19	04:37 22:06	05:38 21:02	06:44 19:38	07:49 18:15	08:00 16:02	08:54 15:29
16	08:48 16:04	07:47 17:15	06:32 18:20	06:06 20:28	04:54 21:34	04:15 22:19	04:39 22:05	05:41 21:00	06:46 19:36	07:51 18:12	08:02 16:00	08:55 15:29
17	08:47 16:06	07:45 17:18	06:30 18:22	06:04 20:30	04:52 21:36	04:15 22:20	04:40 22:03	05:43 20:57	06:49 19:33	07:53 18:10	08:04 15:58	08:56 15:29
18	08:46 16:08	07:42 17:20	06:27 18:24	06:01 20:33	04:50 21:38	04:15 22:20	04:42 22:02	05:45 20:55	06:51 19:30	07:56 18:07	08:06 15:56	08:56 15:29
19	08:44 16:10	07:39 17:22	06:24 18:26	05:58 20:35	04:48 21:40	04:15 22:21	04:44 22:00	05:47 20:52	06:53 19:27	07:58 18:04	08:09 15:54	08:57 15:29
20	08:43 16:13	07:37 17:25	06:21 18:29	05:56 20:37	04:46 21:42	04:15 22:21	04:46 21:59	05:49 20:50	06:55 19:24	08:00 18:02	08:11 15:53	08:58 15:29
21	08:41 16:15	07:34 17:27	06:18 18:31	05:53 20:39	04:44 21:44	04:15 22:22	04:47 21:57	05:51 20:47	06:57 19:21	08:02 17:59	08:13 15:51	08:59 15:30
22	08:40 16:17	07:32 17:30	06:16 18:33	05:50 20:41	04:42 21:45	04:15 22:22	04:49 21:55	05:53 20:44	06:59 19:19	08:05 17:57	08:15 15:49	08:59 15:30
23	08:38 16:19	07:29 17:32	06:13 18:35	05:48 20:44	04:40 21:47	04:15 22:22	04:51 21:53	05:56 20:42	07:01 19:16	08:07 17:54	08:17 15:48	09:00 15:31
24	08:36 16:21	07:27 17:34	06:10 18:37	05:45 20:46	04:39 21:49	04:15 22:22	04:53 21:52	05:58 20:39	07:03 19:13	08:09 17:51	08:19 15:46	09:00 15:31
25	08:34 16:24	07:24 17:37	06:07 18:40	05:43 20:48	04:37 21:51	04:16 22:22	04:55 21:50	06:00 20:36	07:06 19:10	07:11 16:49	08:21 15:45	09:00 15:32
26	08:33 16:26	07:21 17:39	06:04 18:42	05:40 20:50	04:35 21:53	04:16 22:22	04:57 21:48	06:02 20:34	07:08 19:07	07:14 16:46	08:23 15:43	09:01 15:33
27	08:31 16:28	07:19 17:41	06:02 18:44	05:38 20:53	04:34 21:55	04:17 22:22	04:59 21:46	06:04 20:31	07:10 19:05	07:16 16:44	08:25 15:42	09:01 15:34
28	08:29 16:30	07:16 17:43	05:59 18:46	05:35 20:55	04:32 21:56	04:17 22:21	05:01 21:44	06:06 20:28	07:12 19:02	07:18 16:42	08:27 15:41	09:01 15:35
29	08:27 16:33		06:56 19:48	05:33 20:57	04:31 21:58	04:18 22:21	05:03 21:42	06:08 20:26	07:14 18:59	07:21 16:39	08:29 15:39	09:01 15:35
30	08:25 16:35		06:53 19:51	05:30 20:59	04:29 22:00	04:19 22:21	05:05 21:40	06:10 20:23	07:16 18:56	07:23 16:37	08:31 15:38	09:01 15:37
31	08:23 16:37		06:50 19:53		04:28 22:01		05:07 21:38	06:13 20:20		07:25 16:34		09:01 15:38
Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Valdemara iela 13A - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (707)
 Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:28 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
2	09:00 15:41	08:19 16:42	07:11 17:48	06:45 19:57	05:25 21:04	04:25 22:04	04:21 22:20	05:11 21:33	06:17 20:15	07:21 18:51	07:30 16:29	08:35 15:36
3	09:00 15:42	08:17 16:45	07:08 17:50	06:42 19:59	05:23 21:06	04:24 22:06	04:21 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:37 15:35
4	08:59 15:43	08:15 16:47	07:05 17:53	06:39 20:02	05:20 21:08	04:23 22:07	04:22 22:18	05:15 21:29	06:21 20:09	07:25 18:45	07:35 16:25	08:38 15:34
5	08:59 15:45	08:13 16:49	07:03 17:55	06:37 20:04	05:18 21:10	04:22 22:09	04:24 22:18	05:17 21:26	06:23 20:06	07:27 18:42	07:37 16:23	08:40 15:33
6	08:58 15:46	08:10 16:52	07:00 17:57	06:34 20:06	05:16 21:12	04:21 22:10	04:25 22:17	05:19 21:24	06:25 20:04	07:29 18:39	07:39 16:20	08:42 15:32
7	08:58 15:48	08:08 16:54	06:57 17:59	06:31 20:08	05:13 21:15	04:20 22:11	04:26 22:16	05:21 21:22	06:27 20:01	07:31 18:37	07:41 16:18	08:43 15:32
8	08:57 15:49	08:06 16:56	06:55 18:02	06:28 20:10	05:11 21:17	04:19 22:12	04:27 22:15	05:24 21:20	06:30 19:58	07:34 18:34	07:44 16:16	08:45 15:31
9	08:56 15:51	08:04 16:59	06:52 18:04	06:25 20:13	05:09 21:19	04:18 22:13	04:28 22:14	05:26 21:17	06:32 19:55	07:36 18:31	07:46 16:14	08:46 15:31
10	08:55 15:53	08:01 17:01	06:49 18:06	06:23 20:15	05:06 21:21	04:18 22:14	04:30 22:13	05:28 21:15	06:34 19:52	07:38 18:28	07:48 16:12	08:48 15:30
11	08:54 15:55	07:59 17:04	06:46 18:09	06:20 20:17	05:04 21:23	04:17 22:15	04:31 22:12	05:30 21:12	06:36 19:50	07:40 18:26	07:51 16:10	08:49 15:30
12	08:53 15:57	07:57 17:06	06:44 18:11	06:17 20:19	05:02 21:25	04:17 22:16	04:33 22:10	05:32 21:10	06:38 19:47	07:42 18:23	07:53 16:08	08:50 15:29
13	08:52 15:58	07:54 17:08	06:41 18:13	06:15 20:22	05:00 21:27	04:16 22:17	04:34 22:09	05:34 21:07	06:40 19:44	07:45 18:20	07:55 16:06	08:51 15:29
14	08:51 16:00	07:52 17:11	06:38 18:15	06:12 20:24	04:58 21:29	04:16 22:18	04:36 22:08	05:36 21:05	06:42 19:41	07:47 18:18	07:57 16:04	08:53 15:29
15	08:50 16:02	07:49 17:13	06:35 18:17	06:09 20:26	04:56 21:32	04:15 22:19	04:37 22:06	05:38 21:02	06:44 19:38	07:49 18:15	08:00 16:02	08:54 15:29
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17	08:47 16:06	07:45 17:18	06:30 18:22	06:04 20:30	04:52 21:36	04:15 22:20	04:40 22:03	05:43 20:57	06:49 19:33	07:53 18:10	08:04 15:58	08:56 15:29
18	08:46 16:08	07:42 17:20	06:27 18:24	06:01 20:33	04:50 21:38	04:15 22:20	04:42 22:02	05:45 20:55	06:51 19:30	07:56 18:07	08:06 15:56	08:56 15:29
19	08:44 16:10	07:39 17:22	06:24 18:26	05:58 20:35	04:48 21:40	04:15 22:21	04:44 22:00	05:47 20:52	06:53 19:27	07:58 18:04	08:09 15:54	08:57 15:29
20	08:43 16:13	07:37 17:25	06:21 18:29	05:56 20:37	04:46 21:42	04:15 22:21	04:46 21:59	05:49 20:50	06:55 19:24	08:00 18:02	08:11 15:53	08:58 15:29
21	08:41 16:15	07:34 17:27	06:18 18:31	05:53 20:39	04:44 21:44	04:15 22:22	04:47 21:57	05:51 20:47	06:57 19:21	08:02 17:59	08:13 15:51	08:59 15:30
22	08:40 16:17	07:32 17:30	06:16 18:33	05:50 20:41	04:42 21:45	04:15 22:22	04:49 21:55	05:53 20:44	06:59 19:19	08:05 17:57	08:15 15:49	08:59 15:30
23	08:38 16:19	07:29 17:32	06:13 18:35	05:48 20:44	04:40 21:47	04:15 22:22	04:51 21:53	05:56 20:42	07:01 19:16	08:07 17:54	08:17 15:48	09:00 15:31
24	08:36 16:21	07:27 17:34	06:10 18:37	05:45 20:46	04:39 21:49	04:15 22:22	04:53 21:52	05:58 20:39	07:03 19:13	08:09 17:51	08:19 15:46	09:00 15:31
25	08:34 16:24	07:24 17:37	06:07 18:40	05:43 20:48	04:37 21:51	04:16 22:22	04:55 21:50	06:00 20:36	07:06 19:10	07:11 16:49	08:21 15:45	09:00 15:32
26	08:33 16:26	07:21 17:39	06:04 18:42	05:40 20:50	04:35 21:53	04:16 22:22	04:57 21:48	06:02 20:34	07:08 19:07	07:14 16:46	08:23 15:43	09:01 15:33
27	08:31 16:28	07:19 17:41	06:02 18:44	05:38 20:53	04:34 21:55	04:17 22:22	04:59 21:46	06:04 20:31	07:10 19:05	07:16 16:44	08:25 15:42	09:01 15:34
28	08:29 16:30	07:16 17:43	05:59 18:46	05:35 20:55	04:32 21:56	04:17 22:21	05:01 21:44	06:06 20:28	07:12 19:02	07:18 16:42	08:27 15:41	09:01 15:35
29	08:27 16:33		05:56 19:48	05:33 20:57	04:31 21:58	04:18 22:21	05:03 21:42	06:08 20:26	07:14 18:59	07:21 16:39	08:29 15:39	09:01 15:35
30	08:25 16:35		05:53 19:51	05:30 20:59	04:29 22:00	04:19 22:21	05:05 21:40	06:10 20:23	07:16 18:56	07:23 16:37	08:31 15:38	09:01 15:37
31	08:23 16:37		05:50 19:53		04:28 22:01		05:07 21:38	06:13 20:20		07:25 16:34		09:01 15:38
Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Valdemara iela 1A - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (754)
 Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:28 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
2	09:00 15:40	08:19 16:42	07:11 17:48	06:45 19:57	05:25 21:04	04:25 22:04	04:20 22:20	05:11 21:33	06:17 20:15	07:21 18:51	07:30 16:29	08:35 15:36
3	09:00 15:42	08:17 16:44	07:08 17:50	06:42 19:59	05:23 21:06	04:24 22:06	04:21 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:37 15:35
4	08:59 15:43	08:15 16:47	07:05 17:53	06:39 20:02	05:20 21:08	04:23 22:07	04:22 22:18	05:15 21:29	06:21 20:09	07:25 18:45	07:35 16:25	08:38 15:34
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7	08:58 15:48	08:08 16:54	06:57 17:59	06:31 20:08	05:13 21:15	04:20 22:11	04:26 22:16	05:21 21:22	06:27 20:01	07:31 18:37	07:41 16:18	08:43 15:32
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10	08:55 15:53	08:01 17:01	06:49 18:06	06:23 20:15	05:06 21:21	04:18 22:14	04:30 22:13	05:28 21:15	06:34 19:52	07:38 18:28	07:48 16:12	08:48 15:30
11	08:54 15:55	07:59 17:04	06:46 18:09	06:20 20:17	05:04 21:23	04:17 22:15	04:31 22:12	05:30 21:12	06:36 19:50	07:40 18:26	07:51 16:10	08:49 15:30
12	08:53 15:57	07:57 17:06	06:44 18:11	06:17 20:19	05:02 21:25	04:17 22:16	04:33 22:10	05:32 21:10	06:38 19:47	07:42 18:23	07:53 16:07	08:50 15:29
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19	08:44 16:10	07:39 17:22	06:24 18:26	05:58 20:35	04:48 21:40	04:15 22:21	04:44 22:00	05:47 20:52	06:53 19:27	07:58 18:04	08:09 15:54	08:57 15:29
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25	08:34 16:24	07:24 17:36	06:07 18:40	05:43 20:48	04:37 21:51	04:16 22:22	04:55 21:50	06:00 20:36	07:06 19:10	07:11 16:49	08:21 15:45	09:00 15:32
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Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Valdemara iela 3 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (742)
 Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:28 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
2	09:00 15:40	08:19 16:42	07:11 17:48	06:45 19:57	05:25 21:04	04:25 22:04	04:20 22:20	05:11 21:33	06:17 20:15	07:21 18:51	07:30 16:29	08:35 15:36
3	09:00 15:42	08:17 16:44	07:08 17:50	06:42 19:59	05:23 21:06	04:24 22:06	04:21 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:37 15:35
4	08:59 15:43	08:15 16:47	07:05 17:53	06:39 20:02	05:20 21:08	04:23 22:07	04:22 22:18	05:15 21:29	06:21 20:09	07:25 18:45	07:35 16:25	08:38 15:34
5	08:59 15:45	08:13 16:49	07:03 17:55	06:37 20:04	05:18 21:10	04:22 22:09	04:24 22:18	05:17 21:26	06:23 20:06	07:27 18:42	07:37 16:23	08:40 15:33
6	08:58 15:46	08:10 16:52	07:00 17:57	06:34 20:06	05:16 21:12	04:21 22:10	04:25 22:17	05:19 21:24	06:25 20:04	07:29 18:39	07:39 16:20	08:42 15:32
7	08:58 15:48	08:08 16:54	06:57 17:59	06:31 20:08	05:13 21:15	04:20 22:11	04:26 22:16	05:21 21:22	06:27 20:01	07:31 18:37	07:41 16:18	08:43 15:32
8	08:57 15:49	08:06 16:56	06:55 18:02	06:28 20:10	05:11 21:17	04:19 22:12	04:27 22:15	05:23 21:20	06:30 19:58	07:34 18:34	07:44 16:16	08:45 15:31
9	08:56 15:51	08:04 16:59	06:52 18:04	06:25 20:13	05:09 21:19	04:18 22:13	04:28 22:14	05:26 21:17	06:32 19:55	07:36 18:31	07:46 16:14	08:46 15:31
10	08:55 15:53	08:01 17:01	06:49 18:06	06:23 20:15	05:06 21:21	04:18 22:14	04:30 22:13	05:28 21:15	06:34 19:52	07:38 18:28	07:48 16:12	08:48 15:30
11	08:54 15:55	07:59 17:04	06:46 18:09	06:20 20:17	05:04 21:23	04:17 22:15	04:31 22:12	05:30 21:12	06:36 19:50	07:40 18:26	07:51 16:10	08:49 15:30
12	08:53 15:57	07:57 17:06	06:44 18:11	06:17 20:19	05:02 21:25	04:17 22:16	04:33 22:10	05:32 21:10	06:38 19:47	07:42 18:23	07:53 16:08	08:50 15:29
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14	08:51 16:00	07:52 17:11	06:38 18:15	06:12 20:24	04:58 21:29	04:16 22:18	04:36 22:08	05:36 21:05	06:42 19:41	07:47 18:18	07:57 16:04	08:53 15:29
15	08:50 16:02	07:49 17:13	06:35 18:17	06:09 20:26	04:56 21:32	04:15 22:19	04:37 22:06	05:38 21:02	06:44 19:38	07:49 18:15	08:00 16:02	08:54 15:29
16	08:48 16:04	07:47 17:15	06:32 18:20	06:06 20:28	04:54 21:34	04:15 22:19	04:39 22:05	05:41 21:00	06:46 19:35	07:51 18:12	08:02 16:00	08:55 15:29
17	08:47 16:06	07:45 17:18	06:30 18:22	06:04 20:30	04:51 21:36	04:15 22:20	04:40 22:03	05:43 20:57	06:49 19:33	07:53 18:10	08:04 15:58	08:56 15:29
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19	08:44 16:10	07:39 17:22	06:24 18:26	05:58 20:35	04:48 21:40	04:15 22:21	04:44 22:00	05:47 20:52	06:53 19:27	07:58 18:04	08:09 15:54	08:57 15:29
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28	08:29 16:30	07:16 17:43	05:59 18:46	05:35 20:55	04:32 21:56	04:17 22:21	05:01 21:44	06:06 20:28	07:12 19:02	07:18 16:41	08:27 15:41	09:01 15:34
29	08:27 16:33		05:56 19:48	05:32 20:57	04:31 21:58	04:18 22:21	05:03 21:42	06:08 20:26	07:14 18:59	07:21 16:39	08:29 15:39	09:01 15:35
30	08:25 16:35		05:53 19:51	05:30 20:59	04:29 22:00	04:19 22:21	05:05 21:40	06:10 20:23	07:16 18:56	07:23 16:37	08:31 15:38	09:01 15:37
31	08:23 16:37		05:50 19:53		04:28 22:01		05:07 21:38	06:13 20:20		07:25 16:34		09:01 15:38
Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Valdemara iela 5 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (746)
 Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:28 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
2	09:00 15:40	08:19 16:42	07:11 17:48	06:45 19:57	05:25 21:04	04:25 22:04	04:21 22:20	05:11 21:33	06:17 20:15	07:21 18:51	07:30 16:29	08:35 15:36
3	09:00 15:42	08:17 16:44	07:08 17:50	06:42 19:59	05:23 21:06	04:24 22:06	04:21 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:37 15:35
4	08:59 15:43	08:15 16:47	07:05 17:53	06:39 20:02	05:20 21:08	04:23 22:07	04:22 22:18	05:15 21:29	06:21 20:09	07:25 18:45	07:35 16:25	08:38 15:34
5	08:59 15:45	08:13 16:49	07:03 17:55	06:37 20:04	05:18 21:10	04:22 22:09	04:24 22:18	05:17 21:26	06:23 20:06	07:27 18:42	07:37 16:23	08:40 15:33
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11	08:54 15:55	07:59 17:04	06:46 18:09	06:20 20:17	05:04 21:23	04:17 22:15	04:31 22:12	05:30 21:12	06:36 19:50	07:40 18:26	07:51 16:10	08:49 15:30
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18	08:46 16:08	07:42 17:20	06:27 18:24	06:01 20:33	04:50 21:38	04:15 22:20	04:42 22:02	05:45 20:55	06:51 19:30	07:56 18:07	08:06 15:56	08:56 15:29
19	08:44 16:10	07:39 17:22	06:24 18:26	05:58 20:35	04:48 21:40	04:15 22:21	04:44 22:00	05:47 20:52	06:53 19:27	07:58 18:04	08:09 15:54	08:57 15:29
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23	08:38 16:19	07:29 17:32	06:13 18:35	05:48 20:44	04:40 21:47	04:15 22:22	04:51 21:53	05:56 20:42	07:01 19:16	08:07 17:54	08:17 15:48	09:00 15:31
24	08:36 16:21	07:27 17:34	06:10 18:37	05:45 20:46	04:39 21:49	04:15 22:22	04:53 21:52	05:58 20:39	07:03 19:13	08:09 17:51	08:19 15:46	09:00 15:31
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31	08:23 16:37		05:50 19:53		04:28 22:01		05:07 21:38	06:13 20:20		07:25 16:34		09:01 15:38
Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Valdemara iela 7 (94010040129001) - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (711)

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:28 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
2	09:00 15:40	08:19 16:42	07:11 17:48	06:45 19:57	05:25 21:04	04:25 22:04	04:21 22:20	05:11 21:33	06:17 20:15	07:21 18:51	07:30 16:29	08:35 15:36
3	09:00 15:42	08:17 16:44	07:08 17:50	06:42 19:59	05:23 21:06	04:24 22:06	04:21 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:37 15:35
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20	08:43 16:13	07:37 17:25	06:21 18:29	05:56 20:37	04:46 21:42	04:15 22:21	04:46 21:59	05:49 20:50	06:55 19:24	08:00 18:02	08:11 15:53	08:58 15:29
21	08:41 16:15	07:34 17:27	06:18 18:31	05:53 20:39	04:44 21:44	04:15 22:22	04:47 21:57	05:51 20:47	06:57 19:21	08:02 17:59	08:13 15:51	08:59 15:30
22	08:40 16:17	07:32 17:30	06:16 18:33	05:50 20:41	04:42 21:45	04:15 22:22	04:49 21:55	05:53 20:44	06:59 19:19	08:05 17:57	08:15 15:49	08:59 15:30
23	08:38 16:19	07:29 17:32	06:13 18:35	05:48 20:44	04:40 21:47	04:15 22:22	04:51 21:53	05:56 20:42	07:01 19:16	08:07 17:54	08:17 15:48	09:00 15:31
24	08:36 16:21	07:27 17:34	06:10 18:37	05:45 20:46	04:39 21:49	04:15 22:22	04:53 21:52	05:58 20:39	07:03 19:13	08:09 17:51	08:19 15:46	09:00 15:31
25	08:35 16:24	07:24 17:37	06:07 18:40	05:43 20:48	04:37 21:51	04:16 22:22	04:55 21:50	06:00 20:36	07:06 19:10	07:11 16:49	08:21 15:45	09:00 15:32
26	08:33 16:26	07:21 17:39	06:04 18:42	05:40 20:50	04:35 21:53	04:16 22:22	04:57 21:48	06:02 20:34	07:08 19:07	07:14 16:46	08:23 15:43	09:01 15:33
27	08:31 16:28	07:19 17:41	06:02 18:44	05:38 20:53	04:34 21:55	04:17 22:22	04:59 21:46	06:04 20:31	07:10 19:05	07:16 16:44	08:25 15:42	09:01 15:34
28	08:29 16:30	07:16 17:43	05:59 18:46	05:35 20:55	04:32 21:56	04:17 22:21	05:01 21:44	06:06 20:28	07:12 19:02	07:18 16:41	08:27 15:41	09:01 15:34
29	08:27 16:33		05:56 19:48	05:32 20:57	04:31 21:58	04:18 22:21	05:03 21:42	06:08 20:26	07:14 18:59	07:21 16:39	08:29 15:39	09:01 15:35
30	08:25 16:35		05:53 19:51	05:30 20:59	04:29 22:00	04:19 22:21	05:05 21:40	06:10 20:23	07:16 18:56	07:23 16:37	08:31 15:38	09:01 15:37
31	08:23 16:37		05:50 19:53		04:28 22:01		05:07 21:38	06:13 20:20		07:25 16:34		09:01 15:38
Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Valdemara iela 7 (94010040129004) - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (712)

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:28 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
2	09:00 15:40	08:19 16:42	07:11 17:48	06:45 19:57	05:25 21:04	04:25 22:04	04:21 22:20	05:11 21:33	06:17 20:15	07:21 18:51	07:30 16:29	08:35 15:36
3	09:00 15:42	08:17 16:44	07:08 17:50	06:42 19:59	05:23 21:06	04:24 22:06	04:21 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:37 15:35
4	08:59 15:43	08:15 16:47	07:05 17:53	06:39 20:02	05:20 21:08	04:23 22:07	04:22 22:18	05:15 21:29	06:21 20:09	07:25 18:45	07:35 16:25	08:38 15:34
5	08:59 15:45	08:13 16:49	07:03 17:55	06:37 20:04	05:18 21:10	04:22 22:09	04:24 22:18	05:17 21:26	06:23 20:06	07:27 18:42	07:37 16:23	08:40 15:33
6	08:58 15:46	08:10 16:52	07:00 17:57	06:34 20:06	05:16 21:12	04:21 22:10	04:25 22:17	05:19 21:24	06:25 20:04	07:29 18:39	07:39 16:20	08:42 15:32
7	08:58 15:48	08:08 16:54	06:57 17:59	06:31 20:08	05:13 21:15	04:20 22:11	04:26 22:16	05:21 21:22	06:27 20:01	07:31 18:37	07:41 16:18	08:43 15:32
8	08:57 15:49	08:06 16:56	06:55 18:02	06:28 20:10	05:11 21:17	04:19 22:12	04:27 22:15	05:23 21:20	06:30 19:58	07:34 18:34	07:44 16:16	08:45 15:31
9	08:56 15:51	08:04 16:59	06:52 18:04	06:25 20:13	05:09 21:19	04:18 22:13	04:28 22:14	05:26 21:17	06:32 19:55	07:36 18:31	07:46 16:14	08:46 15:31
10	08:55 15:53	08:01 17:01	06:49 18:06	06:23 20:15	05:06 21:21	04:18 22:14	04:30 22:13	05:28 21:15	06:34 19:52	07:38 18:28	07:48 16:12	08:48 15:30
11	08:54 15:55	07:59 17:04	06:46 18:09	06:20 20:17	05:04 21:23	04:17 22:15	04:31 22:12	05:30 21:12	06:36 19:50	07:40 18:26	07:51 16:10	08:49 15:30
12	08:53 15:57	07:57 17:06	06:44 18:11	06:17 20:19	05:02 21:25	04:17 22:16	04:33 22:10	05:32 21:10	06:38 19:47	07:42 18:23	07:53 16:08	08:50 15:29
13	08:52 15:58	07:54 17:08	06:41 18:13	06:15 20:22	05:00 21:27	04:16 22:17	04:34 22:09	05:34 21:07	06:40 19:44	07:45 18:20	07:55 16:05	08:51 15:29
14	08:51 16:00	07:52 17:11	06:38 18:15	06:12 20:24	04:58 21:29	04:16 22:18	04:36 22:08	05:36 21:05	06:42 19:41	07:47 18:18	07:57 16:04	08:53 15:29
15	08:50 16:02	07:49 17:13	06:35 18:17	06:09 20:26	04:56 21:32	04:15 22:19	04:37 22:06	05:38 21:02	06:44 19:38	07:49 18:15	08:00 16:02	08:54 15:29
16	08:48 16:04	07:47 17:15	06:32 18:20	06:06 20:28	04:54 21:34	04:15 22:19	04:39 22:05	05:41 21:00	06:46 19:36	07:51 18:12	08:02 16:00	08:55 15:29
17	08:47 16:06	07:45 17:18	06:30 18:22	06:04 20:30	04:52 21:36	04:15 22:20	04:40 22:03	05:43 20:57	06:49 19:33	07:53 18:10	08:04 15:58	08:56 15:29
18	08:46 16:08	07:42 17:20	06:27 18:24	06:01 20:33	04:50 21:38	04:15 22:20	04:42 22:02	05:45 20:55	06:51 19:30	07:56 18:07	08:06 15:56	08:56 15:29
19	08:44 16:10	07:39 17:22	06:24 18:26	05:58 20:35	04:48 21:40	04:15 22:21	04:44 22:00	05:47 20:52	06:53 19:27	07:58 18:04	08:09 15:54	08:57 15:29
20	08:43 16:13	07:37 17:25	06:21 18:29	05:56 20:37	04:46 21:42	04:15 22:21	04:46 21:59	05:49 20:50	06:55 19:24	08:00 18:02	08:11 15:53	08:58 15:29
21	08:41 16:15	07:34 17:27	06:18 18:31	05:53 20:39	04:44 21:44	04:15 22:22	04:47 21:57	05:51 20:47	06:57 19:21	08:02 17:59	08:13 15:51	08:59 15:30
22	08:40 16:17	07:32 17:30	06:16 18:33	05:50 20:41	04:42 21:45	04:15 22:22	04:49 21:55	05:53 20:44	06:59 19:19	08:05 17:57	08:15 15:49	08:59 15:30
23	08:38 16:19	07:29 17:32	06:13 18:35	05:48 20:44	04:40 21:47	04:15 22:22	04:51 21:53	05:56 20:42	07:01 19:16	08:07 17:54	08:17 15:48	09:00 15:31
24	08:36 16:21	07:27 17:34	06:10 18:37	05:45 20:46	04:39 21:49	04:15 22:22	04:53 21:52	05:58 20:39	07:03 19:13	08:09 17:51	08:19 15:46	09:00 15:31
25	08:34 16:24	07:24 17:37	06:07 18:40	05:43 20:48	04:37 21:51	04:16 22:22	04:55 21:50	06:00 20:36	07:06 19:10	07:11 16:49	08:21 15:45	09:00 15:32
26	08:33 16:26	07:21 17:39	06:04 18:42	05:40 20:50	04:35 21:53	04:16 22:22	04:57 21:48	06:02 20:34	07:08 19:07	07:14 16:46	08:23 15:43	09:01 15:33
27	08:31 16:28	07:19 17:41	06:02 18:44	05:38 20:53	04:34 21:55	04:17 22:22	04:59 21:46	06:04 20:31	07:10 19:05	07:16 16:44	08:25 15:42	09:01 15:34
28	08:29 16:30	07:16 17:43	05:59 18:46	05:35 20:55	04:32 21:56	04:17 22:21	05:01 21:44	06:06 20:28	07:12 19:02	07:18 16:41	08:27 15:41	09:01 15:34
29	08:27 16:33		05:56 19:48	05:32 20:57	04:31 21:58	04:18 22:21	05:03 21:42	06:08 20:26	07:14 18:59	07:21 16:39	08:29 15:39	09:01 15:35
30	08:25 16:35		05:53 19:51	05:30 20:59	04:29 22:00	04:19 22:21	05:05 21:40	06:10 20:23	07:16 18:56	07:23 16:37	08:31 15:38	09:01 15:37
31	08:23 16:37		05:50 19:53		04:28 22:01		05:07 21:38	06:13 20:20		07:25 16:34		09:01 15:38
Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Valdemara iela 9 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (750)
Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:28 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
2	09:00 15:40	08:19 16:42	07:11 17:48	06:45 19:57	05:25 21:04	04:25 22:04	04:21 22:20	05:11 21:33	06:17 20:15	07:21 18:51	07:30 16:29	08:35 15:36
3	09:00 15:42	08:17 16:44	07:08 17:50	06:42 19:59	05:23 21:06	04:24 22:06	04:21 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:37 15:35
4	08:59 15:43	08:15 16:47	07:05 17:53	06:39 20:02	05:20 21:08	04:23 22:07	04:22 22:18	05:15 21:29	06:21 20:09	07:25 18:45	07:35 16:25	08:38 15:34
5	08:59 15:45	08:13 16:49	07:03 17:55	06:37 20:04	05:18 21:10	04:22 22:09	04:24 22:18	05:17 21:26	06:23 20:06	07:27 18:42	07:37 16:23	08:40 15:33
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7	08:58 15:48	08:08 16:54	06:57 17:59	06:31 20:08	05:13 21:15	04:20 22:11	04:26 22:16	05:21 21:22	06:27 20:01	07:31 18:37	07:41 16:18	08:43 15:32
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10	08:55 15:53	08:01 17:01	06:49 18:06	06:23 20:15	05:06 21:21	04:18 22:14	04:30 22:13	05:28 21:15	06:34 19:52	07:38 18:28	07:48 16:12	08:48 15:30
11	08:54 15:55	07:59 17:04	06:46 18:09	06:20 20:17	05:04 21:23	04:17 22:15	04:31 22:12	05:30 21:12	06:36 19:50	07:40 18:26	07:51 16:10	08:49 15:30
12	08:53 15:57	07:57 17:06	06:44 18:11	06:17 20:19	05:02 21:25	04:17 22:16	04:33 22:10	05:32 21:10	06:38 19:47	07:42 18:23	07:53 16:08	08:50 15:29
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15	08:50 16:02	07:49 17:13	06:35 18:17	06:09 20:26	04:56 21:32	04:15 22:19	04:37 22:06	05:38 21:02	06:44 19:38	07:49 18:15	08:00 16:02	08:54 15:29
16	08:48 16:04	07:47 17:15	06:32 18:20	06:06 20:28	04:54 21:34	04:15 22:19	04:39 22:05	05:41 21:00	06:46 19:36	07:51 18:12	08:02 16:00	08:55 15:29
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19	08:44 16:10	07:39 17:22	06:24 18:26	05:58 20:35	04:48 21:40	04:15 22:21	04:44 22:00	05:47 20:52	06:53 19:27	07:58 18:04	08:09 15:54	08:57 15:29
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22	08:40 16:17	07:32 17:30	06:16 18:33	05:50 20:41	04:42 21:45	04:15 22:22	04:49 21:55	05:53 20:44	06:59 19:19	08:05 17:57	08:15 15:49	08:59 15:30
23	08:38 16:19	07:29 17:32	06:13 18:35	05:48 20:44	04:40 21:47	04:15 22:22	04:51 21:53	05:56 20:42	07:01 19:16	08:07 17:54	08:17 15:48	09:00 15:31
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29	08:27 16:33		05:56 19:48	05:32 20:57	04:31 21:58	04:18 22:21	05:03 21:42	06:08 20:26	07:14 18:59	07:21 16:39	08:29 15:39	09:01 15:35
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Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Valmieras iela 11 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (691)
 Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
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3	09:00 15:42	08:17 16:44	07:08 17:50	06:42 19:59	05:23 21:06	04:24 22:06	04:21 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:37 15:35
4	08:59 15:43	08:15 16:47	07:05 17:53	06:39 20:02	05:20 21:08	04:23 22:07	04:22 22:18	05:15 21:29	06:21 20:09	07:25 18:45	07:34 16:25	08:38 15:34
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31	08:23 16:37		05:50 19:53		04:28 22:01		05:07 21:38	06:13 20:20		07:25 16:34		09:01 15:38
Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Valmieras iela 3 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (763)
 Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:28 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
2	09:00 15:40	08:19 16:42	07:11 17:48	06:45 19:57	05:25 21:04	04:25 22:04	04:20 22:20	05:11 21:33	06:17 20:15	07:21 18:51	07:30 16:29	08:35 15:36
3	09:00 15:42	08:17 16:44	07:08 17:50	06:42 19:59	05:23 21:06	04:24 22:06	04:21 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:37 15:35
4	08:59 15:43	08:15 16:47	07:05 17:53	06:39 20:02	05:20 21:08	04:23 22:07	04:22 22:18	05:15 21:29	06:21 20:09	07:25 18:45	07:34 16:25	08:38 15:34
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31	08:23 16:37		06:50 19:53		04:28 22:01		05:07 21:38	06:13 20:20		07:25 16:34		09:01 15:38
Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Valmieras iela 5 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (764)
Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:28 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
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22	08:40 16:17	07:32 17:29	06:16 18:33	05:50 20:41	04:42 21:45	04:15 22:22	04:49 21:55	05:53 20:44	06:59 19:19	08:05 17:57	08:15 15:49	08:59 15:30
23	08:38 16:19	07:29 17:32	06:13 18:35	05:48 20:44	04:40 21:47	04:15 22:22	04:51 21:53	05:56 20:42	07:01 19:16	08:07 17:54	08:17 15:48	09:00 15:31
24	08:36 16:21	07:27 17:34	06:10 18:37	05:45 20:46	04:39 21:49	04:15 22:22	04:53 21:52	05:58 20:39	07:03 19:13	08:09 17:51	08:19 15:46	09:00 15:31
25	08:34 16:24	07:24 17:36	06:07 18:40	05:43 20:48	04:37 21:51	04:16 22:22	04:55 21:50	06:00 20:36	07:06 19:10	07:11 16:49	08:21 15:45	09:00 15:32
26	08:33 16:26	07:21 17:39	06:04 18:42	05:40 20:50	04:35 21:53	04:16 22:22	04:57 21:48	06:02 20:34	07:08 19:07	07:14 16:46	08:23 15:43	09:01 15:33
27	08:31 16:28	07:19 17:41	06:02 18:44	05:38 20:53	04:34 21:55	04:17 22:22	04:59 21:46	06:04 20:31	07:10 19:05	07:16 16:44	08:25 15:42	09:01 15:34
28	08:29 16:30	07:16 17:43	05:59 18:46	05:35 20:55	04:32 21:56	04:17 22:21	05:01 21:44	06:06 20:28	07:12 19:02	07:18 16:41	08:27 15:41	09:01 15:34
29	08:27 16:33		05:56 19:48	05:32 20:57	04:31 21:58	04:18 22:21	05:03 21:42	06:08 20:26	07:14 18:59	07:21 16:39	08:29 15:39	09:01 15:35
30	08:25 16:35		05:53 19:51	05:30 20:59	04:29 22:00	04:19 22:21	05:05 21:40	06:10 20:23	07:16 18:56	07:23 16:37	08:31 15:38	09:01 15:37
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Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
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Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Valmieras iela 7 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (753)
 Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:28 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
2	09:00 15:40	08:19 16:42	07:11 17:48	06:45 19:57	05:25 21:04	04:25 22:04	04:20 22:20	05:11 21:33	06:17 20:15	07:21 18:51	07:30 16:29	08:35 15:36
3	09:00 15:42	08:17 16:44	07:08 17:50	06:42 19:59	05:23 21:06	04:24 22:06	04:21 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:37 15:35
4	08:59 15:43	08:15 16:47	07:05 17:53	06:39 20:02	05:20 21:08	04:23 22:07	04:22 22:18	05:15 21:29	06:21 20:09	07:25 18:45	07:34 16:25	08:38 15:34
5	08:59 15:45	08:13 16:49	07:03 17:55	06:37 20:04	05:18 21:10	04:22 22:09	04:24 22:18	05:17 21:26	06:23 20:06	07:27 18:42	07:37 16:23	08:40 15:33
6	08:58 15:46	08:10 16:52	07:00 17:57	06:34 20:06	05:15 21:12	04:21 22:10	04:25 22:17	05:19 21:24	06:25 20:04	07:29 18:39	07:39 16:20	08:42 15:32
7	08:58 15:48	08:08 16:54	06:57 17:59	06:31 20:08	05:13 21:15	04:20 22:11	04:26 22:16	05:21 21:22	06:27 20:01	07:31 18:37	07:41 16:18	08:43 15:32
8	08:57 15:49	08:06 16:56	06:55 18:02	06:28 20:10	05:11 21:17	04:19 22:12	04:27 22:15	05:23 21:19	06:30 19:58	07:34 18:34	07:44 16:16	08:45 15:31
9	08:56 15:51	08:04 16:59	06:52 18:04	06:25 20:13	05:09 21:19	04:18 22:13	04:28 22:14	05:26 21:17	06:32 19:55	07:36 18:31	07:46 16:14	08:46 15:30
10	08:55 15:53	08:01 17:01	06:49 18:06	06:23 20:15	05:06 21:21	04:18 22:14	04:30 22:13	05:28 21:15	06:34 19:52	07:38 18:28	07:48 16:12	08:48 15:30
11	08:54 15:55	07:59 17:03	06:46 18:08	06:20 20:17	05:04 21:23	04:17 22:15	04:31 22:12	05:30 21:12	06:36 19:50	07:40 18:26	07:51 16:10	08:49 15:30
12	08:53 15:57	07:57 17:06	06:44 18:11	06:17 20:19	05:02 21:25	04:16 22:16	04:33 22:10	05:32 21:10	06:38 19:47	07:42 18:23	07:53 16:07	08:50 15:29
13	08:52 15:58	07:54 17:08	06:41 18:13	06:14 20:22	05:00 21:27	04:16 22:17	04:34 22:09	05:34 21:07	06:40 19:44	07:45 18:20	07:55 16:05	08:51 15:29
14	08:51 16:00	07:52 17:11	06:38 18:15	06:12 20:24	04:58 21:29	04:16 22:18	04:36 22:08	05:36 21:05	06:42 19:41	07:47 18:18	07:57 16:03	08:53 15:29
15	08:50 16:02	07:49 17:13	06:35 18:17	06:09 20:26	04:56 21:32	04:15 22:19	04:37 22:06	05:38 21:02	06:44 19:38	07:49 18:15	08:00 16:02	08:54 15:29
16	08:48 16:04	07:47 17:15	06:32 18:20	06:06 20:28	04:53 21:34	04:15 22:19	04:39 22:05	05:41 21:00	06:46 19:35	07:51 18:12	08:02 16:00	08:55 15:29
17	08:47 16:06	07:44 17:18	06:30 18:22	06:04 20:30	04:51 21:36	04:15 22:20	04:40 22:03	05:43 20:57	06:49 19:33	07:53 18:10	08:04 15:58	08:56 15:29
18	08:46 16:08	07:42 17:20	06:27 18:24	06:01 20:33	04:50 21:38	04:15 22:20	04:42 22:02	05:45 20:55	06:51 19:30	07:56 18:07	08:06 15:56	08:56 15:29
19	08:44 16:10	07:39 17:22	06:24 18:26	05:58 20:35	04:48 21:40	04:15 22:21	04:44 22:00	05:47 20:52	06:53 19:27	07:58 18:04	08:09 15:54	08:57 15:29
20	08:43 16:13	07:37 17:25	06:21 18:29	05:56 20:37	04:46 21:42	04:15 22:21	04:46 21:59	05:49 20:50	06:55 19:24	08:00 18:02	08:11 15:52	08:58 15:29
21	08:41 16:15	07:34 17:27	06:18 18:31	05:53 20:39	04:44 21:44	04:15 22:22	04:47 21:57	05:51 20:47	06:57 19:21	08:02 17:59	08:13 15:51	08:59 15:30
22	08:40 16:17	07:32 17:29	06:16 18:33	05:50 20:41	04:42 21:45	04:15 22:22	04:49 21:55	05:53 20:44	06:59 19:19	08:05 17:57	08:15 15:49	08:59 15:30
23	08:38 16:19	07:29 17:32	06:13 18:35	05:48 20:44	04:40 21:47	04:15 22:22	04:51 21:53	05:56 20:42	07:01 19:16	08:07 17:54	08:17 15:48	09:00 15:31
24	08:36 16:21	07:27 17:34	06:10 18:37	05:45 20:46	04:39 21:49	04:15 22:22	04:53 21:52	05:58 20:39	07:03 19:13	08:09 17:51	08:19 15:46	09:00 15:31
25	08:34 16:24	07:24 17:36	06:07 18:40	05:43 20:48	04:37 21:51	04:16 22:22	04:55 21:50	06:00 20:36	07:06 19:10	07:11 16:49	08:21 15:45	09:00 15:32
26	08:33 16:26	07:21 17:39	06:04 18:42	05:40 20:50	04:35 21:53	04:16 22:22	04:57 21:48	06:02 20:34	07:08 19:07	07:14 16:46	08:23 15:43	09:01 15:33
27	08:31 16:28	07:19 17:41	06:02 18:44	05:38 20:53	04:34 21:55	04:17 22:22	04:59 21:46	06:04 20:31	07:10 19:05	07:16 16:44	08:25 15:42	09:01 15:34
28	08:29 16:30	07:16 17:43	05:59 18:46	05:35 20:55	04:32 21:56	04:17 22:21	05:01 21:44	06:06 20:28	07:12 19:02	07:18 16:41	08:27 15:41	09:01 15:34
29	08:27 16:33		05:56 19:48	05:32 20:57	04:31 21:58	04:18 22:21	05:03 21:42	06:08 20:26	07:14 18:59	07:21 16:39	08:29 15:39	09:01 15:35
30	08:25 16:35		05:53 19:51	05:30 20:59	04:29 22:00	04:19 22:21	05:05 21:40	06:10 20:23	07:16 18:56	07:23 16:37	08:31 15:38	09:01 15:37
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Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Valmieras iela 7A - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (724)
 Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:28 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
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3	09:00 15:42	08:17 16:44	07:08 17:50	06:42 19:59	05:23 21:06	04:24 22:06	04:21 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:37 15:35
4	08:59 15:43	08:15 16:47	07:05 17:53	06:39 20:02	05:20 21:08	04:23 22:07	04:22 22:18	05:15 21:29	06:21 20:09	07:25 18:45	07:34 16:25	08:38 15:34
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7	08:58 15:48	08:08 16:54	06:57 17:59	06:31 20:08	05:13 21:15	04:20 22:11	04:26 22:16	05:21 21:22	06:27 20:01	07:31 18:37	07:41 16:18	08:43 15:32
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10	08:55 15:53	08:01 17:01	06:49 18:06	06:23 20:15	05:06 21:21	04:18 22:14	04:30 22:13	05:28 21:15	06:34 19:52	07:38 18:28	07:48 16:12	08:48 15:30
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Total, worst case												
Sun reduction												
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Wind dir. red.												
Total reduction												
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Table layout: For each day in each month the following matrix apply

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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Valmieras iela 9 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (743)
 Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
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5	08:59 15:45	08:13 16:49	07:03 17:55	06:37 20:04	05:18 21:10	04:22 22:09	04:24 22:18	05:17 21:26	06:23 20:06	07:27 18:42	07:37 16:23	08:40 15:33
6	08:58 15:46	08:10 16:52	07:00 17:57	06:34 20:06	05:15 21:12	04:21 22:10	04:25 22:17	05:19 21:24	06:25 20:04	07:29 18:39	07:39 16:20	08:42 15:32
7	08:58 15:48	08:08 16:54	06:57 17:59	06:31 20:08	05:13 21:15	04:20 22:11	04:26 22:16	05:21 21:22	06:27 20:01	07:31 18:37	07:41 16:18	08:43 15:32
8	08:57 15:49	08:06 16:56	06:55 18:02	06:28 20:10	05:11 21:17	04:19 22:12	04:27 22:15	05:23 21:19	06:30 19:58	07:34 18:34	07:44 16:16	08:45 15:31
9	08:56 15:51	08:04 16:59	06:52 18:04	06:25 20:13	05:09 21:19	04:18 22:13	04:28 22:14	05:26 21:17	06:32 19:55	07:36 18:31	07:46 16:14	08:46 15:30
10	08:55 15:53	08:01 17:01	06:49 18:06	06:23 20:15	05:06 21:21	04:18 22:14	04:30 22:13	05:28 21:15	06:34 19:52	07:38 18:28	07:48 16:12	08:48 15:30
11	08:54 15:55	07:59 17:03	06:46 18:08	06:20 20:17	05:04 21:23	04:17 22:15	04:31 22:12	05:30 21:12	06:36 19:50	07:40 18:26	07:51 16:10	08:49 15:30
12	08:53 15:57	07:57 17:06	06:44 18:11	06:17 20:19	05:02 21:25	04:16 22:16	04:33 22:10	05:32 21:19	06:38 19:47	07:42 18:23	07:53 16:07	08:50 15:29
13	08:52 15:58	07:54 17:08	06:41 18:13	06:14 20:22	05:00 21:27	04:16 22:17	04:34 22:09	05:34 21:07	06:40 19:44	07:45 18:20	07:55 16:05	08:51 15:29
14	08:51 16:00	07:52 17:11	06:38 18:15	06:12 20:24	04:58 21:29	04:16 22:18	04:36 22:08	05:36 21:05	06:42 19:41	07:47 18:18	07:57 16:03	08:53 15:29
15	08:50 16:02	07:49 17:13	06:35 18:17	06:09 20:26	04:56 21:32	04:15 22:19	04:37 22:06	05:38 21:02	06:44 19:38	07:49 18:15	08:00 16:02	08:54 15:29
16	08:48 16:04	07:47 17:15	06:32 18:20	06:06 20:28	04:53 21:34	04:15 22:19	04:39 22:05	05:41 21:00	06:46 19:35	07:51 18:12	08:02 16:00	08:55 15:29
17	08:47 16:06	07:44 17:18	06:30 18:22	06:04 20:30	04:51 21:36	04:15 22:20	04:40 22:03	05:43 20:57	06:49 19:33	07:53 18:10	08:04 15:58	08:56 15:29
18	08:46 16:08	07:42 17:20	06:27 18:24	06:01 20:33	04:50 21:38	04:15 22:20	04:42 22:02	05:45 20:55	06:51 19:30	07:56 18:07	08:06 15:56	08:56 15:29
19	08:44 16:10	07:39 17:22	06:24 18:26	05:58 20:35	04:48 21:40	04:15 22:21	04:44 22:00	05:47 20:52	06:53 19:27	07:58 18:04	08:09 15:54	08:57 15:29
20	08:43 16:13	07:37 17:25	06:21 18:29	05:56 20:37	04:46 21:42	04:15 22:21	04:46 21:59	05:49 20:50	06:55 19:24	08:00 18:02	08:11 15:52	08:58 15:29
21	08:41 16:15	07:34 17:27	06:18 18:31	05:53 20:39	04:44 21:44	04:15 22:22	04:47 21:57	05:51 20:47	06:57 19:21	08:02 17:59	08:13 15:51	08:59 15:30
22	08:40 16:17	07:32 17:29	06:16 18:33	05:50 20:41	04:42 21:45	04:15 22:22	04:49 21:55	05:53 20:44	06:59 19:19	08:05 17:57	08:15 15:49	08:59 15:30
23	08:38 16:19	07:29 17:32	06:13 18:35	05:48 20:44	04:40 21:47	04:15 22:22	04:51 21:53	05:56 20:42	07:01 19:16	08:07 17:54	08:17 15:48	09:00 15:31
24	08:36 16:21	07:27 17:34	06:10 18:37	05:45 20:46	04:39 21:49	04:15 22:22	04:53 21:52	05:58 20:39	07:03 19:13	08:09 17:51	08:19 15:46	09:00 15:31
25	08:34 16:24	07:24 17:36	06:07 18:40	05:43 20:48	04:37 21:51	04:16 22:22	04:55 21:50	06:00 20:36	07:06 19:10	07:11 16:49	08:21 15:45	09:00 15:32
26	08:33 16:26	07:21 17:39	06:04 18:42	05:40 20:50	04:35 21:53	04:16 22:22	04:57 21:48	06:02 20:34	07:08 19:07	07:14 16:46	08:23 15:43	09:01 15:33
27	08:31 16:28	07:19 17:41	06:02 18:44	05:38 20:53	04:34 21:55	04:17 22:22	04:59 21:46	06:04 20:31	07:10 19:05	07:16 16:44	08:25 15:42	09:01 15:34
28	08:29 16:30	07:16 17:43	05:59 18:46	05:35 20:55	04:32 21:56	04:17 22:21	05:01 21:44	06:06 20:28	07:12 19:02	07:18 16:41	08:27 15:41	09:01 15:34
29	08:27 16:33		05:56 19:48	05:32 20:57	04:31 21:58	04:18 22:21	05:03 21:42	06:08 20:26	07:14 18:59	07:21 16:39	08:29 15:39	09:01 15:35
30	08:25 16:35		05:53 19:51	05:30 20:59	04:29 22:00	04:19 22:21	05:05 21:40	06:10 20:23	07:16 18:56	07:23 16:37	08:31 15:38	09:01 15:37
31	08:23 16:37		05:50 19:53		04:28 22:01		05:07 21:38	06:13 20:20		07:25 16:34		09:01 15:38
Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Flickering_Valka_Siemens_Gamesa

SIA Estonian, Latvian & Lithuanian environment
Vilandes 3-6
LV-1010 Riga
0037167242411
Baiba / baiba.ozolina@environment.lv
Calculated:
15/01/2026 18:42/4.1.254

Calculation: Flickering_Valka_Siemens_Gamesa
Assumptions for shadow calculations

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

	January		February		March		April		May		June		July		August		September		October		November		December		
1	09:01		10:17 (8)	08:21		09:18 (5)	07:14	06:48		05:28	04:27	04:20		05:09	06:15	07:19		06:15	07:19		07:28		08:33		09:16 (9)
	15:39	18	10:53 (6)	16:40	22	09:40 (5)	17:46	19:55		21:01	22:03	22:20	21:35	20:17	18:53		16:32		15:37	1	09:17 (9)				
2	09:00		10:18 (8)	08:19		09:19 (5)	07:11	06:45		05:25	04:26	04:21	05:11	06:17	07:21		07:30		08:35						
	15:41	16	10:53 (6)	16:42	20	09:39 (5)	17:48	19:57		21:04	22:04	22:20	21:33	20:15	18:51		16:30		15:36						
3	09:00		10:19 (8)	08:17		09:20 (5)	07:08	06:42		05:23	04:24	04:22	05:13	06:19	07:23		07:32		08:37						
	15:42	11	10:52 (6)	16:45	19	09:39 (5)	17:50	20:00		21:06	22:06	22:19	21:31	20:12	18:48		16:27		15:35						
4	08:59		10:21 (8)	08:15		09:21 (5)	07:06	06:39		05:20	04:23	04:23	05:15	06:21	07:25		07:35		08:38						
	15:43	3	10:24 (8)	16:47	16	09:37 (5)	17:53	20:02		21:08	22:07	22:18	21:29	20:09	18:45		16:25		15:34						
5	08:59			08:13		09:23 (5)	07:03	06:37		05:18	04:22	04:24	05:17	06:23	07:27		07:37		08:40						
	15:45			16:49	13	09:36 (5)	17:55	20:04		21:10	22:09	22:18	21:27	20:06	18:42		16:23		15:33						
6	08:58			08:11		09:26 (5)	07:00	06:34		05:16	04:21	04:25	05:19	06:26	07:29		07:39		08:42						
	15:46			16:52	7	09:33 (5)	17:57	20:06		21:12	22:10	22:17	21:24	20:04	18:40		16:21		15:33						
7	08:58			08:08				06:57		06:31	05:13	04:20	04:26	05:22	06:28	07:31		07:41		08:43					
	15:48			16:54			18:00	20:08		21:15	22:11	22:16	21:22	20:01	18:37		16:18		15:32						
8	08:57			08:06			06:55	06:28		05:11	04:19	04:27	05:24	06:30	07:34		07:44		08:45						
	15:50			16:57			18:02	20:11		21:17	22:12	22:15	21:20	19:58	18:34		16:16		15:31	2	10:12 (8)				
9	08:56			08:04			06:52	06:26		05:09	04:19	04:29	05:26	06:32	07:36		07:46		08:46						
	15:51			16:59			18:04	20:13		21:19	22:13	22:14	21:17	19:55	18:31		16:14		15:31	9	10:40 (6)				
10	08:55			08:01			06:49	06:23		05:07	04:18	04:30	05:28	06:34	07:38		07:48		08:48						
	15:53			17:01			18:06	20:15		21:21	22:14	22:13	21:15	19:52	18:29		16:12		15:30	15	10:42 (6)				
11	08:54		09:34 (9)	07:59			06:46	06:20		05:04	04:17	04:31													

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Last time (hh:mm) with flicker	(WTG causing flicker last time)
	Minutes with flicker		

Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Vecrubeni - Shadow Receptor: 1.0×1.0 Azimuth: 3.1° Slope: 90.0° (507)
 Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June
1	09:00 15:39	08:21 16:40	07:13 17:46	16:58 (12) 17:16 (12)	06:48 19:55	18:36 (4) 21:01
2	09:00 15:41	08:19 16:42	07:11 17:48	16:57 (12) 17:18 (13)	19:55 19:57	21:01 21:03
3	08:59 15:42	08:17 16:44	07:08 17:50	16:57 (12) 17:20 (13)	06:42 19:59	18:39 (4) 21:05
4	08:59 15:43	08:14 16:47	07:05 17:53	16:57 (12) 17:23 (13)	06:39 20:01	18:41 (4) 21:08
5	08:58 15:45	08:12 16:49	07:02 17:55	16:57 (12) 17:25 (13)	06:36 20:04	18:44 (4) 19:33 (3)
6	08:58 15:46	08:10 16:52	07:00 17:57	16:58 (12) 17:28 (13)	06:34 20:06	19:30 (3) 19:36 (3)
7	08:57 15:48	08:08 16:54	06:57 17:59	16:58 (12) 17:30 (13)	06:31 20:08	19:29 (3) 19:38 (3)
8	08:56 15:50	08:06 16:56	06:54 18:02	16:59 (12) 17:30 (13)	06:28 20:10	19:28 (3) 19:40 (3)
9	08:56 15:51	08:03 16:59	06:52 18:04	17:01 (12) 17:29 (13)	06:25 20:12	19:29 (3) 19:43 (3)
10	08:55 15:53	08:01 17:01	06:49 18:06	17:04 (12) 17:27 (13)	06:23 20:15	19:29 (3) 19:44 (3)
11	08:54 15:55	07:59 17:03	06:46 18:08	17:19 (13) 17:24 (13)	06:20 20:17	19:29 (3) 19:42 (3)
12	08:53 15:57	07:56 17:06	06:43 18:11	06:17 20:19	05:02 21:25	19:31 (3) 19:41 (3)
13	08:52 15:58	07:54 17:08	06:41 18:13	06:14 20:21	05:00 21:27	19:34 (3) 19:37 (3)
14	08:51 16:00	07:52 17:11	06:38 18:15	06:12 20:23	04:58 21:29	19:37 (3) 21:31
15	08:49 16:02	07:49 17:13	06:35 18:17	06:09 20:26	04:56 21:31	19:37 (3) 21:31
16	08:48 16:04	07:47 17:15	06:32 18:20	06:06 20:28	04:54 21:33	19:37 (3) 21:33
17	08:47 16:06	07:44 17:18	06:29 18:22	06:04 20:30	04:52 21:35	19:37 (3) 21:35
18	08:45 16:08	07:42 17:20	06:27 18:24	17:50 (4) 17:55 (4)	06:01 20:32	19:37 (3) 21:37
19	08:44 16:11	07:39 17:22	06:24 18:26	17:45 (4) 17:57 (4)	05:58 20:35	19:37 (3) 21:39
20	08:42 16:13	07:37 17:25	06:21 18:28	17:43 (4) 17:59 (4)	05:56 20:37	19:37 (3) 21:41
21	08:41 16:15	07:34 17:27	06:18 18:31	17:41 (4) 18:01 (4)	05:53 20:39	20:05 (2) 20:07 (2)
22	08:39 16:17	07:32 17:29	06:15 18:33	17:39 (4) 18:03 (4)	05:50 20:41	20:03 (2) 20:09 (2)
23	08:38 16:19	07:29 17:32	06:13 18:35	17:39 (4) 18:06 (14)	05:48 20:43	20:01 (2) 20:11 (2)
24	08:36 16:21	07:26 17:34	06:10 18:37	17:38 (4) 18:06 (14)	05:45 20:46	20:00 (2) 20:13 (2)
25	08:34 16:24	07:24 17:36	06:07 18:39	17:37 (4) 18:05 (4)	05:43 20:48	20:00 (2) 20:16 (2)
26	08:32 16:26	07:21 17:39	06:04 18:42	17:36 (4) 18:05 (4)	05:40 20:50	19:58 (2) 20:17 (2)
27	08:31 16:28	07:19 17:41	06:01 18:44	17:35 (4) 18:04 (4)	05:37 20:52	19:58 (2) 20:20 (2)
28	08:29 16:30	07:16 17:43	05:59 18:46	17:36 (4) 18:05 (4)	05:35 20:54	19:57 (2) 20:21 (2)
29	08:27 16:33	07:14 17:43	05:56 18:48	18:36 (4) 19:04 (4)	05:32 20:57	19:57 (2) 20:21 (2)
30	08:25 16:35	07:12 17:41	05:53 18:50	18:36 (4) 19:03 (4)	05:30 20:59	19:57 (2) 20:21 (2)
31	08:23 16:37	07:10 17:39	05:50 18:53	18:36 (4) 19:02 (4)	05:28 21:01	19:57 (2) 20:21 (2)
Potential sun hours	227	262	365	429	515	539
Total, worst case		418	583	330	153	
Sun reduction		0.19	0.40	0.43	0.58	
Oper. time red.		1.00	1.00	1.00	1.00	
Wind dir. red.		1.00	1.00	1.00	1.00	
Total reduction		0.19	0.40	0.43	0.58	
Total, real		81	235	140	89	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Vecrubeni - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (507)
 Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) []

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
 0.80 1.82 4.75 6.09 9.67 10.05 8.16 7.72 5.94 2.93 0.63 0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	July	August	September	October	November	December
1	04:20 22:20	05:09 21:35	06:15 20:17	19:28 (3) 18:53	07:27 16:32	15:25 (11) 15:37
2	04:21 22:19	05:11 21:33	06:17 20:14	19:27 (3) 18:50	07:20 16:29	15:26 (11) 15:36
3	04:22 22:19	05:13 21:31	06:19 20:12	19:26 (3) 18:48	07:22 18:04 (13)	15:25 (11) 15:35
4	04:23 22:18	05:15 21:28	20:15 (2) 20:09	06:21 19:37 (3)	07:25 18:05 (13)	15:26 (11) 15:34
5	04:24 22:17	05:17 21:26	20:12 (2) 20:06	06:23 19:35 (3)	07:27 18:07 (13)	15:27 (11) 15:33
6	04:25 22:16	05:19 21:24	20:11 (2) 20:03	06:25 19:32 (3)	07:29 18:07 (13)	15:28 (11) 15:33
7	04:26 22:15	05:21 21:22	20:09 (2) 20:01	06:27 19:30 (3)	07:31 18:04 (13)	15:30 (11) 15:32
8	04:27 22:14	05:23 21:19	20:08 (2) 20:00	06:29 18:50 (4)	07:33 18:01 (13)	15:30 (11) 15:31
9	04:28 22:13	05:26 21:17	20:08 (2) 20:00	06:32 18:52 (4)	07:36 18:31 (4)	15:33 (11) 15:31
10	04:30 22:12	05:28 21:14	20:07 (2) 20:00	06:34 18:53 (4)	07:38 18:28	08:47 15:30
11	04:31 22:11	05:30 21:12	20:06 (2) 20:00	06:36 18:53 (4)	07:40 18:26	08:49 15:30
12	04:33 22:10	05:32 21:10	20:05 (2) 20:00	06:38 18:54 (4)	07:42 18:23	08:50 15:29
13	04:34 22:09	05:34 21:07	20:05 (2) 20:00	06:40 18:54 (4)	07:44 18:20	08:51 15:29
14	04:36 22:07	05:36 21:05	20:05 (2) 20:00	06:42 18:54 (4)	07:46 18:18	08:52 15:29
15	04:37 22:06	05:38 21:02	20:05 (2) 20:00	06:44 18:54 (4)	07:49 18:15	08:53 15:29
16	04:39 22:05	05:40 21:00	20:05 (2) 20:00	06:46 18:54 (4)	07:51 18:12	08:54 15:29
17	04:41 22:03	05:43 20:57	20:05 (2) 20:00	06:48 18:53 (4)	07:53 18:10	08:55 15:29
18	04:42 22:02	05:45 20:54	20:05 (2) 20:00	06:51 18:53 (4)	07:55 18:07	08:56 15:29
19	04:44 22:00	05:47 20:52	20:06 (2) 20:00	06:53 18:52 (4)	07:58 18:04	08:57 15:29
20	04:46 21:58	05:49 20:49	20:07 (2) 20:00	06:55 18:52 (14)	08:00 18:02	08:58 15:29
21	04:48 21:57	05:51 20:47	20:08 (2) 20:00	06:57 18:50 (14)	08:02 17:59	08:58 15:30
22	04:49 21:55	05:53 20:44	20:14 (2) 19:21	06:59 18:25 (4)	08:04 16:33 (11)	08:59 15:30
23	04:51 21:53	05:55 20:41	19:18 18:27 (4)	07:01 18:45 (4)	12 16:45 (11) 16:31 (11)	15:49 15:31
24	04:53 21:51	05:58 20:39	19:16 19:13	18:45 (4) 18:42 (4)	17 16:48 (11) 16:49 (11)	15:48 15:46
25	04:55 21:49	06:00 20:36	07:03 19:10	08:09 18:39 (4)	17 16:29 (11) 15:50 (11)	08:19 15:45
26	04:57 21:47	06:02 20:33	07:08 19:07	07:13 18:35 (14)	20 15:27 (11) 15:50 (11)	08:23 15:43
27	04:59 21:45	06:04 20:31	07:10 19:04	16:46 16:44	23 15:27 (11) 15:52 (11)	08:25 15:42
28	05:01 21:43	06:06 20:28	07:12 19:02	07:18 16:41	25 15:25 (11) 15:51 (11)	08:27 15:41
29	05:03 21:41	06:08 20:25	07:14 18:59	07:20 16:39	26 15:26 (11) 15:52 (11)	08:29 15:39
30	05:05 21:39	06:10 20:23	19:34 (3) 19:37 (3)	07:23 16:37	27 15:25 (11) 15:52 (11)	08:31 15:38
31	05:07 21:37	06:13 20:20	19:30 (3) 19:40 (3)	07:25 16:34	27 15:25 (11) 15:52 (11)	09:00 15:38
Potential sun hours	538	474	386	321	241	207
Total, worst case		328	496	521	161	
Sun reduction		0.50	0.46	0.28	0.08	
Oper. time red.		1.00	1.00	1.00	1.00	
Wind dir. red.		1.00	1.00	1.00	1.00	
Total reduction		0.50	0.46	0.28	0.08	
Total, real		165	229	147	13	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)		Last time (hh:mm) with flicker	(WTG causing flicker last time)

Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Veikals Seli - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (460)
Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June
1	09:00 15:39	08:21 16:40	07:13 17:46	06:47 19:55	05:27 21:01	04:27 22:02
2	09:00 15:40	08:19 16:42	07:11 17:48	06:45 19:57	05:25 21:03	04:25 22:04
3	08:59 15:42	08:17 16:44	07:08 17:50	06:42 19:59	05:23 21:05	04:24 22:05
4	08:59 15:43	08:14 16:47	07:05 17:52	06:39 20:01	05:20 21:08	04:23 22:07
5	08:58 15:45	08:12 16:49	07:02 17:55	06:36 20:04	05:18 21:10	04:22 22:08
6	08:58 15:46	08:10 16:52	07:00 17:57	06:34 20:06	05:15 21:12	04:21 22:09
7	08:57 15:48	08:08 16:54	06:57 17:59	06:31 20:08	05:13 21:14	04:20 22:11
8	08:56 15:49	08:06 16:56	06:54 18:02	06:28 20:10	05:11 21:16	04:19 22:12
9	08:56 15:51	08:03 16:59	06:52 18:04	06:25 20:12	05:09 21:19	04:18 22:13
10	08:55 15:53	08:01 17:01	06:49 18:06	17:33 (2) 17:36 (2)	06:23 20:15	05:06 21:21
11	08:54 15:55	07:59 17:03	16:26 (4) 16:30 (4)	17:32 (2) 17:39 (2)	06:20 20:17	05:04 21:23
12	08:53 15:56	07:56 17:06	16:24 (4) 16:32 (4)	17:31 (2) 17:42 (2)	06:17 20:19	05:02 21:25
13	08:52 15:58	15:14 (11) 15:15 (11)	07:54 17:08	16:24 (4) 16:35 (4)	18:11 18:13	17:30 (2) 17:44 (2)
14	08:51 16:00	15:15 (11) 15:18 (11)	07:52 17:11	16:24 (4) 16:38 (4)	06:38 18:15	17:30 (2) 20:23
15	08:49 16:02	15:14 (11) 15:20 (11)	07:49 17:13	16:23 (4) 16:40 (4)	06:35 18:17	17:29 (2) 20:26
16	08:48 16:04	15:15 (11) 15:23 (11)	07:47 17:15	16:23 (4) 16:43 (4)	06:32 18:20	17:29 (2) 20:28
17	08:47 16:06	15:15 (11) 15:25 (11)	07:44 17:18	16:23 (4) 16:42 (4)	06:29 18:22	17:30 (2) 20:30
18	08:45 16:08	15:15 (11) 15:27 (11)	07:42 17:20	16:23 (4) 16:41 (4)	06:27 18:24	17:31 (2) 20:32
19	08:44 16:10	15:15 (11) 15:29 (11)	07:39 17:22	16:25 (4) 16:41 (4)	06:24 18:26	17:32 (2) 20:35
20	08:42 16:13	15:17 (11) 15:33 (11)	07:37 17:25	16:25 (4) 16:40 (4)	06:21 18:28	17:35 (2) 20:37
21	08:41 16:15	15:17 (11) 15:33 (11)	07:34 17:27	16:27 (4) 16:38 (4)	06:18 18:31	17:40 (2) 20:39
22	08:39 16:17	15:18 (11) 15:33 (11)	07:32 17:29	16:31 (4) 16:35 (4)	06:15 18:33	20:37 20:41
23	08:38 16:19	15:19 (11) 15:32 (11)	07:29 17:32	06:13 18:35	20:41 20:43	20:39 20:43
24	08:36 16:21	15:20 (11) 15:32 (11)	07:26 17:34	06:10 18:37	20:43 20:46	20:41 20:45
25	08:34 16:24	15:22 (11) 15:31 (11)	07:24 17:36	06:07 18:39	20:43 20:48	20:43 20:48
26	08:32 16:26	15:24 (11) 15:29 (11)	07:21 17:39	06:04 18:42	20:40 20:50	20:45 20:53
27	08:31 16:28	15:29 (11) 17:19	07:19 17:41	06:01 18:44	20:37 20:52	20:44 20:54
28	08:29 16:30	17:16 17:43	07:16 18:46	05:59 18:46	20:50 20:54	20:51 20:55
29	08:27 16:33		06:56 19:48	05:52 20:57	20:52 21:58	20:53 22:21
30	08:25 16:35		06:53 19:50	05:50 20:59	21:58 21:59	22:19 22:20
31	08:23 16:37		06:50 19:53		21:59 22:01	
Potential sun hours	227	262	365	429	515	539
Total, worst case	140	157	137			
Sun reduction	0.11	0.19	0.40			
Oper. time red.	1.00	1.00	1.00			
Wind dir. red.	1.00	1.00	1.00			
Total reduction	0.11	0.19	0.40			
Total, real	15	31	55			

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Veikals Seli - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (460)
Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	July	August	September	October	November	December
1	04:20	05:09	06:15	07:18	18:10 (2)	07:27
	22:20	21:35	20:17	18:53	12 18:22 (2)	16:32
2	04:21	05:11	06:17	07:20	18:10 (2)	07:30
	22:19	21:33	20:14	18:50	9 18:19 (2)	16:29
3	04:21	05:13	06:19	07:22	18:11 (2)	07:32
	22:19	21:31	20:12	18:48	5 18:16 (2)	16:27
4	04:22	05:15	06:21	07:25	18:12 (2)	07:34
	22:18	21:28	20:09	18:45	1 18:13 (2)	16:25
5	04:24	05:17	06:23	07:27		07:37
	22:17	21:26	20:06	18:42		16:22
6	04:25	05:19	06:25	07:29		07:39
	22:16	21:24	20:03	18:39		16:20
7	04:26	05:21	06:27	07:31		07:41
	22:15	21:22	20:01	18:37		16:18
8	04:27	05:23	06:29	07:33		07:43
	22:15	21:19	19:58	18:34		16:16
9	04:28	05:26	06:32	07:35		07:46
	22:13	21:17	19:55	18:31		16:14
10	04:30	05:28	06:34	07:38		07:48
	22:12	21:14	19:52	18:28		16:12
11	04:31	05:30	06:36	07:40		07:50
	22:11	21:12	19:49	18:26		16:09
12	04:33	05:32	06:38	07:42		07:53
	22:10	21:10	19:47	18:23		16:07
13	04:34	05:34	06:40	07:44		07:55
	22:09	21:07	19:44	18:20		16:05
14	04:36	05:36	06:42	07:46		07:57
	22:07	21:05	19:41	18:17		16:03
15	04:37	05:38	06:44	07:49		07:59
	22:06	21:02	19:38	18:15		16:02
16	04:39	05:40	06:46	07:51		08:02
	22:05	21:00	19:35	18:12	5	15:02 (11)
17	04:40	05:43	06:48	07:53		08:04
	22:03	20:57	19:32	18:09		15:58
18	04:42	05:45	06:51	07:55		08:06
	22:02	20:54	19:30	18:07	12	15:06 (11)
19	04:44	05:47	06:53	07:58		08:08
	22:00	20:52	19:27	18:04	13	15:06 (11)
20	04:46	05:49	06:55	08:00		08:10
	21:58	20:49	19:24	18:02	8	17:07 (4)
21	04:47	05:51	06:57	08:02		08:13
	21:57	20:47	19:21	17:59	12	17:09 (4)
22	04:49	05:53	06:59	08:04		08:15
	21:55	20:44	19:18	17:56	15	17:10 (4)
23	04:51	05:55	07:01	08:07		08:17
	21:53	20:41	19:16	17:54	17	17:12 (4)
24	04:53	05:58	07:03	18:17 (2)	08:09	16:53 (4)
	21:51	20:39	19:13	18:27 (2)	17:51	17:12 (4)
25	04:55	06:00	07:05	18:14 (2)	07:11	15:54 (4)
	21:49	20:36	19:10	18:28 (2)	16:49	16:12 (4)
26	04:57	06:02	07:07	18:13 (2)	07:13	15:53 (4)
	21:47	20:33	19:07	18:29 (2)	16:46	16:12 (4)
27	04:59	06:04	07:10	18:11 (2)	07:16	15:53 (4)
	21:45	20:31	19:04	18:29 (2)	16:44	16:10 (4)
28	05:01	06:06	07:12	18:10 (2)	07:18	15:53 (4)
	21:43	20:28	19:02	18:29 (2)	16:41	16:06 (4)
29	05:03	06:08	07:14	18:10 (2)	07:20	15:54 (4)
	21:41	20:25	18:59	18:27 (2)	16:39	16:04 (4)
30	05:05	06:10	07:16	18:10 (2)	07:23	15:54 (4)
	21:39	20:23	18:56	18:25 (2)	16:37	16:01 (4)
31	05:07	06:12			07:25	15:56 (4)
	21:37	20:20			3 15:59 (4)	
Potential sun hours	538	474	386	321		241
Total, worst case			109	185		141
Sun reduction			0.46	0.28		0.08
Oper. time red.			1.00	1.00		1.00
Wind dir. red.			1.00	1.00		1.00
Total reduction			0.46	0.28		0.08
Total, real			50	52		11

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Vetaptieka - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (505)
Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:00 15:39	08:21 16:40	07:13 17:46	06:47 19:55	05:27 21:01	04:27 22:02	04:20 21:35	05:09 21:35	06:15 20:17	07:18 18:53	07:27 16:32	08:33 15:37
2	09:00 15:40	08:19 16:42	07:11 17:48	06:45 19:57	05:25 21:03	04:25 22:04	04:21 21:33	05:11 20:14	06:17 18:50	07:20 16:29	07:30 16:29	08:34 15:36
3	08:59 15:42	08:17 16:44	07:08 17:50	06:42 19:59	05:23 21:05	04:24 22:05	04:21 21:31	05:13 20:12	06:19 18:48	07:22 16:27	07:32 16:27	08:36 15:35
4	08:59 15:43	08:14 16:47	07:05 17:52	06:39 20:01	05:20 21:08	04:23 22:07	04:22 21:28	05:15 20:09	06:21 18:45	07:25 16:25	07:34 16:25	08:38 15:34
5	08:58 15:45	08:12 16:49	07:02 17:55	06:36 20:04	05:18 21:10	04:22 22:08	04:24 21:26	05:17 20:06	06:23 18:42	07:27 16:22	07:36 16:22	08:40 15:33
6	08:58 15:46	08:10 16:52	07:00 17:57	06:34 20:06	05:15 21:12	04:21 22:09	04:25 21:24	05:19 20:03	06:25 18:39	07:29 16:20	07:39 16:20	08:41 15:32
7	08:57 15:48	08:08 16:54	06:57 17:59	06:31 20:08	05:13 21:14	04:20 22:11	04:26 21:22	05:21 20:00	06:27 18:37	07:31 16:18	07:41 16:18	08:43 15:32
8	08:56 15:49	08:06 16:56	06:54 18:02	06:28 20:10	05:11 21:16	04:19 22:12	04:27 21:19	05:23 19:58	06:29 18:34	07:33 16:16	07:43 16:16	08:44 15:31
9	08:56 15:51	08:03 16:59	06:52 18:04	06:25 20:12	05:09 21:19	04:18 22:13	04:28 21:17	05:26 19:55	06:32 18:31	07:35 16:14	07:46 16:14	08:46 15:30
10	08:55 15:53	08:01 17:01	06:49 18:06	06:23 20:15	05:06 21:21	04:18 22:14	04:30 21:14	05:28 19:52	06:34 18:28	07:38 16:12	07:48 16:12	08:47 15:30
11	08:54 15:55	07:59 17:03	06:46 18:08	06:20 20:17	05:04 21:23	04:17 22:15	04:31 21:12	05:30 19:49	06:36 18:26	07:40 16:09	07:50 16:09	08:49 15:30
12	08:53 15:56	07:56 17:06	06:43 18:11	06:17 20:19	05:02 21:25	04:17 22:16	04:33 21:10	05:32 19:47	06:38 18:23	07:42 16:07	07:53 16:07	08:50 15:29
13	08:52 15:58	07:54 17:08	06:41 18:13	06:14 20:21	05:00 21:27	04:16 22:17	04:34 21:07	05:34 19:44	06:40 18:20	07:44 16:05	07:55 16:05	08:51 15:29
14	08:51 16:00	07:52 17:11	06:38 18:15	06:12 20:23	04:58 21:29	04:16 22:18	04:36 21:05	05:36 19:41	06:42 18:17	07:46 16:03	07:57 16:03	08:52 15:29
15	08:49 16:02	07:49 17:13	06:35 18:17	3 17:45 (2) 17:48 (2)	06:09 20:26	04:56 21:31	04:15 22:18	05:37 19:38	06:44 18:15	9 17:16 (4) 17:25 (4)	07:59 16:01	08:53 15:29
16	08:48 16:04	07:47 17:15	06:32 18:20	7 17:43 (2) 17:50 (2)	06:06 20:28	04:53 21:33	04:15 22:19	05:40 19:35	06:46 18:12	14 17:14 (4) 17:28 (4)	08:02 16:00	08:54 15:29
17	08:47 16:06	07:44 17:18	2 16:43 (4) 16:45 (4)	4 17:43 (2) 17:53 (2)	06:04 20:30	04:51 21:35	04:15 22:19	05:43 19:32	06:48 18:09	16 17:12 (4) 17:28 (4)	08:04 15:58	08:55 15:29
18	08:45 16:08	07:42 17:20	7 16:41 (4) 16:48 (4)	10 17:42 (2) 17:55 (2)	06:01 20:32	04:49 21:37	04:15 22:20	05:45 19:30	06:51 18:07	17 17:12 (4) 17:29 (4)	08:06 15:56	08:56 15:29
19	08:44 16:10	07:39 17:22	10 16:41 (4) 16:51 (4)	13 17:42 (2) 17:52 (2)	06:04 20:35	04:48 21:39	04:15 22:20	05:47 19:27	06:53 18:04	18 17:11 (4) 17:29 (4)	08:08 15:54	08:57 15:29
20	08:42 16:13	07:37 17:25	13 16:40 (4) 16:53 (4)	17 17:42 (2) 17:55 (2)	06:06 20:37	04:46 21:37	04:15 22:21	05:49 19:24	06:55 18:02	10 18:20 (2) 18:40 (2)	08:00 15:52	08:58 15:29
21	08:41 16:15	07:34 17:27	16 16:40 (4) 16:55 (4)	19 17:42 (2) 17:58 (2)	06:03 20:39	04:44 21:43	04:15 22:21	05:47 19:21	06:57 18:04	14 18:28 (2) 18:42 (2)	08:02 15:51	08:58 15:30
22	08:39 16:17	07:32 17:29	15 16:40 (4) 16:58 (4)	16 17:42 (2) 17:56 (2)	06:03 20:41	04:42 21:45	04:15 22:21	05:49 19:18	06:59 18:04	15 18:27 (2) 18:42 (2)	08:04 15:48	08:59 15:30
23	08:38 16:19	07:29 17:32	18 16:40 (4) 16:58 (4)	14 17:44 (2) 17:55 (2)	06:04 20:43	04:40 21:47	04:15 22:21	05:55 19:16	06:59 18:04	17 18:26 (2) 18:43 (2)	08:07 15:48	08:59 15:31
24	08:36 16:21	07:26 17:34	18 16:40 (4) 16:57 (4)	11 17:47 (2) 17:52 (2)	06:10 20:46	04:38 21:49	04:15 22:21	05:58 19:13	07:03 18:04	9 17:20 (4) 17:29 (4)	08:19 15:46	09:00 15:31
25	08:34 16:24	07:24 17:36	17 16:42 (4) 16:57 (4)	5 17:52 (2) 20:46	06:07 20:48	04:37 21:51	04:16 22:21	06:00 19:10	07:05 18:04	16 18:42 (2) 18:39 (2)	07:11 15:45	09:00 15:32
26	08:32 16:26	07:21 17:39	15 16:43 (4) 16:55 (4)	06:04 20:50	05:40 21:52	04:35 22:21	04:16 22:21	06:02 19:07	07:07 18:04	14 18:25 (2) 18:36 (2)	07:13 15:43	09:00 15:33
27	08:31 16:28	07:19 17:41	12 16:45 (4) 16:52 (4)	06:01 20:52	05:37 21:54	04:34 22:21	04:17 22:21	06:04 19:04	07:10 18:04	11 18:25 (2) 18:33 (2)	07:16 15:42	09:00 15:34
28	08:29 16:30	07:16 17:43	7 18:46 18:46	05:59 20:54	05:35 21:56	04:32 22:21	04:17 22:21	06:06 19:02	07:12 18:02	8 18:25 (2) 18:30 (2)	07:18 15:41	09:01 15:34
29	08:27 16:33	07:13 17:48	06:56 19:48	05:52 20:57	05:32 21:58	04:31 22:21	04:18 22:21	06:08 19:04	07:14 18:04	5 18:26 (2) 18:27 (2)	07:20 15:39	09:01 15:35
30	08:25 16:35	07:10 17:50	06:53 19:50	05:50 20:59	04:29 21:59	04:19 22:20	05:05 21:39	06:10 20:23	07:16 18:56	1 18:27 (2) 18:32 (2)	07:23 15:38	09:01 15:37
31	08:23 16:37	07:07 17:53	06:50 19:53	05:48 22:01	04:28 22:01	04:18 22:21	05:07 21:37	06:12 20:20	07:25 16:34	06:36 16:34	07:25 15:38	09:00 15:38
Potential sun hours	227	262	365	429	515	539	538	474	386	321	241	207
Total, worst case												
Sun reduction		134	111						111	135		
Oper. time red.		0.19	0.40						0.46	0.28		
Wind dir. red.		1.00	1.00						1.00	1.00		
Total reduction		0.19	0.40						0.46	0.28		
Total, real		26	45						51	38		

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Last time (hh:mm) with flicker	(WTG causing flicker last time)

Project:

Flickering_Valka_Siemens_Gamesa

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SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa
Assumptions for shadow calculations

Shadow receptor: Vidini - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (503)
Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January		February		March		April		May	June
1	09:00	14:48 (12)	08:21	15:52 (14)	07:13	16:32 (2)	06:48	05:27	04:27	
	15:39	5	14:53 (12)	16:40	11	16:03 (14)	17:46	30	17:05 (3)	19:55
2	09:00	14:47 (12)	08:19	15:52 (14)	07:11	16:33 (2)	06:45	05:25	04:25	
	15:41	7	14:54 (12)	16:42	14	16:06 (14)	17:48	19	16:52 (2)	19:57
3	09:00	14:48 (12)	08:17	15:53 (14)	07:08	16:34 (2)	06:42	05:23	04:24	
	15:42	8	14:56 (12)	16:44	16	16:09 (14)	17:50	15	16:49 (2)	19:59
4	08:59	14:49 (12)	08:15	15:52 (14)	07:05	16:37 (2)	06:39	05:20	04:23	
	15:43	9	14:58 (4)	16:47	18	16:10 (14)	17:53	9	16:46 (2)	20:01
5	08:59	14:49 (12)	08:12	15:53 (14)	07:03		06:36	05:18	04:22	
	15:45	10	14:59 (4)	16:49	17	16:10 (14)	17:55	20:04	21:10	22:08
6	08:58	14:49 (12)	08:10	15:54 (14)	07:00		06:34	05:15	04:21	
	15:46	12	15:01 (4)	16:52	15	16:09 (14)	17:57	20:06	21:12	22:09
7	08:57	14:50 (12)	08:08	15:55 (14)	06:57		06:31	05:13	04:20	
	15:48	13	15:03 (4)	16:54	13	16:08 (14)	17:59	20:08	21:14	22:11
8	08:57	14:50 (12)	08:06	15:57 (14)	06:54		06:28	05:11	04:19	
	15:49	15	15:05 (4)	16:56	9	16:06 (14)	18:02	20:10	21:16	22:12
9	08:56	14:51 (12)	08:03	16:01 (14)	06:52		06:25	05:09	04:18	
	15:51	16	15:07 (4)	16:59	2	16:03 (14)	18:04	20:12	21:19	22:13
10	08:55	14:51 (12)	08:01		06:49		06:23	05:06	04:18	
	15:53	18	15:09 (4)	17:01			18:06	20:15	21:21	22:14
11	08:54	14:51 (12)	07:59		06:46		06:20	05:04	04:17	
	15:55	20	15:11 (4)	17:03			18:08	20:17	21:23	22:15
12	08:53	14:52 (12)	07:56		06:43		06:17	05:02	04:17	
	15:57	21	15:13 (4)	17:06			18:11	20:19	21:25	22:16
13	08:52	14:52 (12)	07:54		06:41		06:14	05:00	04:16	
	15:58	23	15:15 (4)	17:08			18:13	20:21	21:27	22:17
14	08:51	14:54 (12)	07:52		06:38		06:12	04:58	04:16	
	16:00	24	15:18 (4)	17:11			18:15	20:24	21:29	22:18
15	08:49	14:54 (12)	07:49		06:35		06:09	04:56	04:15	
	16:02	24	15:18 (4)	17:13			18:17	20:26	21:31	22:18
16	08:48	14:55 (4)	07:47	16:37 (2)	06:32		06:06	04:53	04:15	
	16:04	24	15:19 (4)	17:15	6	16:43 (2)	18:20	20:28	21:33	22:19
17	08:47	14:55 (4)	07:44	16:34 (2)	06:29		06:04	04:51	04:15	
	16:06	24	15:19 (4)	17:18	11	16:45 (2)	18:22	20:30	21:35	22:20
18	08:45	14:55 (4)	07:42	16:34 (2)	06:27		06:01	04:50	04:15	
	16:08	24	15:19 (4)	17:20	14	16:48 (2)	18:24	20:32	21:37	22:20
19	08:44	14:55 (4)	07:39	16:32 (2)	06:24		05:58	04:48	04:15	
	16:10	24	15:19 (4)	17:22	19	16:51 (2)	18:26	20:35	21:39	22:21
20	08:42	14:57 (4)	07:37	16:31 (2)	06:21		17:57 (1)	05:56	04:46	04:15
	16:13	24	15:21 (4)	17:25	22	16:53 (2)	18:28	2	17:59 (1)	20:37
21	08:41	14:57 (4)	07:34	16:30 (2)	06:18		17:56 (1)	05:53	04:44	04:15
	16:15	24	15:21 (4)	17:27	25	16:55 (3)	18:31	5	18:01 (1)	20:39
22	08:39	14:58 (4)	07:32	16:30 (2)	06:16		17:55 (1)	05:50	04:42	04:15
	16:17	23	15:21 (4)	17:29	28	16:58 (3)	18:33	8	18:03 (1)	20:41
23	08:38	14:58 (4)	07:29	16:30 (2)	06:13		17:55 (1)	05:48	04:40	04:15
	16:19	23	15:21 (4)	17:32	31	17:01 (3)	18:35	11	18:06 (1)	20:43
24	08:36	14:59 (4)	07:26	16:29 (2)	06:10		17:55 (1)	05:45	04:39	04:15
	16:21	21	15:20 (4)	17:34	34	17:03 (3)	18:37	13	18:08 (1)	20:46
25	08:34	15:00 (4)	07:24	16:30 (2)	06:07		17:56 (1)	05:43	04:37	04:16
	16:24	20	15:20 (4)	17:36	36	17:06 (3)	18:39	13	18:09 (1)	20:48
26	08:32	15:01 (4)	07:21	16:30 (2)	06:04		17:56 (1)	05:40	04:35	04:16
	16:26	19	15:20 (4)	17:39	38	17:08 (3)	18:42	12	18:08 (1)	20:50
27	08:31	15:01 (4)	07:19	16:30 (2)	06:02		17:58 (1)	05:37	04:34	04:17
	16:28	17	15:18 (4)	17:41	37	17:07 (3)	18:44	7	18:05 (1)	20:52
28	08:29	15:03 (4)	07:16	16:30 (2)	05:59			05:35	04:32	04:17
	16:30	14	15:17 (4)	17:43	36	17:06 (3)	18:46	20:55	21:56	22:21
29	08:27	15:05 (4)			06:56			05:32	04:31	04:18
	16:33	14	15:55 (14)		19:48			20:57	21:58	22:21
30	08:25	15:10 (4)			06:53			05:30	04:29	04:19
	16:35	8	15:58 (14)		19:50			20:59	21:59	22:20
31	08:23	15:52 (14)			06:50				04:28	
	16:37	9	16:01 (14)		19:53				22:01	
Potential sun hours	227		262		365		429	515	539	
Total, worst case	537		452		144					
Sun reduction	0.11		0.19		0.40					
Oper. time red.	1.00		1.00		1.00					
Wind dir. red.	1.00		1.00		1.00					
Total reduction	0.11		0.19		0.40					
Total, real	59		88		58					

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

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Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Vidini - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (503)
Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	July	August	September	October	November	December
1	04:20	05:09	06:15	07:18	07:27	08:33
	22:20	21:35	20:17	18:53	16:32	14:33 (12)
2	04:21	05:11	06:17	07:20	07:30	20 14:53 (4)
	22:19	21:33	20:14	18:50	16:29	14:34 (12)
3	04:21	05:13	06:19	07:23	07:32	15:29 (14) 14:52 (4)
	22:19	21:31	20:12	18:48	16:27	15:36 (14) 14:34 (12)
4	04:22	05:15	06:21	07:25	07:34	15:35 (14) 14:50 (4)
	22:18	21:28	20:09	18:45	16:25	15:25 (14) 14:34 (12)
5	04:24	05:17	06:23	07:27	07:37	15:38 (14) 14:49 (4)
	22:17	21:26	20:06	18:42	16:23	15:23 (14) 14:35 (12)
6	04:25	05:19	06:25	07:29	07:39	15:39 (14) 14:48 (4)
	22:16	21:24	20:03	18:39	16:20	15:23 (14) 14:35 (12)
7	04:26	05:21	06:27	07:31	07:41	15:40 (14) 14:47 (4)
	22:16	21:22	20:01	18:37	16:18	15:39 (14) 14:37 (12)
8	04:27	05:23	06:29	07:33	07:43	15:41 (14) 14:47 (4)
	22:15	21:19	19:58	18:34	16:16	15:22 (14) 14:37 (12)
9	04:28	05:26	06:32	07:36	07:46	15:39 (14) 14:46 (4)
	22:14	21:17	19:55	18:31	16:14	15:23 (14) 14:37 (12)
10	04:30	05:28	06:34	07:38	07:48	15:37 (14) 14:44 (12)
	22:12	21:14	19:52	18:28	16:12	15:22 (14) 14:38 (12)
11	04:31	05:30	06:36	07:40	07:50	15:34 (14) 14:44 (12)
	22:11	21:12	19:49	18:26	16:10	15:23 (14) 14:38 (12)
12	04:33	05:32	06:38	07:42	07:53	15:32 (14) 14:43 (12)
	22:10	21:10	19:47	18:23	16:07	15:30 (14) 14:39 (12)
13	04:34	05:34	06:40	07:44	07:55	15:29 (14) 14:42 (12)
	22:09	21:07	19:44	18:20	16:05	15:27 (14) 14:39 (12)
14	04:36	05:36	06:42	07:47	07:57	15:26 (14) 14:42 (12)
	22:07	21:05	19:41	18:18	16:03	15:25 (14) 14:41 (12)
15	04:37	05:38	06:44	07:49	07:59	15:24 (14) 14:40 (12)
	22:06	21:02	19:38	18:15	16:02	15:23 (14) 14:41 (12)
16	04:39	05:40	06:46	18:48 (1) 07:51	08:02	15:22 (14) 14:40 (12)
	22:05	21:00	19:35	18:12	16:00	15:21 (14) 14:41 (12)
17	04:40	05:43	06:48	18:45 (1) 07:53	08:04	15:20 (14) 14:41 (12)
	22:03	20:57	19:33	18:10	15:58	15:19 (14) 14:42 (12)
18	04:42	05:45	06:51	18:43 (1) 07:55	08:06	15:18 (14) 14:43 (12)
	22:02	20:54	19:30	18:07	15:56	15:17 (14) 14:44 (12)
19	04:44	05:47	06:53	18:42 (1) 07:58	08:08	15:16 (14) 14:45 (12)
	22:00	20:52	19:27	18:04	15:54	15:15 (14) 14:46 (12)
20	04:46	05:49	06:55	18:41 (1) 08:00	08:10	15:14 (14) 14:47 (12)
	21:58	20:49	19:24	18:02	15:52	15:13 (14) 14:48 (12)
21	04:47	05:51	06:57	18:41 (1) 08:02	08:13	15:12 (14) 14:49 (12)
	21:57	20:47	19:21	17:59	15:51	15:11 (14) 14:50 (12)
22	04:49	05:53	06:59	18:41 (1) 08:04	08:15	15:10 (14) 14:51 (12)
	21:55	20:44	19:18	17:56	15:49	15:09 (14) 14:52 (12)
23	04:51	05:55	07:01	18:41 (1) 08:07	08:17	15:08 (14) 14:53 (12)
	21:53	20:41	19:16	17:54	15:48	15:07 (14) 14:54 (12)
24	04:53	05:58	07:03	08:09	08:19	15:06 (14) 14:55 (12)
	21:51	20:39	19:13	17:51	15:46	15:05 (14) 14:56 (12)
25	04:55	06:00	07:05	07:11	08:21	15:04 (14) 14:57 (12)
	21:49	20:36	19:10	16:49	15:45	15:03 (14) 14:58 (12)
26	04:57	06:02	07:08	07:14	08:23	15:02 (14) 14:59 (12)
	21:47	20:33	19:07	16:46	15:43	15:01 (14) 15:00 (12)
27	04:59	06:04	07:10	07:16	08:25	15:00 (14) 15:01 (12)
	21:45	20:31	19:04	16:44	15:42	15:00 (14) 15:02 (12)
28	05:01	06:06	07:12	07:18	08:27	15:00 (14) 15:03 (12)
	21:43	20:28	19:02	16:41	15:41	15:00 (14) 15:04 (12)
29	05:03	06:08	07:14	07:20	08:29	15:00 (14) 15:05 (12)
	21:41	20:25	18:59	16:39	15:39	15:00 (14) 15:06 (12)
30	05:05	06:10	07:16	07:23	08:31	15:00 (14) 15:07 (12)
	21:39	20:23	18:56	16:37	15:38	15:00 (14) 15:08 (12)
31	05:07	06:13		07:25		15:00 (14) 15:09 (12)
	21:37	20:20		16:34		15:00 (14) 15:10 (12)
Potential sun hours	538	474	386	321	241	207
Total, worst case			77	420	528	155
Sun reduction			0.46	0.28	0.08	0.06
Oper. time red.			1.00	1.00	1.00	1.00
Wind dir. red.			1.00	1.00	1.00	1.00
Total reduction			0.46	0.28	0.08	0.06
Total, real			36	119	41	10

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

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SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Vienibas gatve 6 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (574)

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:28 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
2	09:00 15:40	08:19 16:42	07:11 17:48	06:45 19:57	05:25 21:04	04:25 22:04	04:20 22:20	05:11 21:33	06:17 20:15	07:21 18:51	07:30 16:29	08:35 15:36
3	09:00 15:42	08:17 16:44	07:08 17:50	06:42 19:59	05:23 21:06	04:24 22:06	04:21 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:37 15:35
4	08:59 15:43	08:15 16:47	07:05 17:53	06:39 20:02	05:20 21:08	04:23 22:07	04:22 22:18	05:15 21:29	06:21 20:09	07:25 18:45	07:34 16:25	08:38 15:34
5	08:59 15:45	08:13 16:49	07:03 17:55	06:36 20:04	05:18 21:10	04:22 22:08	04:24 22:18	05:17 21:26	06:23 20:06	07:27 18:42	07:37 16:23	08:40 15:33
6	08:58 15:46	08:10 16:52	07:00 17:57	06:34 20:06	05:15 21:12	04:21 22:10	04:25 22:17	05:19 21:24	06:25 20:03	07:29 18:39	07:39 16:20	08:42 15:32
7	08:58 15:48	08:08 16:54	06:57 17:59	06:31 20:08	05:13 21:15	04:20 22:11	04:26 22:16	05:21 21:22	06:27 20:01	07:31 18:37	07:41 16:18	08:43 15:32
8	08:57 15:49	08:06 16:56	06:55 18:02	06:28 20:10	05:11 21:17	04:19 22:12	04:27 22:15	05:23 21:19	06:30 19:58	07:34 18:34	07:44 16:16	08:45 15:31
9	08:56 15:51	08:04 16:59	06:52 18:04	06:25 20:13	05:09 21:19	04:18 22:13	04:28 22:14	05:26 21:17	06:32 19:55	07:36 18:31	07:46 16:14	08:46 15:30
10	08:55 15:53	08:01 17:01	06:49 18:06	06:23 20:15	05:06 21:21	04:18 22:14	04:30 22:13	05:28 21:15	06:34 19:52	07:38 18:28	07:48 16:12	08:48 15:30
11	08:54 15:55	07:59 17:03	06:46 18:08	06:20 20:17	05:04 21:23	04:17 22:15	04:31 22:12	05:30 21:12	06:36 19:50	07:40 18:26	07:51 16:10	08:49 15:30
12	08:53 15:56	07:57 17:06	06:43 18:11	06:17 20:19	05:02 21:25	04:17 22:16	04:33 22:10	05:32 21:10	06:38 19:47	07:42 18:23	07:53 16:07	08:50 15:29
13	08:52 15:58	07:54 17:08	06:41 18:13	06:14 20:21	05:00 21:27	04:16 22:17	04:34 22:09	05:34 21:07	06:40 19:44	07:44 18:20	07:55 16:05	08:51 15:29
14	08:51 16:00	07:52 17:11	06:38 18:15	06:12 20:24	04:58 21:29	04:16 22:18	04:36 22:08	05:36 21:05	06:42 19:41	07:47 18:18	07:57 16:03	08:53 15:29
15	08:50 16:02	07:49 17:13	06:35 18:17	06:09 20:26	04:56 21:32	04:15 22:19	04:37 22:06	05:38 21:02	06:44 19:38	07:49 18:15	08:00 16:02	08:54 15:29
16	08:48 16:04	07:47 17:15	06:32 18:20	06:06 20:28	04:53 21:34	04:15 22:19	04:39 22:05	05:41 21:00	06:46 19:35	07:51 18:12	08:02 16:00	08:55 15:29
17	08:47 16:06	07:44 17:18	06:30 18:22	06:04 20:30	04:51 21:36	04:15 22:20	04:40 22:03	05:43 20:57	06:49 19:33	07:53 18:10	08:04 15:58	08:56 15:29
18	08:46 16:08	07:42 17:20	06:27 18:24	06:01 20:33	04:49 21:38	04:15 22:20	04:42 22:02	05:45 20:55	06:51 19:30	07:56 18:07	08:06 15:56	08:56 15:29
19	08:44 16:10	07:39 17:22	06:24 18:26	05:58 20:35	04:48 21:40	04:15 22:21	04:44 22:00	05:47 20:52	06:53 19:27	07:58 18:04	08:09 15:54	08:57 15:29
20	08:43 16:13	07:37 17:25	06:21 18:29	05:56 20:37	04:46 21:42	04:15 22:21	04:46 21:59	05:49 20:50	06:55 19:24	08:00 18:02	08:11 15:52	08:58 15:29
21	08:41 16:15	07:34 17:27	06:18 18:31	05:53 20:39	04:44 21:44	04:15 22:21	04:47 21:57	05:51 20:47	06:57 19:21	08:02 17:59	08:13 15:51	08:59 15:30
22	08:40 16:17	07:32 17:29	06:16 18:33	05:50 20:41	04:42 21:45	04:15 22:22	04:49 21:55	05:53 20:44	06:59 19:19	08:05 17:57	08:15 15:49	08:59 15:30
23	08:38 16:19	07:29 17:32	06:13 18:35	05:48 20:44	04:40 21:47	04:15 22:22	04:51 21:53	05:55 20:42	07:01 19:16	08:07 17:54	08:17 15:48	09:00 15:31
24	08:36 16:21	07:27 17:34	06:10 18:37	05:45 20:46	04:39 21:49	04:15 22:22	04:53 21:52	05:58 20:39	07:03 19:13	08:09 17:51	08:19 15:46	09:00 15:31
25	08:34 16:24	07:24 17:36	06:07 18:40	05:43 20:48	04:37 21:51	04:16 22:22	04:55 21:50	06:00 20:36	07:06 19:10	07:11 16:49	08:21 15:45	09:00 15:32
26	08:33 16:26	07:21 17:39	06:04 18:42	05:40 20:50	04:35 21:53	04:16 22:22	04:57 21:48	06:02 20:34	07:08 19:07	07:14 16:46	08:23 15:43	09:01 15:33
27	08:31 16:28	07:19 17:41	06:02 18:44	05:38 20:53	04:34 21:55	04:17 22:22	04:59 21:46	06:04 20:31	07:10 19:04	07:16 16:44	08:25 15:42	09:01 15:34
28	08:29 16:30	07:16 17:43	05:59 18:46	05:35 20:55	04:32 21:56	04:17 22:21	05:01 21:44	06:06 20:28	07:12 19:02	07:18 16:41	08:27 15:41	09:01 15:34
29	08:27 16:33		05:56 19:48	05:32 20:57	04:31 21:58	04:18 22:21	05:03 21:42	06:08 20:26	07:14 18:59	07:21 16:39	08:29 15:39	09:01 15:35
30	08:25 16:35		05:53 19:51	05:30 20:59	04:29 22:00	04:19 22:21	05:05 21:40	06:10 20:23	07:16 18:56	07:23 16:37	08:31 15:38	09:01 15:37
31	08:23 16:37		05:50 19:53		04:28 22:01		05:07 21:37	06:13 20:20		07:25 16:34		09:01 15:38
Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Last time (hh:mm) with flicker	(WTG causing flicker last time)

Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Vienibas gatve 7 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (576)
Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:27 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
2	09:00 15:40	08:19 16:42	07:11 17:48	06:45 19:57	05:25 21:04	04:25 22:04	04:20 22:20	05:11 21:33	06:17 20:15	07:20 18:50	07:30 16:29	08:35 15:36
3	09:00 15:42	08:17 16:44	07:08 17:50	06:42 19:59	05:23 21:06	04:24 22:06	04:21 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:37 15:35
4	08:59 15:43	08:15 16:47	07:05 17:53	06:39 20:02	05:20 21:08	04:23 22:07	04:22 22:18	05:15 21:29	06:21 20:09	07:25 18:45	07:34 16:25	08:38 15:34
5	08:59 15:45	08:13 16:49	07:03 17:55	06:36 20:04	05:18 21:10	04:22 22:08	04:23 22:18	05:17 21:26	06:23 20:06	07:27 18:42	07:37 16:23	08:40 15:33
6	08:58 15:46	08:10 16:52	07:00 17:57	06:34 20:06	05:15 21:12	04:21 22:10	04:25 22:17	05:19 21:24	06:25 20:03	07:29 18:39	07:39 16:20	08:42 15:32
7	08:58 15:48	08:08 16:54	06:57 17:59	06:31 20:08	05:13 21:15	04:20 22:11	04:26 22:16	05:21 21:22	06:27 20:01	07:31 18:37	07:41 16:18	08:43 15:32
8	08:57 15:49	08:06 16:56	06:54 18:02	06:28 20:10	05:11 21:17	04:19 22:12	04:27 22:15	05:23 21:19	06:30 19:58	07:33 18:34	07:44 16:16	08:45 15:31
9	08:56 15:51	08:04 16:59	06:52 18:04	06:25 20:13	05:09 21:19	04:18 22:13	04:28 22:14	05:26 21:17	06:32 19:55	07:36 18:31	07:46 16:14	08:46 15:30
10	08:55 15:53	08:01 17:01	06:49 18:06	06:23 20:15	05:06 21:21	04:18 22:14	04:30 22:13	05:28 21:15	06:34 19:52	07:38 18:28	07:48 16:12	08:48 15:30
11	08:54 15:55	07:59 17:03	06:46 18:08	06:20 20:17	05:04 21:23	04:17 22:15	04:31 22:12	05:30 21:12	06:36 19:50	07:40 18:26	07:51 16:10	08:49 15:30
12	08:53 15:56	07:57 17:06	06:43 18:11	06:17 20:19	05:02 21:25	04:16 22:16	04:33 22:10	05:32 21:10	06:38 19:47	07:42 18:23	07:53 16:07	08:50 15:29
13	08:52 15:58	07:54 17:08	06:41 18:13	06:14 20:21	05:00 21:27	04:16 22:17	04:34 22:09	05:34 21:07	06:40 19:44	07:44 18:20	07:55 16:05	08:51 15:29
14	08:51 16:00	07:52 17:11	06:38 18:15	06:12 20:24	04:58 21:29	04:16 22:18	04:36 22:08	05:36 21:05	06:42 19:41	07:47 18:18	07:57 16:03	08:53 15:29
15	08:50 16:02	07:49 17:13	06:35 18:17	06:09 20:26	04:56 21:31	04:15 22:19	04:37 22:06	05:38 21:02	06:44 19:38	07:49 18:15	08:00 16:02	08:54 15:29
16	08:48 16:04	07:47 17:15	06:32 18:20	06:06 20:28	04:53 21:34	04:15 22:19	04:39 22:05	05:40 21:00	06:46 19:35	07:51 18:12	08:02 16:00	08:55 15:29
17	08:47 16:06	07:44 17:18	06:30 18:22	06:04 20:30	04:51 21:36	04:15 22:20	04:40 22:03	05:43 20:57	06:49 19:33	07:53 18:10	08:04 15:58	08:56 15:29
18	08:46 16:08	07:42 17:20	06:27 18:24	06:01 20:33	04:49 21:38	04:15 22:20	04:42 22:02	05:45 20:55	06:51 19:30	07:56 18:07	08:06 15:56	08:56 15:29
19	08:44 16:10	07:39 17:22	06:24 18:26	05:58 20:35	04:48 21:40	04:15 22:21	04:44 22:00	05:47 20:52	06:53 19:27	07:58 18:04	08:09 15:54	08:57 15:29
20	08:43 16:13	07:37 17:25	06:21 18:29	05:56 20:37	04:46 21:42	04:15 22:21	04:46 21:59	05:49 20:50	06:55 19:24	08:00 18:02	08:11 15:52	08:58 15:29
21	08:41 16:15	07:34 17:27	06:18 18:31	05:53 20:39	04:44 21:44	04:15 22:21	04:47 21:57	05:51 20:47	06:57 19:21	08:02 17:59	08:13 15:51	08:59 15:30
22	08:40 16:17	07:32 17:29	06:16 18:33	05:50 20:41	04:42 21:45	04:15 22:22	04:49 21:55	05:53 20:44	06:59 19:19	08:05 17:57	08:15 15:49	08:59 15:30
23	08:38 16:19	07:29 17:32	06:13 18:35	05:48 20:44	04:40 21:47	04:15 22:22	04:51 21:53	05:55 20:42	07:01 19:16	08:07 17:54	08:17 15:48	09:00 15:31
24	08:36 16:21	07:27 17:34	06:10 18:37	05:45 20:46	04:38 21:49	04:15 22:22	04:53 21:51	05:58 20:39	07:03 19:13	08:09 17:51	08:19 15:46	09:00 15:31
25	08:34 16:24	07:24 17:36	06:07 18:40	05:43 20:48	04:37 21:51	04:16 22:22	04:55 21:50	06:00 20:36	07:06 19:10	07:11 16:49	08:21 15:45	09:00 15:32
26	08:33 16:26	07:21 17:39	06:04 18:42	05:40 20:50	04:35 21:53	04:16 22:22	04:57 21:48	06:02 20:34	07:08 19:07	07:14 16:46	08:23 15:43	09:01 15:33
27	08:31 16:28	07:19 17:41	06:02 18:44	05:37 20:53	04:34 21:55	04:17 22:22	04:59 21:46	06:04 20:31	07:10 19:04	07:16 16:44	08:25 15:42	09:01 15:34
28	08:29 16:30	07:16 17:43	05:59 18:46	05:35 20:55	04:32 21:56	04:17 22:21	05:01 21:44	06:06 20:28	07:12 19:02	07:18 16:41	08:27 15:41	09:01 15:34
29	08:27 16:33		06:56 19:48	05:32 20:57	04:31 21:58	04:18 22:21	05:03 21:42	06:08 20:26	07:14 18:59	07:21 16:39	08:29 15:39	09:01 15:35
30	08:25 16:35		06:53 19:51	05:30 20:59	04:29 22:00	04:19 22:21	05:05 21:40	06:10 20:23	07:16 18:56	07:23 16:37	08:31 15:38	09:01 15:36
31	08:23 16:37		06:50 19:53		04:28 22:01		05:07 21:37	06:13 20:20		07:25 16:34		09:01 15:38
Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Veverzemnieki - Shadow Receptor: 1.0×1.0 Azimuth: 3.1° Slope: 90.0° (586)
 Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January		February		March		April		May		June	
1	09:00	08:21			07:13	16:16 (11)	06:48	18:33 (12)	05:28	19:48 (4)	04:27	19:53 (4)
	15:39	16:40			17:46	40 16:56 (11)	19:55	31 19:26 (10)	21:01	40 20:28 (3)	22:02	21 20:14 (4)
2	09:00	08:19			07:11	16:15 (11)	06:45	18:33 (12)	05:25	19:46 (4)	04:26	19:54 (4)
	15:41	16:42			17:48	41 16:56 (11)	19:57	34 19:28 (10)	21:03	42 20:28 (3)	22:04	19 20:13 (4)
3	08:59	08:17			07:08	16:15 (11)	06:42	18:34 (12)	05:23	19:46 (4)	04:24	19:55 (4)
	15:42	16:45			17:50	41 16:56 (11)	19:59	34 19:30 (10)	21:05	42 20:28 (3)	22:05	18 21:24 (2)
4	08:59	08:14			07:05	16:14 (11)	06:39	18:36 (12)	05:20	19:45 (4)	04:23	19:56 (4)
	15:43	16:47			17:53	42 16:56 (11)	20:01	31 19:32 (10)	21:08	42 20:27 (3)	22:07	19 21:25 (2)
5	08:58	08:12			07:03	16:14 (11)	06:36	18:39 (12)	05:18	19:44 (4)	04:22	19:59 (4)
	15:45	16:49			17:55	41 16:55 (11)	20:04	27 19:34 (10)	21:10	43 20:27 (3)	22:08	17 21:27 (2)
6	08:58	08:10			07:00	16:14 (11)	06:34	19:17 (10)	05:16	19:43 (4)	04:21	20:01 (4)
	15:46	16:52			17:57	42 16:56 (11)	20:06	16 19:33 (10)	21:12	42 20:25 (3)	22:09	15 21:28 (2)
7	08:57	08:08			06:57	16:14 (11)	06:31	19:18 (10)	05:13	19:43 (4)	04:20	21:19 (2)
	15:48	16:54			17:59	42 16:56 (11)	20:08	13 19:31 (10)	21:14	40 20:23 (3)	22:11	10 21:29 (2)
8	08:56	08:06			06:54	16:14 (11)	06:28	19:19 (10)	05:11	19:42 (4)	04:19	21:18 (2)
	15:50	16:56			18:02	41 16:55 (11)	20:10	11 19:40 (14)	21:16	39 20:21 (4)	22:12	11 21:29 (2)
9	08:56	08:03			06:52	16:14 (11)	06:25	19:22 (10)	05:09	19:42 (4)	04:19	21:19 (2)
	15:51	16:59			18:04	40 16:54 (11)	20:12	12 19:43 (14)	21:19	39 20:21 (4)	22:13	12 21:31 (2)
10	08:55	08:01			06:49	16:14 (11)	06:23	19:33 (14)	05:06	19:42 (4)	04:18	21:18 (2)
	15:53	17:01			18:06	39 16:53 (11)	20:15	11 19:44 (14)	21:21	39 20:21 (4)	22:14	13 21:31 (2)
11	08:54	07:59			06:46	16:15 (11)	06:20	19:31 (14)	05:04	19:42 (4)	04:17	21:18 (2)
	15:55	17:03			18:08	38 16:53 (11)	20:17	15 19:46 (14)	21:23	39 20:21 (4)	22:15	15 21:33 (2)
12	08:53	07:56			06:43	16:16 (11)	06:17	19:31 (14)	05:02	19:42 (4)	04:17	21:19 (2)
	15:57	17:06			18:11	36 16:52 (11)	20:19	18 19:49 (14)	21:25	39 20:21 (4)	22:16	15 21:34 (2)
13	08:52	07:54			06:41	16:16 (11)	06:14	19:29 (14)	05:00	19:42 (4)	04:16	21:18 (2)
	15:59	17:08			18:13	34 16:50 (11)	20:21	22 19:51 (14)	21:27	39 20:21 (4)	22:17	16 21:34 (2)
14	08:50	07:52			06:38	16:17 (11)	06:12	19:28 (14)	04:58	19:42 (4)	04:16	21:18 (2)
	16:00	17:11			18:15	32 16:49 (11)	20:24	24 19:52 (14)	21:29	39 20:21 (4)	22:17	17 21:35 (2)
15	08:49	07:49			06:35	16:18 (11)	06:09	19:28 (14)	04:56	19:43 (4)	04:15	21:18 (2)
	16:02	17:13			18:17	29 16:47 (11)	20:26	24 19:52 (14)	21:31	38 20:21 (4)	22:18	18 21:36 (2)
16	08:48	07:47			06:32	16:20 (11)	06:06	19:28 (14)	04:54	19:43 (4)	04:15	21:19 (2)
	16:04	17:15			18:20	24 16:44 (11)	20:28	24 19:52 (14)	21:33	38 20:21 (4)	22:19	17 21:36 (2)
17	08:47	07:44			06:29	16:23 (11)	06:04	19:28 (14)	04:52	19:43 (4)	04:15	21:19 (2)
	16:06	17:18			18:22	19 16:42 (11)	20:30	24 19:52 (14)	21:35	38 20:21 (4)	22:19	18 21:37 (2)
18	08:45	07:42			06:27	16:27 (11)	06:01	19:28 (14)	04:50	19:43 (4)	04:15	21:19 (2)
	16:08	17:20			18:24	23 17:55 (13)	20:32	23 19:51 (14)	21:37	37 20:20 (4)	22:20	18 21:37 (2)
19	08:44	07:39			06:24	17:40 (12)	05:58	19:27 (14)	04:48	19:44 (4)	04:15	21:19 (2)
	16:11	17:22			18:26	17 17:57 (13)	20:35	23 19:50 (14)	21:39	36 20:20 (4)	22:20	19 21:38 (2)
20	08:42	07:37		16:31 (11)	06:21	17:38 (12)	05:56	19:28 (14)	04:46	19:44 (4)	04:15	21:19 (2)
	16:13	17:25	11	16:42 (11)	18:28	21 17:59 (13)	20:37	22 19:50 (14)	21:41	36 20:20 (4)	22:21	19 21:38 (2)
21	08:41	07:34		16:27 (11)	06:18	17:36 (12)	05:53	19:29 (14)	04:44	19:44 (4)	04:15	21:19 (2)
	16:15	17:27	19	16:46 (11)	18:31	25 18:01 (13)	20:39	19 19:48 (14)	21:43	35 20:19 (4)	22:21	19 21:38 (2)
22	08:39	07:32		16:25 (11)	06:16	17:34 (12)	05:50	19:30 (14)	04:42	19:45 (4)	04:15	21:19 (2)
	16:17	17:29	24	16:49 (11)	18:33	29 18:03 (13)	20:41	17 19:47 (14)	21:45	34 20:19 (4)	22:21	19 21:38 (2)
23	08:38	07:29		16:23 (11)	06:13	17:34 (12)	05:48	19:31 (14)	04:40	19:45 (4)	04:15	21:19 (2)
	16:19	17:32	27	16:50 (11)	18:35	31 18:05 (13)	20:43	14 19:45 (14)	21:47	33 20:18 (4)	22:21	19 21:38 (2)
24	08:36	07:26		16:21 (11)	06:10	17:33 (12)	05:45	19:34 (14)	04:39	19:46 (4)	04:16	21:20 (2)
	16:21	17:34	30	16:51 (11)	18:37	32 18:05 (13)	20:46	8 19:42 (14)	21:49	32 20:18 (4)	22:21	19 21:39 (2)
25	08:34	07:24		16:20 (11)	06:07	17:32 (12)	05:43	20:15 (3)	04:37	19:47 (4)	04:16	21:20 (2)
	16:24	17:36	33	16:53 (11)	18:39	32 18:04 (13)	20:48	1 20:16 (3)	21:51	31 20:18 (4)	22:21	18 21:38 (2)
26	08:32	07:21		16:19 (11)	06:04	17:31 (12)	05:40	20:00 (4)	04:35	19:47 (4)	04:16	21:21 (2)
	16:26	17:39	35	16:54 (11)	18:42	32 18:03 (13)	20:50	11 20:17 (3)	21:52	30 20:17 (4)	22:21	18 21:39 (2)
27	08:31	07:19		16:17 (11)	06:02	17:31 (12)	05:38	19:56 (4)	04:34	19:48 (4)	04:17	21:20 (2)
	16:28	17:41	37	16:54 (11)	18:44	31 18:02 (13)	20:52	23 20:20 (3)	21:54	29 20:17 (4)	22:21	18 21:38 (2)
28	08:29	07:16		16:16 (11)	05:59	17:31 (12)	05:35	19:52 (4)	04:32	19:49 (4)	04:18	21:21 (2)
	16:31	17:43	39	16:55 (11)	18:46	31 18:02 (12)	20:54	29 20:21 (3)	21:56	28 20:17 (4)	22:21	17 21:38 (2)
29	08:27				06:56	18:31 (12)	05:32	19:51 (4)	04:31	19:49 (4)	04:18	21:21 (2)
	16:33				19:48	30 19:01 (12)	20:57	33 20:24 (3)	21:58	26 20:15 (4)	22:21	16 21:37 (2)
30	08:25				06:53	18:31 (12)	05:30	19:49 (4)	04:29	19:51 (4)	04:19	21:22 (2)
	16:35				19:50	29 19:00 (12)	20:59	37 20:26 (3)	21:59	24 20:15 (4)	22:20	15 21:37 (2)
31	08:23				06:50	18:31 (12)			04:28	19:52 (4)		
	16:37				19:53	31 19:23 (10)			22:01	22 20:14 (4)		
Potential sun hours	227	262			365		429		515		539	
Total, worst case			255		1015		631		1111		505	
Sun reduction			0.19		0.40		0.43		0.58		0.56	
Oper. time red.			1.00		1.00		1.00		1.00		1.00	
Wind dir. red.			1.00		1.00		1.00		1.00		1.00	
Total reduction			0.19		0.40		0.43		0.58		0.56	
Total, real			50		409		268		646		282	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Veverzemnieki - Shadow Receptor: 1.0×1.0 Azimuth: 3.1° Slope: 90.0° (586)
Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	July		August		September		October		November		December
1	04:20	21:22 (2)	05:09	19:52 (4)	06:15	19:30 (14)	07:18	16:55 (11)	07:27	08:33	
2	04:21	21:23 (2)	05:11	19:52 (4)	06:17	19:31 (14)	07:20	16:54 (11)	07:30	08:34	
3	04:22	21:24 (2)	05:13	19:52 (4)	06:19	19:19 (10)	07:23	16:52 (11)	07:32	08:36	
4	04:23	21:25 (2)	05:15	19:52 (4)	06:21	19:17 (10)	07:25	16:51 (11)	07:34	08:38	
5	04:24	21:26 (2)	05:17	19:53 (4)	06:23	19:15 (10)	07:27	16:51 (11)	07:37	08:40	
6	04:25	21:27 (2)	05:19	19:53 (4)	06:25	19:14 (10)	07:29	16:50 (11)	07:39	08:41	
7	04:26	21:28 (2)	05:21	19:53 (4)	06:27	18:35 (12)	07:31	16:50 (11)	07:41	08:43	
8	04:27	21:29 (2)	05:23	19:53 (4)	06:29	18:33 (12)	07:33	16:49 (11)	07:43	08:44	
9	04:28	21:30 (2)	05:25	19:53 (4)	06:31	18:31 (12)	07:35	16:49 (11)	07:45	08:46	
10	04:29	21:31 (2)	05:27	19:53 (4)	06:33	18:29 (12)	07:37	16:49 (11)	07:47	08:47	
11	04:30	21:32 (2)	05:29	19:53 (4)	06:35	18:27 (12)	07:39	16:49 (11)	07:49	08:49	
12	04:31	21:33 (2)	05:31	19:53 (4)	06:37	18:25 (12)	07:41	16:49 (11)	07:51	08:50	
13	04:32	21:34 (2)	05:33	19:53 (4)	06:39	18:23 (12)	07:43	16:49 (11)	07:53	08:51	
14	04:33	21:35 (2)	05:35	19:53 (4)	06:41	18:21 (12)	07:45	16:49 (11)	07:55	08:52	
15	04:34	21:36 (2)	05:37	19:53 (4)	06:43	18:19 (12)	07:47	16:49 (11)	07:57	08:53	
16	04:35	21:37 (2)	05:39	19:53 (4)	06:45	18:17 (12)	07:49	16:49 (11)	07:59	08:54	
17	04:36	21:38 (2)	05:41	19:53 (4)	06:47	18:15 (12)	07:51	16:49 (11)	08:01	08:55	
18	04:37	21:39 (2)	05:43	19:53 (4)	06:49	18:13 (12)	07:53	16:49 (11)	08:03	08:56	
19	04:38	21:40 (2)	05:45	19:53 (4)	06:51	18:11 (12)	07:55	16:49 (11)	08:05	08:57	
20	04:39	21:41 (2)	05:47	19:53 (4)	06:53	18:09 (12)	07:57	16:49 (11)	08:07	08:58	
21	04:40	21:42 (2)	05:49	19:53 (4)	06:55	18:07 (12)	07:59	16:49 (11)	08:09	08:59	
22	04:41	21:43 (2)	05:51	19:53 (4)	06:57	18:05 (12)	08:01	16:49 (11)	08:11	09:00	
23	04:42	21:44 (2)	05:53	19:53 (4)	06:59	18:03 (12)	08:03	16:49 (11)	08:13	09:01	
24	04:43	21:45 (2)	05:55	19:53 (4)	07:01	18:01 (12)	08:05	16:49 (11)	08:15	09:02	
25	04:44	21:46 (2)	05:57	19:53 (4)	07:03	17:59 (12)	08:07	16:49 (11)	08:17	09:03	
26	04:45	21:47 (2)	05:59	19:53 (4)	07:05	17:57 (12)	08:09	16:49 (11)	08:19	09:04	
27	04:46	21:48 (2)	06:01	19:53 (4)	07:07	17:55 (12)	08:11	16:49 (11)	08:21	09:05	
28	04:47	21:49 (2)	06:03	19:53 (4)	07:09	17:53 (12)	08:13	16:49 (11)	08:23	09:06	
29	04:48	21:50 (2)	06:05	19:53 (4)	07:11	17:51 (12)	08:15	16:49 (11)	08:25	09:07	
30	04:49	21:51 (2)	06:07	19:53 (4)	07:13	17:49 (12)	08:17	16:49 (11)	08:27	09:08	
31	04:50	21:52 (2)	06:09	19:53 (4)	07:15	17:47 (12)	08:19	16:49 (11)	08:29	09:09	
Potential sun hours	538		474		386		321		241	207	
Total, worst case	828		872		761		767				
Sun reduction	0.47		0.50		0.46		0.28				
Oper. time red.	1.00		1.00		1.00		1.00				
Wind dir. red.	1.00		1.00		1.00		1.00				
Total reduction	0.47		0.50		0.46		0.28				
Total, real	389		440		352		217				

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa
Assumptions for shadow calculations

Shadow receptor: Vež i - Shadow Receptor: 1.0×1.0 Azimuth: 3.1° Slope: 90.0° (784)
Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:40	08:21 16:40	07:14 17:46	06:48 19:55	05:28 21:02	04:27 22:03	04:20 22:20	05:09 21:36	06:15 20:18	07:19 18:54	07:28 16:32	08:33 15:37
2	09:00 15:41	08:19 16:42	07:11 17:48	06:45 19:57	05:25 21:04	04:26 22:04	04:21 22:20	05:11 21:33	06:17 20:15	07:21 18:51	07:30 16:30	08:35 15:36
3	09:00 15:42	08:17 16:45	07:08 17:51	06:42 20:00	05:23 21:06	04:25 22:06	04:22 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:37 15:35
4	08:59 15:44	08:15 16:47	07:06 17:53	06:40 20:02	05:21 21:08	04:23 22:07	04:23 22:18	05:15 21:29	06:21 20:09	07:25 18:45	07:35 16:25	08:38 15:34
5	08:59 15:45	08:13 16:50	07:03 17:55	06:37 20:04	05:18 21:10	04:22 22:09	04:24 22:18	05:18 21:27	06:24 20:07	07:27 18:42	07:37 16:23	08:40 15:34
6	08:58 15:47	08:11 16:52	07:00 17:57	06:34 20:06	05:16 21:13	04:21 22:10	04:25 22:17	05:20 21:24	06:26 20:04	07:29 18:40	07:39 16:21	08:42 15:33
7	08:58 15:48	08:08 16:54	06:57 18:00	06:31 20:08	05:14 21:15	04:21 22:11	04:26 22:16	05:22 21:22	06:28 20:01	07:32 18:37	07:42 16:18	08:43 15:32
8	08:57 15:50	08:06 16:57	06:55 18:02	06:29 20:11	05:11 21:17	04:20 22:12	04:28 22:15	05:24 21:20	06:30 19:58	07:34 18:34	07:44 16:16	08:45 15:31
9	08:56 15:52	08:04 16:59	06:52 18:04	06:26 20:13	05:09 21:19	04:19 22:13	04:29 22:14	05:26 21:17	06:32 19:55	07:36 18:31	07:46 16:14	08:46 15:31
10	08:55 15:53	08:02 17:01	06:49 18:07	06:23 20:15	05:07 21:21	04:18 22:14	04:30 22:13	05:28 21:15	06:34 19:53	07:38 18:29	07:48 16:12	08:48 15:30
11	08:54 15:55	07:59 17:04	06:47 18:09	06:20 20:17	05:04 21:23	04:18 22:15	04:32 22:12	05:30 21:12	06:36 19:50	07:40 18:26	07:51 16:10	08:49 15:30
12	08:53 15:57	07:57 17:06	06:44 18:11	06:18 20:20	05:02 21:25	04:17 22:16	04:33 22:11	05:32 21:10	06:38 19:47	07:43 18:23	07:53 16:08	08:50 15:30
13	08:52 15:59	07:54 17:09	06:41 18:13	06:15 20:22	05:00 21:28	04:16 22:17	04:34 22:09	05:34 21:08	06:40 19:44	07:45 18:21	07:55 16:06	08:52 15:29
14	08:51 16:01	07:52 17:11	06:38 18:16	06:12 20:24	04:58 21:30	04:16 22:18	04:36 22:08	05:37 21:05	06:43 19:41	07:47 18:18	07:58 16:04	08:53 15:29
15	08:50 16:03	07:50 17:13	06:35 18:18	06:09 20:26	04:56 21:32	04:16 22:19	04:38 22:07	05:39 21:03	06:45 19:39	07:49 18:15	08:00 16:02	08:54 15:29
16	08:49 16:05	07:47 17:16	06:33 18:20	06:07 20:28	04:54 21:34	04:15 22:19	04:39 22:05	05:41 21:00	06:47 19:36	07:51 18:13	08:02 16:00	08:55 15:29
17	08:47 16:07	07:45 17:18	06:30 18:22	06:04 20:31	04:52 21:36	04:15 22:20	04:41 22:04	05:43 20:57	06:49 19:33	07:54 18:10	08:04 15:58	08:56 15:29
18	08:46 16:09	07:42 17:20	06:27 18:24	06:01 20:33	04:50 21:38	04:15 22:20	04:43 22:02	05:45 20:55	06:51 19:30	07:56 18:07	08:07 15:56	08:57 15:29
19	08:44 16:11	07:40 17:23	06:24 18:27	05:59 20:35	04:48 21:40	04:15 22:21	04:44 22:00	05:47 20:52	06:53 19:27	07:58 18:05	08:09 15:55	08:57 15:29
20	08:43 16:13	07:37 17:25	06:22 18:29	05:56 20:37	04:46 21:42	04:15 22:21	04:46 21:59	05:49 20:50	06:55 19:24	08:00 18:02	08:11 15:53	08:58 15:30
21	08:41 16:15	07:35 17:27	06:19 18:31	05:53 20:39	04:44 21:44	04:15 22:22	04:48 21:57	05:52 20:47	06:57 19:22	08:03 17:59	08:13 15:51	08:59 15:30
22	08:40 16:17	07:32 17:30	06:16 18:33	05:51 20:42	04:42 21:46	04:15 22:22	04:50 21:55	05:54 20:44	06:59 19:19	08:05 17:57	08:15 15:50	08:59 15:31
23	08:38 16:20	07:29 17:32	06:13 18:35	05:48 20:44	04:41 21:47	04:16 22:22	04:52 21:53	05:56 20:42	07:02 19:16	08:07 17:54	08:17 15:48	09:00 15:31
24	08:36 16:22	07:27 17:34	06:10 18:38	05:46 20:46	04:39 21:49	04:16 22:22	04:53 21:52	05:58 20:39	07:04 19:13	08:09 17:52	08:19 15:47	09:00 15:32
25	08:35 16:24	07:24 17:37	06:08 18:40	05:43 20:48	04:37 21:51	04:16 22:22	04:55 21:50	06:00 20:37	07:06 19:10	07:12 16:49	08:21 15:45	09:01 15:32
26	08:33 16:26	07:22 17:39	06:05 18:42	05:40 20:51	04:36 21:53	04:17 22:22	04:57 21:48	06:02 20:34	07:08 19:08	07:14 16:47	08:23 15:44	09:01 15:33
27	08:31 16:29	07:19 17:41	06:02 18:44	05:38 20:53	04:34 21:55	04:17 22:22	04:59 21:46	06:04 20:31	07:10 19:05	07:16 16:44	08:25 15:42	09:01 15:34
28	08:29 16:31	07:16 17:44	05:59 18:46	05:35 20:55	04:33 21:56	04:18 22:21	05:01 21:44	06:07 20:28	07:12 19:02	07:19 16:42	08:27 15:41	09:01 15:35
29	08:27 16:33		06:56 19:49	05:33 20:57	04:31 21:58	04:19 22:21	05:03 21:42	06:09 20:26	07:14 18:59	07:21 16:39	08:29 15:40	09:01 15:36
30	08:25 16:35		06:54 19:51	05:30 20:59	04:30 22:00	04:19 22:21	05:05 21:40	06:11 20:23	07:16 18:56	07:23 16:37	08:31 15:39	09:01 15:37
31	08:23 16:38		06:51 19:53		04:28 22:01		05:07 21:38	06:13 20:20		07:25 16:35		09:01 15:38
Potential sun hours	227	262	365	429	515	539	538	474	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Vež ukrogs - Shadow Receptor: 1.0×1.0 Azimuth: 3.1° Slope: 90.0° (797)
Sunshine probability S (Average daily sunshine hours) []

Assumptions for shadow calculations

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:40	08:21 16:40	07:14 17:46	08:00 (7) 17:46	06:48 19:55	05:28 21:02	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:18	07:19 18:54	07:28 16:32
2	09:00 15:41	08:19 16:42	07:11 17:48	08:09 (7) 17:48	06:45 19:57	05:25 21:04	04:26 22:04	04:21 22:20	05:11 21:33	06:17 20:15	07:21 18:51	07:30 16:30
3	09:00 15:42	08:17 16:45	07:08 17:51		06:42 20:00	05:23 21:06	04:25 22:06	04:22 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27
4	08:59 15:44	08:15 16:47	07:06 17:53		06:40 20:02	05:21 21:08	04:24 22:07	04:23 22:18	05:15 21:29	06:21 20:09	07:25 18:45	07:35 16:25
5	08:59 15:45	08:13 16:50	07:03 17:55		06:37 20:04	05:18 21:10	04:22 22:09	04:24 22:18	05:18 21:27	06:24 20:06	07:27 18:42	07:37 16:23
6	08:58 15:47	08:11 16:52	07:00 17:57		06:34 20:06	05:16 21:12	04:21 22:10	04:25 22:17	05:20 21:24	06:26 20:04	07:29 18:40	07:39 16:21
7	08:58 15:48	08:08 16:54	06:57 18:00		06:31 20:08	05:14 21:15	04:21 22:11	04:26 22:16	05:22 21:22	06:28 20:01	07:32 18:37	07:42 16:18
8	08:57 15:50	08:06 16:57	06:55 18:02		06:29 20:11	05:11 21:17	04:20 22:12	04:28 22:15	05:24 21:20	06:30 19:58	07:34 18:34	07:44 16:16
9	08:56 15:52	08:04 16:59	06:52 18:04		06:26 20:13	05:09 21:19	04:19 22:13	04:29 22:14	05:26 21:17	06:32 19:55	07:36 18:31	07:46 16:14
10	08:55 15:53	08:01 17:01	06:49 18:07		06:23 20:15	05:07 21:21	04:18 22:14	04:30 22:13	05:28 21:15	06:34 19:53	07:38 18:29	07:48 16:12
11	08:54 15:55	07:59 17:04	06:47 18:09		06:20 20:17	05:05 21:23	04:18 22:15	04:32 22:12	05:30 21:12	06:36 19:50	07:40 18:26	07:51 16:10
12	08:53 15:57	07:57 17:06	06:44 18:11		06:18 20:19	05:02 21:25	04:17 22:16	04:33 22:10	05:32 21:10	06:38 19:47	07:43 18:23	07:53 16:08
13	08:52 15:59	07:54 17:09	06:41 18:13		06:15 20:22	05:00 21:27	04:16 22:17	04:35 22:09	05:34 21:07	06:40 19:44	07:45 18:21	07:55 16:06
14	08:51 16:01	07:52 17:11	06:38 18:15		06:12 20:24	04:58 21:30	04:16 22:18	04:36 22:08	05:37 21:05	06:43 19:41	07:47 18:18	07:58 16:04
15	08:50 16:03	07:50 17:13	06:35 18:18	2	07:06 (6) 20:26	04:56 21:32	04:16 22:19	04:38 22:06	05:39 21:02	06:45 19:39	07:49 18:15	08:00 16:02
16	08:48 16:05	07:47 17:16	06:33 18:20	6	07:08 (6) 20:28	04:54 21:34	04:15 22:19	04:39 22:05	05:41 21:00	06:47 19:36	07:51 18:13	08:02 16:00
17	08:47 16:07	07:45 17:18	06:30 18:22	10	06:56 (6) 20:31	04:52 21:36	04:15 22:20	04:41 22:04	05:43 20:57	06:49 19:33	07:54 18:10	08:04 15:58
18	08:46 16:09	07:42 17:20	06:27 18:24	13	07:09 (6) 20:33	04:50 21:38	04:15 22:20	04:43 22:02	05:45 20:55	06:51 19:30	07:56 18:07	08:06 15:56
19	08:44 16:11	07:40 17:23	06:24 18:27	16	06:52 (6) 20:35	04:48 21:40	04:15 22:21	04:44 22:00	05:47 20:52	06:53 19:27	07:58 18:05	08:09 15:55
20	08:43 16:13	07:37 17:25	06:21 18:29	17	07:09 (6) 20:37	04:46 21:42	04:15 22:21	04:46 21:59	05:49 20:50	06:55 19:24	08:00 18:02	08:11 15:53
21	08:41 16:15	07:35 17:27	06:19 18:31	16	06:53 (6) 20:39	04:44 21:44	04:15 22:22	04:48 21:57	05:52 20:47	06:57 19:22	08:03 17:59	08:13 15:51
22	08:40 16:17	07:32 17:30	06:16 18:33	15	06:53 (6) 20:42	04:42 21:46	04:15 22:22	04:50 21:55	05:54 20:44	06:59 19:19	08:05 17:57	08:15 15:50
23	08:38 16:20	07:29 17:32	06:13 18:35	13	06:54 (6) 20:44	04:41 21:47	04:16 22:22	04:52 21:53	05:56 20:42	07:02 19:16	08:07 17:53	08:17 15:48
24	08:36 16:22	07:27 17:34	06:10 18:38	10	07:04 (6) 20:46	04:39 21:49	04:16 22:22	04:53 21:52	05:58 20:39	07:04 19:13	08:09 17:52	08:19 15:47
25	08:35 16:24	07:24 17:37	06:08 18:40		05:43 20:48	04:37 21:51	04:16 22:22	04:55 21:50	06:00 20:36	07:06 19:10	07:12 17:52	08:21 15:45
26	08:33 16:26	07:22 17:39	06:05 18:42		05:40 20:50	04:36 21:53	04:17 22:22	04:57 21:48	06:02 20:34	07:08 19:08	07:14 17:51	08:23 15:44
27	08:31 16:29	07:19 17:41	06:02 18:44		05:38 20:53	04:34 21:55	04:17 22:22	04:59 21:46	06:04 20:31	07:10 19:05	07:16 17:51	08:25 15:42
28	08:29 16:31	07:16 17:44	05:59 18:46		05:35 20:55	04:33 21:56	04:18 22:21	05:01 21:44	06:07 20:28	07:12 19:02	07:19 17:51	08:27 15:41
29	08:27 16:33		05:56 19:49		05:33 20:57	04:31 21:58	04:19 22:21	05:03 21:42	06:09 20:26	07:14 18:59	07:21 17:44	08:29 15:40
30	08:25 16:35		05:54 19:51		05:30 20:59	04:30 22:00	04:19 22:21	05:05 21:40	06:11 20:23	07:16 18:56	07:23 17:37	08:31 15:39
31	08:23 16:38		05:51 19:53		06:51 20:53	04:28 22:01		05:07 21:38	06:13 20:20		07:25 16:35	09:01 15:38
Potential sun hours	227	262	365		429	515	539	538	474	386	321	241
Total, worst case												207
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real		24	51							56	39	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Last time (hh:mm) with flicker	(WTG causing flicker last time)

Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa
Assumptions for shadow calculations

Shadow receptor: Viteni - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (487)
Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January			February			March			April	May	June
1	09:00		14:33 (4)	08:21		15:40 (14)	07:13			06:48	05:27	04:27
	15:39	20	14:53 (4)	16:40	17	15:57 (14)	17:46			19:55	21:01	22:02
2	09:00		14:33 (4)	08:19		15:41 (14)	07:11			06:45	05:25	04:25
	15:41	21	14:54 (4)	16:42	16	15:57 (14)	17:48			19:57	21:03	22:04
3	09:00		14:34 (4)	08:17		15:43 (14)	07:08			06:42	05:23	04:24
	15:42	22	14:56 (4)	16:44	13	15:56 (14)	17:50			19:59	21:06	22:05
4	08:59		14:34 (4)	08:15		15:44 (14)	07:05			06:39	05:20	04:23
	15:43	23	14:57 (4)	16:47	10	15:54 (14)	17:53			20:01	21:08	22:07
5	08:59		14:34 (4)	08:12		15:48 (14)	07:03			06:36	05:18	04:22
	15:45	23	14:57 (4)	16:49	4	15:52 (14)	17:55			20:04	21:10	22:08
6	08:58		14:34 (4)	08:10			07:00			06:34	05:15	04:21
	15:46	24	14:58 (4)	16:52			17:57			20:06	21:12	22:09
7	08:57		14:34 (4)	08:08			06:57			06:31	05:13	04:20
	15:48	24	14:58 (4)	16:54			17:59			20:08	21:14	22:11
8	08:57		14:35 (4)	08:06			06:54			06:28	05:11	04:19
	15:49	24	14:59 (4)	16:56			18:02			20:10	21:16	22:12
9	08:56		14:35 (4)	08:03		16:24 (2)	06:52			06:25	05:09	04:18
	15:51	25	15:00 (4)	16:59	1	16:25 (2)	18:04			20:13	21:19	22:13
10	08:55		14:36 (4)	08:01		16:20 (2)	06:49			06:23	05:06	04:18
	15:53	24	15:00 (4)	17:01	7	16:27 (2)	18:06			20:15	21:21	22:14
11	08:54		14:36 (4)	07:59		16:18 (2)	06:46			06:20	05:04	04:17
	15:55	24	15:00 (4)	17:03	12	16:30 (2)	18:08			20:17	21:23	22:15
12	08:53		14:36 (4)	07:56		16:17 (2)	06:43			06:17	05:02	04:17
	15:57	25	15:01 (4)	17:06	15	16:32 (2)	18:11			20:19	21:25	22:16
13	08:52		14:36 (4)	07:54		16:16 (2)	06:41			06:14	05:00	04:16
	15:58	24	15:00 (4)	17:08	19	16:35 (2)	18:13			20:21	21:27	22:17
14	08:51		14:37 (4)	07:52		16:15 (2)	06:38			06:12	04:58	04:16
	16:00	24	15:01 (4)	17:11	23	16:38 (2)	18:15			20:24	21:29	22:18
15	08:49		14:37 (4)	07:49		16:14 (2)	06:35			06:09	04:56	04:15
	16:02	24	15:01 (4)	17:13	26	16:40 (2)	18:17			20:26	21:31	22:18
16	08:48		14:39 (4)	07:47		16:14 (2)	06:32			06:06	04:54	04:15
	16:04	23	15:02 (4)	17:15	27	16:41 (2)	18:20			20:28	21:33	22:19
17	08:47		14:39 (4)	07:44		16:13 (2)	06:29		17:52 (1)	06:04	04:51	04:15
	16:06	23	15:02 (4)	17:18	29	16:45 (3)	18:22	1	17:53 (1)	20:30	21:35	22:20
18	08:45		14:40 (4)	07:42		16:13 (2)	06:27		17:51 (1)	06:01	04:50	04:15
	16:08	21	15:01 (4)	17:20	32	16:48 (3)	18:24	4	17:55 (1)	20:32	21:37	22:20
19	08:44		14:40 (4)	07:39		16:13 (2)	06:24		17:50 (1)	05:58	04:48	04:15
	16:10	21	15:01 (4)	17:22	36	16:51 (3)	18:26	7	17:57 (1)	20:35	21:39	22:21
20	08:42		14:42 (4)	07:37		16:13 (2)	06:21		17:49 (1)	05:56	04:46	04:15
	16:13	19	15:01 (4)	17:25	39	16:53 (3)	18:28	10	17:59 (1)	20:37	21:41	22:21
21	08:41		14:43 (4)	07:34		16:13 (2)	06:18		17:49 (1)	05:53	04:44	04:15
	16:15	18	15:01 (4)	17:27	40	16:55 (3)	18:31	12	18:01 (1)	20:39	21:43	22:21
22	08:39		14:44 (4)	07:32		16:14 (2)	06:16		17:49 (1)	05:50	04:42	04:15
	16:17	16	15:00 (4)	17:29	42	16:58 (3)	18:33	14	18:03 (1)	20:41	21:45	22:21
23	08:38		14:46 (4)	07:29		16:14 (2)	06:13		17:50 (1)	05:48	04:40	04:15
	16:19	14	15:40 (14)	17:32	42	16:59 (3)	18:35	14	18:04 (1)	20:43	21:47	22:22
24	08:36		14:48 (4)	07:26		16:15 (2)	06:10		17:50 (1)	05:45	04:39	04:15
	16:21	12	15:42 (14)	17:34	38	16:58 (3)	18:37	13	18:03 (1)	20:46	21:49	22:22
25	08:34		15:39 (14)	07:24		16:16 (2)	06:07		17:52 (1)	05:43	04:37	04:16
	16:24	6	15:45 (14)	17:36	33	16:57 (3)	18:39	8	18:00 (1)	20:48	21:51	22:22
26	08:32		15:39 (14)	07:21		16:18 (2)	06:04		05:40	04:35	04:16	
	16:26	9	15:48 (14)	17:39	26	16:55 (3)	18:42		20:50	21:53	22:21	
27	08:31		15:38 (14)	07:19		16:20 (2)	06:02		05:37	04:34	04:17	
	16:28	12	15:50 (14)	17:41	13	16:33 (2)	18:44		20:52	21:54	22:21	
28	08:29		15:38 (14)	07:16		16:24 (2)	05:59		05:35	04:32	04:17	
	16:30	14	15:52 (14)	17:43	4	16:28 (2)	18:46		20:55	21:56	22:21	
29	08:27		15:39 (14)				06:56		05:32	04:31	04:18	
	16:33	16	15:55 (14)				19:48		20:57	21:58	22:21	
30	08:25		15:39 (14)				06:53		05:30	04:29	04:19	
	16:35	19	15:58 (14)				19:50		20:59	21:59	22:20	
31	08:23		15:40 (14)				06:50			04:28		
	16:37	18	15:58 (14)				19:53			22:01		
Potential sun hours	227			262			365		429	515	539	
Total, worst case		612			564		83					
Sun reduction		0.11			0.19		0.40					
Oper. time red.		1.00			1.00		1.00					
Wind dir. red.		1.00			1.00		1.00					
Total reduction		0.11			0.19		0.40					
Total, real		67			110		33					

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Viteni - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (487)
Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	July	August	September	October	November	December
1	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:27 16:32	15:50 (2) 15:56 (2)
2	04:21 22:19	05:11 21:33	06:17 20:14	07:20 18:50	07:30 16:29	15:37 15:36
3	04:21 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	15:36 15:35
4	04:22 22:18	05:15 21:28	06:21 20:09	07:25 18:45	07:34 16:25	15:38 15:34
5	04:24 22:17	05:17 21:26	06:23 20:06	07:27 18:42	07:37 16:23	15:40 15:33
6	04:25 22:16	05:19 21:24	06:25 20:03	07:29 18:39	07:39 16:20	15:37 (14) 15:22 (14)
7	04:26 22:16	05:21 21:22	06:27 20:01	07:31 18:37	07:41 16:18	15:14 (14) 15:25 (14)
8	04:27 22:15	05:23 21:19	06:29 19:58	07:33 18:34	07:43 16:16	15:13 (14) 15:26 (14)
9	04:28 22:14	05:26 21:17	06:32 19:55	07:36 18:31	07:46 16:14	15:12 (14) 15:27 (14)
10	04:30 22:12	05:28 21:14	06:34 19:52	07:38 18:28	07:48 16:12	15:11 (14) 15:28 (14)
11	04:31 22:11	05:30 21:12	06:36 19:49	07:40 18:26	07:50 16:10	15:11 (14) 15:29 (14)
12	04:33 22:10	05:32 21:10	06:38 19:47	07:42 18:23	07:53 16:07	15:10 (14) 15:29 (14)
13	04:34 22:09	05:34 21:07	06:40 19:44	07:44 18:20	07:55 16:05	15:11 (14) 15:27 (14)
14	04:36 22:08	05:36 21:05	06:42 19:41	07:47 18:18	07:57 16:03	15:11 (14) 15:25 (14)
15	04:37 22:06	05:38 21:02	06:44 19:38	07:49 18:15	07:59 16:02	15:11 (14) 15:22 (14)
16	04:39 22:05	05:40 21:00	06:46 19:35	07:51 18:12	08:02 16:00	15:12 (14) 15:21 (14)
17	04:40 22:03	05:43 20:57	06:48 19:33	07:53 18:10	08:04 15:58	15:12 (14) 15:18 (14)
18	04:42 22:02	05:45 20:55	06:51 19:30	07:55 18:07	08:06 15:56	14:22 (4) 15:16 (14)
19	04:44 22:00	05:47 20:52	06:53 19:27	07:58 18:04	08:08 15:54	14:20 (4) 15:14 (14)
20	04:46 21:58	05:49 20:49	06:55 19:24	08:00 18:02	08:10 15:52	14:19 (4) 14:35 (4)
21	04:47 21:57	05:51 20:47	06:57 19:21	08:02 17:59	08:13 15:51	14:18 (4) 14:36 (4)
22	04:49 21:55	05:53 20:44	06:59 19:18	08:04 17:57	08:15 15:49	14:18 (4) 14:37 (4)
23	04:51 21:53	05:55 20:41	07:01 19:16	08:07 17:54	08:17 15:48	14:17 (4) 14:38 (4)
24	04:53 21:51	05:58 20:39	07:03 19:13	08:09 17:51	08:19 15:46	09:00 14:38 (4)
25	04:55 21:49	06:00 20:36	07:05 19:10	08:11 17:49	08:21 15:45	09:00 14:40 (4)
26	04:57 21:47	06:02 20:33	07:08 19:07	08:14 17:46	08:23 15:43	09:00 14:40 (4)
27	04:59 21:45	06:04 20:31	07:10 19:04	08:16 17:44	08:25 15:42	09:01 14:40 (4)
28	05:01 21:43	06:06 20:28	07:12 19:02	08:18 17:41	08:27 15:41	09:01 14:41 (4)
29	05:03 21:41	06:08 20:25	07:14 18:59	08:20 17:39	08:29 15:39	09:01 14:42 (4)
30	05:05 21:39	06:10 20:23	07:16 18:56	08:23 17:37	08:31 15:38	09:01 14:42 (4)
31	05:07 21:37	06:13 20:20		08:25 17:34	08:33 15:39	09:00 14:42 (4)
Potential sun hours	538	474	386	321	241	207
Total, worst case			91	511	423	563
Sun reduction			0.46	0.28	0.08	0.06
Oper. time red.			1.00	1.00	1.00	1.00
Wind dir. red.			1.00	1.00	1.00	1.00
Total reduction			0.46	0.28	0.08	0.06
Total, real			42	145	33	35

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Zala iela 1 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (657)
 Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:28 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
2	09:00 15:40	08:19 16:42	07:11 17:48	06:45 19:57	05:25 21:04	04:25 22:04	04:20 22:20	05:11 21:33	06:17 20:15	07:21 18:51	07:30 16:29	08:35 15:36
3	09:00 15:42	08:17 16:44	07:08 17:50	06:42 19:59	05:23 21:06	04:24 22:06	04:21 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:37 15:35
4	08:59 15:43	08:15 16:47	07:05 17:53	06:39 20:02	05:20 21:08	04:23 22:07	04:22 22:18	05:15 21:29	06:21 20:09	07:25 18:45	07:35 16:25	08:38 15:34
5	08:59 15:45	08:13 16:49	07:03 17:55	06:37 20:04	05:18 21:10	04:22 22:09	04:24 22:18	05:17 21:27	06:23 20:06	07:27 18:42	07:37 16:23	08:40 15:33
6	08:58 15:46	08:10 16:52	07:00 17:57	06:34 20:06	05:16 21:12	04:21 22:10	04:25 22:17	05:19 21:24	06:25 20:04	07:29 18:39	07:39 16:20	08:42 15:32
7	08:58 15:48	08:08 16:54	06:57 17:59	06:31 20:08	05:13 21:15	04:20 22:11	04:26 22:16	05:21 21:22	06:27 20:01	07:31 18:37	07:41 16:18	08:43 15:32
8	08:57 15:49	08:06 16:56	06:55 18:02	06:28 20:11	05:11 21:17	04:19 22:12	04:27 22:15	05:23 21:20	06:30 19:58	07:34 18:34	07:44 16:16	08:45 15:31
9	08:56 15:51	08:04 16:59	06:52 18:04	06:25 20:13	05:09 21:19	04:18 22:13	04:28 22:14	05:26 21:17	06:32 19:55	07:36 18:31	07:46 16:14	08:46 15:31
10	08:55 15:53	08:01 17:01	06:49 18:06	06:23 20:15	05:06 21:21	04:18 22:14	04:30 22:13	05:28 21:15	06:34 19:52	07:38 18:28	07:48 16:12	08:48 15:30
11	08:54 15:55	07:59 17:04	06:46 18:09	06:20 20:17	05:04 21:23	04:17 22:15	04:31 22:12	05:30 21:12	06:36 19:50	07:40 18:26	07:51 16:10	08:49 15:30
12	08:53 15:57	07:57 17:06	06:44 18:11	06:17 20:19	05:02 21:25	04:17 22:16	04:33 22:10	05:32 21:10	06:38 19:47	07:42 18:23	07:53 16:08	08:50 15:29
13	08:52 15:58	07:54 17:08	06:41 18:13	06:15 20:22	05:00 21:27	04:16 22:17	04:34 22:09	05:34 21:07	06:40 19:44	07:45 18:20	07:55 16:05	08:51 15:29
14	08:51 16:00	07:52 17:11	06:38 18:15	06:12 20:24	04:58 21:30	04:16 22:18	04:36 22:08	05:36 21:05	06:42 19:41	07:47 18:18	07:57 16:04	08:53 15:29
15	08:50 16:02	07:49 17:13	06:35 18:17	06:09 20:26	04:56 21:32	04:15 22:19	04:37 22:06	05:38 21:02	06:44 19:38	07:49 18:15	08:00 16:02	08:54 15:29
16	08:48 16:04	07:47 17:15	06:32 18:20	06:06 20:28	04:54 21:34	04:15 22:19	04:39 22:05	05:41 21:00	06:47 19:36	07:51 18:12	08:02 16:00	08:55 15:29
17	08:47 16:06	07:45 17:18	06:30 18:22	06:04 20:30	04:51 21:36	04:15 22:20	04:40 22:04	05:43 20:57	06:49 19:33	07:53 18:10	08:04 15:58	08:56 15:29
18	08:46 16:08	07:42 17:20	06:27 18:24	06:01 20:33	04:50 21:38	04:15 22:20	04:42 22:02	05:45 20:55	06:51 19:30	07:56 18:07	08:06 15:56	08:57 15:29
19	08:44 16:10	07:40 17:22	06:24 18:26	05:58 20:35	04:48 21:40	04:15 22:21	04:44 22:00	05:47 20:52	06:53 19:27	07:58 18:04	08:09 15:54	08:57 15:29
20	08:43 16:13	07:37 17:25	06:21 18:29	05:56 20:37	04:46 21:42	04:15 22:21	04:46 21:59	05:49 20:50	06:55 19:24	08:00 18:02	08:11 15:53	08:58 15:29
21	08:41 16:15	07:34 17:27	06:18 18:31	05:53 20:39	04:44 21:44	04:15 22:22	04:47 21:57	05:51 20:47	06:57 19:21	08:02 17:59	08:13 15:51	08:59 15:30
22	08:40 16:17	07:32 17:30	06:16 18:33	05:50 20:41	04:42 21:46	04:15 22:22	04:49 21:55	05:53 20:44	06:59 19:19	08:05 17:57	08:15 15:49	08:59 15:30
23	08:38 16:19	07:29 17:32	06:13 18:35	05:48 20:44	04:40 21:47	04:15 22:22	04:51 21:53	05:56 20:42	07:01 19:16	08:07 17:54	08:17 15:48	09:00 15:31
24	08:36 16:21	07:27 17:34	06:10 18:37	05:45 20:46	04:39 21:49	04:15 22:22	04:53 21:52	05:58 20:39	07:03 19:13	08:09 17:51	08:19 15:46	09:00 15:31
25	08:35 16:24	07:24 17:37	06:07 18:40	05:43 20:48	04:37 21:51	04:16 22:22	04:55 21:50	06:00 20:36	07:06 19:10	07:12 16:49	08:21 15:45	09:00 15:32
26	08:33 16:26	07:21 17:39	06:04 18:42	05:40 20:50	04:35 21:53	04:16 22:22	04:57 21:48	06:02 20:34	07:08 19:07	07:14 16:46	08:23 15:43	09:01 15:33
27	08:31 16:28	07:19 17:41	06:02 18:44	05:38 20:53	04:34 21:55	04:17 22:22	04:59 21:46	06:04 20:31	07:10 19:05	07:16 16:44	08:25 15:42	09:01 15:34
28	08:29 16:30	07:16 17:43	05:59 18:46	05:35 20:55	04:32 21:56	04:17 22:21	05:01 21:44	06:06 20:28	07:12 19:02	07:18 16:41	08:27 15:41	09:01 15:34
29	08:27 16:33		05:56 19:48	05:32 20:57	04:31 21:58	04:18 22:21	05:03 21:42	06:08 20:26	07:14 18:59	07:21 16:39	08:29 15:39	09:01 15:35
30	08:25 16:35		05:53 19:51	05:30 20:59	04:29 22:00	04:19 22:21	05:05 21:40	06:10 20:23	07:16 18:56	07:23 16:37	08:31 15:38	09:01 15:37
31	08:23 16:37		05:50 19:53		04:28 22:01		05:07 21:38	06:13 20:20		07:25 16:34		09:01 15:38
Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Zala iela 10 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (667)
 Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:28 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
2	09:00 15:40	08:19 16:42	07:11 17:48	06:45 19:57	05:25 21:04	04:25 22:04	04:20 22:20	05:11 21:33	06:17 20:15	07:21 18:51	07:30 16:29	08:35 15:36
3	09:00 15:42	08:17 16:44	07:08 17:50	06:42 19:59	05:23 21:06	04:24 22:06	04:21 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:37 15:35
4	08:59 15:43	08:15 16:47	07:05 17:53	06:39 20:02	05:20 21:08	04:23 22:07	04:22 22:18	05:15 21:29	06:21 20:09	07:25 18:45	07:35 16:25	08:38 15:34
5	08:59 15:45	08:13 16:49	07:03 17:55	06:37 20:04	05:18 21:10	04:22 22:09	04:24 22:18	05:17 21:27	06:23 20:06	07:27 18:42	07:37 16:23	08:40 15:33
6	08:58 15:46	08:10 16:52	07:00 17:57	06:34 20:06	05:16 21:12	04:21 22:10	04:25 22:17	05:19 21:24	06:25 20:04	07:29 18:39	07:39 16:20	08:42 15:32
7	08:58 15:48	08:08 16:54	06:57 17:59	06:31 20:08	05:13 21:15	04:20 22:11	04:26 22:16	05:21 21:22	06:27 20:01	07:31 18:37	07:41 16:18	08:43 15:32
8	08:57 15:49	08:06 16:56	06:55 18:02	06:28 20:11	05:11 21:17	04:19 22:12	04:27 22:15	05:23 21:20	06:30 19:58	07:34 18:34	07:44 16:16	08:45 15:31
9	08:56 15:51	08:04 16:59	06:52 18:04	06:25 20:13	05:09 21:19	04:18 22:13	04:28 22:14	05:26 21:17	06:32 19:55	07:36 18:31	07:46 16:14	08:46 15:31
10	08:55 15:53	08:01 17:01	06:49 18:06	06:23 20:15	05:06 21:21	04:18 22:14	04:30 22:13	05:28 21:15	06:34 19:52	07:38 18:28	07:48 16:12	08:48 15:30
11	08:54 15:55	07:59 17:04	06:46 18:09	06:20 20:17	05:04 21:23	04:17 22:15	04:31 22:12	05:30 21:12	06:36 19:50	07:40 18:26	07:51 16:10	08:49 15:30
12	08:53 15:57	07:57 17:06	06:44 18:11	06:17 20:19	05:02 21:25	04:17 22:16	04:33 22:10	05:32 21:10	06:38 19:47	07:42 18:23	07:53 16:08	08:50 15:29
13	08:52 15:58	07:54 17:08	06:41 18:13	06:15 20:22	05:00 21:27	04:16 22:17	04:34 22:09	05:34 21:07	06:40 19:44	07:45 18:20	07:55 16:05	08:51 15:29
14	08:51 16:00	07:52 17:11	06:38 18:15	06:12 20:24	04:58 21:30	04:16 22:18	04:36 22:08	05:36 21:05	06:42 19:41	07:47 18:18	07:57 16:04	08:53 15:29
15	08:50 16:02	07:49 17:13	06:35 18:17	06:09 20:26	04:56 21:32	04:15 22:19	04:37 22:06	05:38 21:02	06:44 19:38	07:49 18:15	08:00 16:02	08:54 15:29
16	08:48 16:04	07:47 17:15	06:32 18:20	06:06 20:28	04:54 21:34	04:15 22:19	04:39 22:05	05:41 21:00	06:47 19:36	07:51 18:12	08:02 16:00	08:55 15:29
17	08:47 16:06	07:45 17:18	06:30 18:22	06:04 20:30	04:51 21:36	04:15 22:20	04:40 22:04	05:43 20:57	06:49 19:33	07:53 18:10	08:04 15:58	08:56 15:29
18	08:46 16:08	07:42 17:20	06:27 18:24	06:01 20:33	04:50 21:38	04:15 22:20	04:42 22:02	05:45 20:55	06:51 19:30	07:56 18:07	08:06 15:56	08:57 15:29
19	08:44 16:10	07:40 17:22	06:24 18:26	05:58 20:35	04:48 21:40	04:15 22:21	04:44 22:00	05:47 20:52	06:53 19:27	07:58 18:04	08:09 15:54	08:57 15:29
20	08:43 16:13	07:37 17:25	06:21 18:29	05:56 20:37	04:46 21:42	04:15 22:21	04:46 21:59	05:49 20:50	06:55 19:24	08:00 18:02	08:11 15:53	08:58 15:29
21	08:41 16:15	07:34 17:27	06:18 18:31	05:53 20:39	04:44 21:44	04:15 22:22	04:47 21:57	05:51 20:47	06:57 19:21	08:02 17:59	08:13 15:51	08:59 15:30
22	08:40 16:17	07:32 17:30	06:16 18:33	05:50 20:41	04:42 21:46	04:15 22:22	04:49 21:55	05:53 20:44	06:59 19:19	08:05 17:57	08:15 15:49	08:59 15:30
23	08:38 16:19	07:29 17:32	06:13 18:35	05:48 20:44	04:40 21:47	04:15 22:22	04:51 21:53	05:56 20:42	07:01 19:16	08:07 17:54	08:17 15:48	09:00 15:31
24	08:36 16:21	07:27 17:34	06:10 18:37	05:45 20:46	04:39 21:49	04:15 22:22	04:53 21:52	05:58 20:39	07:03 19:13	08:09 17:51	08:19 15:46	09:00 15:31
25	08:35 16:24	07:24 17:37	06:07 18:40	05:43 20:48	04:37 21:51	04:16 22:22	04:55 21:50	06:00 20:36	07:06 19:10	07:12 16:49	08:21 15:45	09:00 15:32
26	08:33 16:26	07:21 17:39	06:04 18:42	05:40 20:50	04:35 21:53	04:16 22:22	04:57 21:48	06:02 20:34	07:08 19:07	07:14 16:46	08:23 15:43	09:01 15:33
27	08:31 16:28	07:19 17:41	06:02 18:44	05:38 20:53	04:34 21:55	04:17 22:22	04:59 21:46	06:04 20:31	07:10 19:05	07:16 16:44	08:25 15:42	09:01 15:34
28	08:29 16:30	07:16 17:43	05:59 18:46	05:35 20:55	04:32 21:56	04:17 22:21	05:01 21:44	06:06 20:28	07:12 19:02	07:18 16:41	08:27 15:41	09:01 15:34
29	08:27 16:33		05:56 19:48	05:32 20:57	04:31 21:58	04:18 22:21	05:03 21:42	06:08 20:26	07:14 18:59	07:21 16:39	08:29 15:39	09:01 15:35
30	08:25 16:35		05:53 19:51	05:30 20:59	04:29 22:00	04:19 22:21	05:05 21:40	06:10 20:23	07:16 18:56	07:23 16:37	08:31 15:38	09:01 15:37
31	08:23 16:37		05:50 19:53		04:28 22:01		05:07 21:38	06:13 20:20		07:25 16:34		09:01 15:38
Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Zala iela 12 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (650)
Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:28 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
2	09:00 15:40	08:19 16:42	07:11 17:48	06:45 19:57	05:25 21:04	04:25 22:04	04:20 22:20	05:11 21:33	06:17 20:15	07:21 18:51	07:30 16:29	08:35 15:36
3	09:00 15:42	08:17 16:44	07:08 17:50	06:42 19:59	05:23 21:06	04:24 22:06	04:21 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:37 15:35
4	08:59 15:43	08:15 16:47	07:05 17:53	06:39 20:02	05:20 21:08	04:23 22:07	04:22 22:18	05:15 21:29	06:21 20:09	07:25 18:45	07:35 16:25	08:38 15:34
5	08:59 15:45	08:13 16:49	07:03 17:55	06:37 20:04	05:18 21:10	04:22 22:09	04:24 22:18	05:17 21:27	06:23 20:06	07:27 18:42	07:37 16:23	08:40 15:33
6	08:58 15:46	08:10 16:52	07:00 17:57	06:34 20:06	05:16 21:12	04:21 22:10	04:25 22:17	05:19 21:24	06:25 20:04	07:29 18:39	07:39 16:20	08:42 15:32
7	08:58 15:48	08:08 16:54	06:57 17:59	06:31 20:08	05:13 21:15	04:20 22:11	04:26 22:16	05:21 21:22	06:27 20:01	07:31 18:37	07:41 16:18	08:43 15:32
8	08:57 15:49	08:06 16:56	06:55 18:02	06:28 20:11	05:11 21:17	04:19 22:12	04:27 22:15	05:23 21:20	06:30 19:58	07:34 18:34	07:44 16:16	08:45 15:31
9	08:56 15:51	08:04 16:59	06:52 18:04	06:25 20:13	05:09 21:19	04:18 22:13	04:28 22:14	05:26 21:17	06:32 19:55	07:36 18:31	07:46 16:14	08:46 15:31
10	08:55 15:53	08:01 17:01	06:49 18:06	06:23 20:15	05:06 21:21	04:18 22:14	04:30 22:13	05:28 21:15	06:34 19:52	07:38 18:28	07:48 16:12	08:48 15:30
11	08:54 15:55	07:59 17:04	06:46 18:09	06:20 20:17	05:04 21:23	04:17 22:15	04:31 22:12	05:30 21:12	06:36 19:50	07:40 18:26	07:51 16:10	08:49 15:30
12	08:53 15:57	07:57 17:06	06:44 18:11	06:17 20:19	05:02 21:25	04:17 22:16	04:33 22:10	05:32 21:10	06:38 19:47	07:42 18:23	07:53 16:08	08:50 15:29
13	08:52 15:58	07:54 17:08	06:41 18:13	06:15 20:22	05:00 21:27	04:16 22:17	04:34 22:09	05:34 21:07	06:40 19:44	07:45 18:20	07:55 16:05	08:51 15:29
14	08:51 16:00	07:52 17:11	06:38 18:15	06:12 20:24	04:58 21:30	04:16 22:18	04:36 22:08	05:36 21:05	06:42 19:41	07:47 18:18	07:57 16:04	08:53 15:29
15	08:50 16:02	07:49 17:13	06:35 18:17	06:09 20:26	04:56 21:32	04:15 22:19	04:37 22:06	05:38 21:02	06:44 19:38	07:49 18:15	08:00 16:02	08:54 15:29
16	08:48 16:04	07:47 17:15	06:32 18:20	06:06 20:28	04:54 21:34	04:15 22:19	04:39 22:05	05:41 21:00	06:47 19:36	07:51 18:12	08:02 16:00	08:55 15:29
17	08:47 16:06	07:45 17:18	06:30 18:22	06:04 20:30	04:51 21:36	04:15 22:20	04:40 22:04	05:43 20:57	06:49 19:33	07:53 18:10	08:04 15:58	08:56 15:29
18	08:46 16:08	07:42 17:20	06:27 18:24	06:01 20:33	04:50 21:38	04:15 22:20	04:42 22:02	05:45 20:55	06:51 19:30	07:56 18:07	08:06 15:56	08:57 15:29
19	08:44 16:10	07:40 17:22	06:24 18:26	05:58 20:35	04:48 21:40	04:15 22:21	04:44 22:00	05:47 20:52	06:53 19:27	07:58 18:04	08:09 15:54	08:57 15:29
20	08:43 16:13	07:37 17:25	06:21 18:29	05:56 20:37	04:46 21:42	04:15 22:21	04:46 21:59	05:49 20:50	06:55 19:24	08:00 18:02	08:11 15:53	08:58 15:29
21	08:41 16:15	07:34 17:27	06:18 18:31	05:53 20:39	04:44 21:44	04:15 22:22	04:47 21:57	05:51 20:47	06:57 19:21	08:02 17:59	08:13 15:51	08:59 15:30
22	08:40 16:17	07:32 17:30	06:16 18:33	05:50 20:41	04:42 21:46	04:15 22:22	04:49 21:55	05:53 20:44	06:59 19:19	08:05 17:57	08:15 15:49	08:59 15:30
23	08:38 16:19	07:29 17:32	06:13 18:35	05:48 20:44	04:40 21:47	04:15 22:22	04:51 21:53	05:56 20:42	07:01 19:16	08:07 17:54	08:17 15:48	09:00 15:31
24	08:36 16:21	07:27 17:34	06:10 18:37	05:45 20:46	04:39 21:49	04:15 22:22	04:53 21:52	05:58 20:39	07:03 19:13	08:09 17:51	08:19 15:46	09:00 15:31
25	08:35 16:24	07:24 17:37	06:07 18:40	05:43 20:48	04:37 21:51	04:16 22:22	04:55 21:50	06:00 20:36	07:06 19:10	07:12 16:49	08:21 15:45	09:00 15:32
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27	08:31 16:28	07:19 17:41	06:02 18:44	05:38 20:53	04:34 21:55	04:17 22:22	04:59 21:46	06:04 20:31	07:10 19:05	07:16 16:44	08:25 15:42	09:01 15:34
28	08:29 16:30	07:16 17:43	05:59 18:46	05:35 20:55	04:32 21:56	04:17 22:21	05:01 21:44	06:06 20:28	07:12 19:02	07:18 16:41	08:27 15:41	09:01 15:34
29	08:27 16:33		05:56 19:48	05:32 20:57	04:31 21:58	04:18 22:21	05:03 21:42	06:08 20:26	07:14 18:59	07:21 16:39	08:29 15:39	09:01 15:35
30	08:25 16:35		05:53 19:51	05:30 20:59	04:29 22:00	04:19 22:21	05:05 21:40	06:10 20:23	07:16 18:56	07:23 16:37	08:31 15:38	09:01 15:37
31	08:23 16:37		05:50 19:53		04:28 22:01		05:07 21:38	06:13 20:20		07:25 16:34		09:01 15:38
Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Zala iela 14 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (677)
 Sunshine probability S (Average daily sunshine hours) []

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
 0.80 1.82 4.75 6.09 9.67 10.05 8.16 7.72 5.94 2.93 0.63 0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:28 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
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3	09:00 15:42	08:17 16:44	07:08 17:50	06:42 19:59	05:23 21:06	04:24 22:06	04:21 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:37 15:35
4	08:59 15:43	08:15 16:47	07:05 17:53	06:39 20:02	05:20 21:08	04:23 22:07	04:22 22:18	05:15 21:29	06:21 20:09	07:25 18:45	07:35 16:25	08:38 15:34
5	08:59 15:45	08:13 16:49	07:03 17:55	06:37 20:04	05:18 21:10	04:22 22:09	04:24 22:18	05:17 21:27	06:23 20:06	07:27 18:42	07:37 16:23	08:40 15:33
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31	08:23 16:37		05:50 19:53		04:28 22:01		05:07 21:38	06:13 20:20		07:25 16:34		09:01 15:38
Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Last time (hh:mm) with flicker	(WTG causing flicker last time)
	Minutes with flicker		

Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Zala iela 16 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (669)
 Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:28 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
2	09:00 15:40	08:19 16:42	07:11 17:48	06:45 19:57	05:25 21:04	04:25 22:04	04:20 22:20	05:11 21:33	06:17 20:15	07:21 18:51	07:30 16:29	08:35 15:36
3	09:00 15:42	08:17 16:44	07:08 17:50	06:42 19:59	05:23 21:06	04:24 22:06	04:21 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:37 15:35
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5	08:59 15:45	08:13 16:49	07:03 17:55	06:37 20:04	05:18 21:10	04:22 22:09	04:24 22:18	05:17 21:27	06:23 20:06	07:27 18:42	07:37 16:23	08:40 15:33
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31	08:23 16:37		05:50 19:53		04:28 22:01		05:07 21:38	06:13 20:20		07:25 16:34		09:01 15:38
Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Zala iela 1B - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (655)
 Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:28 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
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23	08:38 16:19	07:29 17:32	06:13 18:35	05:48 20:44	04:40 21:47	04:15 22:22	04:51 21:53	05:56 20:42	07:01 19:16	08:07 17:54	08:17 15:48	09:00 15:31
24	08:36 16:21	07:27 17:34	06:10 18:37	05:45 20:46	04:39 21:49	04:15 22:22	04:53 21:52	05:58 20:39	07:03 19:13	08:09 17:51	08:19 15:46	09:00 15:31
25	08:35 16:24	07:24 17:37	06:07 18:40	05:43 20:48	04:37 21:51	04:16 22:22	04:55 21:50	06:00 20:36	07:06 19:10	07:12 16:49	08:21 15:45	09:00 15:32
26	08:33 16:26	07:21 17:39	06:04 18:42	05:40 20:50	04:35 21:53	04:16 22:22	04:57 21:48	06:02 20:34	07:08 19:07	07:14 16:46	08:23 15:43	09:01 15:33
27	08:31 16:28	07:19 17:41	06:02 18:44	05:38 20:53	04:34 21:55	04:17 22:22	04:59 21:46	06:04 20:31	07:10 19:05	07:16 16:44	08:25 15:42	09:01 15:34
28	08:29 16:30	07:16 17:43	05:59 18:46	05:35 20:55	04:32 21:56	04:17 22:21	05:01 21:44	06:06 20:28	07:12 19:02	07:18 16:41	08:27 15:41	09:01 15:34
29	08:27 16:33		06:56 19:48	05:32 20:57	04:31 21:58	04:18 22:21	05:03 21:42	06:08 20:26	07:14 18:59	07:21 16:39	08:29 15:39	09:01 15:35
30	08:25 16:35		06:53 19:51	05:30 20:59	04:29 22:00	04:19 22:21	05:05 21:40	06:10 20:23	07:16 18:56	07:23 16:37	08:31 15:38	09:01 15:37
31	08:23 16:37		06:50 19:53		04:28 22:01		05:07 21:38	06:13 20:20		07:25 16:34		09:01 15:38
Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Zala iela 3A - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (644)
 Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:28 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
2	09:00 15:40	08:19 16:42	07:11 17:48	06:45 19:57	05:25 21:04	04:25 22:04	04:20 22:20	05:11 21:33	06:17 20:15	07:21 18:51	07:30 16:29	08:35 15:36
3	09:00 15:42	08:17 16:44	07:08 17:50	06:42 19:59	05:23 21:06	04:24 22:06	04:21 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:37 15:35
4	08:59 15:43	08:15 16:47	07:05 17:53	06:39 20:02	05:20 21:08	04:23 22:07	04:22 22:18	05:15 21:29	06:21 20:09	07:25 18:45	07:35 16:25	08:38 15:34
5	08:59 15:45	08:13 16:49	07:03 17:55	06:37 20:04	05:18 21:10	04:22 22:09	04:24 22:18	05:17 21:27	06:23 20:06	07:27 18:42	07:37 16:23	08:40 15:33
6	08:58 15:46	08:10 16:52	07:00 17:57	06:34 20:06	05:16 21:12	04:21 22:10	04:25 22:17	05:19 21:24	06:25 20:04	07:29 18:39	07:39 16:20	08:42 15:32
7	08:58 15:48	08:08 16:54	06:57 17:59	06:31 20:08	05:13 21:15	04:20 22:11	04:26 22:16	05:21 21:22	06:27 20:01	07:31 18:37	07:41 16:18	08:43 15:32
8	08:57 15:49	08:06 16:56	06:55 18:02	06:28 20:11	05:11 21:17	04:19 22:12	04:27 22:15	05:23 21:20	06:30 19:58	07:34 18:34	07:44 16:16	08:45 15:31
9	08:56 15:51	08:04 16:59	06:52 18:04	06:25 20:13	05:09 21:19	04:18 22:13	04:28 22:14	05:26 21:17	06:32 19:55	07:36 18:31	07:46 16:14	08:46 15:31
10	08:55 15:53	08:01 17:01	06:49 18:06	06:23 20:15	05:06 21:21	04:18 22:14	04:30 22:13	05:28 21:15	06:34 19:52	07:38 18:28	07:48 16:12	08:48 15:30
11	08:54 15:55	07:59 17:04	06:46 18:09	06:20 20:17	05:04 21:23	04:17 22:15	04:31 22:12	05:30 21:12	06:36 19:50	07:40 18:26	07:51 16:10	08:49 15:30
12	08:53 15:57	07:57 17:06	06:44 18:11	06:17 20:19	05:02 21:25	04:17 22:16	04:33 22:10	05:32 21:10	06:38 19:47	07:42 18:23	07:53 16:08	08:50 15:29
13	08:52 15:58	07:54 17:08	06:41 18:13	06:15 20:22	05:00 21:27	04:16 22:17	04:34 22:09	05:34 21:07	06:40 19:44	07:45 18:20	07:55 16:05	08:51 15:29
14	08:51 16:00	07:52 17:11	06:38 18:15	06:12 20:24	04:58 21:30	04:16 22:18	04:36 22:08	05:36 21:05	06:42 19:41	07:47 18:18	07:57 16:04	08:53 15:29
15	08:50 16:02	07:49 17:13	06:35 18:17	06:09 20:26	04:56 21:32	04:15 22:19	04:37 22:06	05:38 21:02	06:44 19:38	07:49 18:15	08:00 16:02	08:54 15:29
16	08:48 16:04	07:47 17:15	06:32 18:20	06:06 20:28	04:54 21:34	04:15 22:19	04:39 22:05	05:41 21:00	06:47 19:36	07:51 18:12	08:02 16:00	08:55 15:29
17	08:47 16:06	07:45 17:18	06:30 18:22	06:04 20:30	04:51 21:36	04:15 22:20	04:40 22:04	05:43 20:57	06:49 19:33	07:53 18:10	08:04 15:58	08:56 15:29
18	08:46 16:08	07:42 17:20	06:27 18:24	06:01 20:33	04:50 21:38	04:15 22:20	04:42 22:02	05:45 20:55	06:51 19:30	07:56 18:07	08:06 15:56	08:57 15:29
19	08:44 16:10	07:40 17:22	06:24 18:26	05:58 20:35	04:48 21:40	04:15 22:21	04:44 22:00	05:47 20:52	06:53 19:27	07:58 18:04	08:09 15:54	08:57 15:29
20	08:43 16:13	07:37 17:25	06:21 18:29	05:56 20:37	04:46 21:42	04:15 22:21	04:46 21:59	05:49 20:50	06:55 19:24	08:00 18:02	08:11 15:53	08:58 15:29
21	08:41 16:15	07:34 17:27	06:18 18:31	05:53 20:39	04:44 21:44	04:15 22:22	04:47 21:57	05:51 20:47	06:57 19:21	08:02 17:59	08:13 15:51	08:59 15:30
22	08:40 16:17	07:32 17:30	06:16 18:33	05:50 20:41	04:42 21:46	04:15 22:22	04:49 21:55	05:53 20:44	06:59 19:19	08:05 17:57	08:15 15:49	08:59 15:30
23	08:38 16:19	07:29 17:32	06:13 18:35	05:48 20:44	04:40 21:47	04:15 22:22	04:51 21:53	05:56 20:42	07:01 19:16	08:07 17:54	08:17 15:48	09:00 15:31
24	08:36 16:21	07:27 17:34	06:10 18:37	05:45 20:46	04:39 21:49	04:15 22:22	04:53 21:52	05:58 20:39	07:03 19:13	08:09 17:51	08:19 15:46	09:00 15:31
25	08:35 16:24	07:24 17:37	06:07 18:40	05:43 20:48	04:37 21:51	04:16 22:22	04:55 21:50	06:00 20:36	07:06 19:10	07:12 16:49	08:21 15:45	09:00 15:32
26	08:33 16:26	07:21 17:39	06:04 18:42	05:40 20:50	04:35 21:53	04:16 22:22	04:57 21:48	06:02 20:34	07:08 19:07	07:14 16:46	08:23 15:43	09:01 15:33
27	08:31 16:28	07:19 17:41	06:02 18:44	05:38 20:53	04:34 21:55	04:17 22:22	04:59 21:46	06:04 20:31	07:10 19:05	07:16 16:44	08:25 15:42	09:01 15:34
28	08:29 16:30	07:16 17:43	05:59 18:46	05:35 20:55	04:32 21:56	04:17 22:21	05:01 21:44	06:06 20:28	07:12 19:02	07:18 16:41	08:27 15:41	09:01 15:34
29	08:27 16:33		06:56 19:48	05:32 20:57	04:31 21:58	04:18 22:21	05:03 21:42	06:08 20:26	07:14 18:59	07:21 16:39	08:29 15:39	09:01 15:35
30	08:25 16:35		06:53 19:51	05:30 20:59	04:29 22:00	04:19 22:21	05:05 21:40	06:10 20:23	07:16 18:56	07:23 16:37	08:31 15:38	09:01 15:37
31	08:23 16:37		06:50 19:53		04:28 22:01		05:07 21:38	06:13 20:20		07:25 16:34		09:01 15:38
Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Zala iela 3B - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (670)
Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:28 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
2	09:00 15:40	08:19 16:42	07:11 17:48	06:45 19:57	05:25 21:04	04:25 22:04	04:20 22:20	05:11 21:33	06:17 20:15	07:21 18:51	07:30 16:29	08:35 15:36
3	09:00 15:42	08:17 16:44	07:08 17:50	06:42 19:59	05:23 21:06	04:24 22:06	04:21 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:37 15:35
4	08:59 15:43	08:15 16:47	07:05 17:53	06:39 20:02	05:20 21:08	04:23 22:07	04:22 22:18	05:15 21:29	06:21 20:09	07:25 18:45	07:35 16:25	08:38 15:34
5	08:59 15:45	08:13 16:49	07:03 17:55	06:37 20:04	05:18 21:10	04:22 22:09	04:24 22:18	05:17 21:27	06:23 20:06	07:27 18:42	07:37 16:23	08:40 15:33
6	08:58 15:46	08:10 16:52	07:00 17:57	06:34 20:06	05:16 21:12	04:21 22:10	04:25 22:17	05:19 21:24	06:25 20:04	07:29 18:39	07:39 16:20	08:42 15:32
7	08:58 15:48	08:08 16:54	06:57 17:59	06:31 20:08	05:13 21:15	04:20 22:11	04:26 22:16	05:21 21:22	06:27 20:01	07:31 18:37	07:41 16:18	08:43 15:32
8	08:57 15:49	08:06 16:56	06:55 18:02	06:28 20:11	05:11 21:17	04:19 22:12	04:27 22:15	05:23 21:20	06:30 19:58	07:34 18:34	07:44 16:16	08:45 15:31
9	08:56 15:51	08:04 16:59	06:52 18:04	06:25 20:13	05:09 21:19	04:18 22:13	04:28 22:14	05:26 21:17	06:32 19:55	07:36 18:31	07:46 16:14	08:46 15:31
10	08:55 15:53	08:01 17:01	06:49 18:06	06:23 20:15	05:06 21:21	04:18 22:14	04:30 22:13	05:28 21:15	06:34 19:52	07:38 18:28	07:48 16:12	08:48 15:30
11	08:54 15:55	07:59 17:04	06:46 18:09	06:20 20:17	05:04 21:23	04:17 22:15	04:31 22:12	05:30 21:12	06:36 19:50	07:40 18:26	07:51 16:10	08:49 15:30
12	08:53 15:57	07:57 17:06	06:44 18:11	06:17 20:19	05:02 21:25	04:17 22:16	04:33 22:10	05:32 21:10	06:38 19:47	07:42 18:23	07:53 16:08	08:50 15:29
13	08:52 15:58	07:54 17:08	06:41 18:13	06:15 20:22	05:00 21:27	04:16 22:17	04:34 22:09	05:34 21:07	06:40 19:44	07:45 18:20	07:55 16:05	08:51 15:29
14	08:51 16:00	07:52 17:11	06:38 18:15	06:12 20:24	04:58 21:30	04:16 22:18	04:36 22:08	05:36 21:05	06:42 19:41	07:47 18:18	07:57 16:04	08:53 15:29
15	08:50 16:02	07:49 17:13	06:35 18:17	06:09 20:26	04:56 21:32	04:15 22:19	04:37 22:06	05:38 21:02	06:44 19:38	07:49 18:15	08:00 16:02	08:54 15:29
16	08:48 16:04	07:47 17:15	06:32 18:20	06:06 20:28	04:54 21:34	04:15 22:19	04:39 22:05	05:41 21:00	06:47 19:36	07:51 18:12	08:02 16:00	08:55 15:29
17	08:47 16:06	07:45 17:18	06:30 18:22	06:04 20:30	04:51 21:36	04:15 22:20	04:40 22:04	05:43 20:57	06:49 19:33	07:53 18:10	08:04 15:58	08:56 15:29
18	08:46 16:08	07:42 17:20	06:27 18:24	06:01 20:33	04:50 21:38	04:15 22:20	04:42 22:02	05:45 20:55	06:51 19:30	07:56 18:07	08:06 15:56	08:57 15:29
19	08:44 16:10	07:40 17:22	06:24 18:26	05:58 20:35	04:48 21:40	04:15 22:21	04:44 22:00	05:47 20:52	06:53 19:27	07:58 18:04	08:09 15:54	08:57 15:29
20	08:43 16:13	07:37 17:25	06:21 18:29	05:56 20:37	04:46 21:42	04:15 22:21	04:46 21:59	05:49 20:50	06:55 19:24	08:00 18:02	08:11 15:53	08:58 15:29
21	08:41 16:15	07:34 17:27	06:18 18:31	05:53 20:39	04:44 21:44	04:15 22:22	04:47 21:57	05:51 20:47	06:57 19:21	08:02 17:59	08:13 15:51	08:59 15:30
22	08:40 16:17	07:32 17:30	06:16 18:33	05:50 20:41	04:42 21:46	04:15 22:22	04:49 21:55	05:53 20:44	06:59 19:19	08:05 17:57	08:15 15:49	08:59 15:30
23	08:38 16:19	07:29 17:32	06:13 18:35	05:48 20:44	04:40 21:47	04:15 22:22	04:51 21:53	05:56 20:42	07:01 19:16	08:07 17:54	08:17 15:48	09:00 15:31
24	08:36 16:21	07:27 17:34	06:10 18:37	05:45 20:46	04:39 21:49	04:15 22:22	04:53 21:52	05:58 20:39	07:03 19:13	08:09 17:51	08:19 15:46	09:00 15:31
25	08:35 16:24	07:24 17:37	06:07 18:40	05:43 20:48	04:37 21:51	04:16 22:22	04:55 21:50	06:00 20:36	07:06 19:10	07:12 16:49	08:21 15:45	09:00 15:32
26	08:33 16:26	07:21 17:39	06:04 18:42	05:40 20:50	04:35 21:53	04:16 22:22	04:57 21:48	06:02 20:34	07:08 19:07	07:14 16:46	08:23 15:43	09:01 15:33
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28	08:29 16:30	07:16 17:43	05:59 18:46	05:35 20:55	04:32 21:56	04:17 22:21	05:01 21:44	06:06 20:28	07:12 19:02	07:18 16:41	08:27 15:41	09:01 15:34
29	08:27 16:33		05:56 19:48	05:32 20:57	04:31 21:58	04:18 22:21	05:03 21:42	06:08 20:26	07:14 18:59	07:21 16:39	08:29 15:39	09:01 15:35
30	08:25 16:35		05:53 19:51	05:30 20:59	04:29 22:00	04:19 22:21	05:05 21:40	06:10 20:23	07:16 18:56	07:23 16:37	08:31 15:38	09:01 15:37
31	08:23 16:37		05:50 19:53		04:28 22:01		05:07 21:38	06:13 20:20		07:25 16:34		09:01 15:38
Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Zala iela 5 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (673)
 Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:28 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
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5	08:59 15:45	08:13 16:49	07:03 17:55	06:37 20:04	05:18 21:10	04:22 22:09	04:24 22:18	05:17 21:27	06:23 20:06	07:27 18:42	07:37 16:23	08:40 15:33
6	08:58 15:46	08:10 16:52	07:00 17:57	06:34 20:06	05:16 21:12	04:21 22:10	04:25 22:17	05:19 21:24	06:25 20:04	07:29 18:39	07:39 16:20	08:42 15:32
7	08:58 15:48	08:08 16:54	06:57 17:59	06:31 20:08	05:13 21:15	04:20 22:11	04:26 22:16	05:21 21:22	06:27 20:01	07:31 18:37	07:41 16:18	08:43 15:32
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Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Zala iela 7 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (654)
 Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:28 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
2	09:00 15:40	08:19 16:42	07:11 17:48	06:45 19:57	05:25 21:04	04:25 22:04	04:20 22:20	05:11 21:33	06:17 20:15	07:21 18:51	07:30 16:29	08:35 15:36
3	09:00 15:42	08:17 16:44	07:08 17:50	06:42 19:59	05:23 21:06	04:24 22:06	04:21 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:37 15:35
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31	08:23 16:37		05:50 19:53		04:28 22:01		05:07 21:38	06:13 20:20		07:25 16:34		09:01 15:38
Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Zala iela 8 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (659)
 Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:28 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
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26	08:33 16:26	07:21 17:39	06:04 18:42	05:40 20:50	04:35 21:53	04:16 22:22	04:57 21:48	06:02 20:34	07:08 19:07	07:14 16:46	08:23 15:43	09:01 15:33
27	08:31 16:28	07:19 17:41	06:02 18:44	05:38 20:53	04:34 21:55	04:17 22:22	04:59 21:46	06:04 20:31	07:10 19:05	07:16 16:44	08:25 15:42	09:01 15:34
28	08:29 16:30	07:16 17:43	05:59 18:46	05:35 20:55	04:32 21:56	04:17 22:21	05:01 21:44	06:06 20:28	07:12 19:02	07:18 16:41	08:27 15:41	09:01 15:34
29	08:27 16:33		05:56 19:48	05:32 20:57	04:31 21:58	04:18 22:21	05:03 21:42	06:08 20:26	07:14 18:59	07:21 16:39	08:29 15:39	09:01 15:35
30	08:25 16:35		05:53 19:51	05:30 20:59	04:29 22:00	04:19 22:21	05:05 21:40	06:10 20:23	07:16 18:56	07:23 16:37	08:31 15:38	09:01 15:37
31	08:23 16:37		05:50 19:53		04:28 22:01		05:07 21:38	06:13 20:20		07:25 16:34		09:01 15:38
Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa

Assumptions for shadow calculations

Shadow receptor: Zeltini - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (476)
Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January			February			March			April	May	June
1	09:00		14:38 (4)	08:21	15:41 (14)	07:13		06:48	05:27	04:27		
	15:39	15	14:53 (4)	16:40	15	15:56 (14)	17:46	19:55	21:01	22:02		
2	09:00		14:37 (4)	08:19	15:43 (14)	07:11		06:45	05:25	04:25		
	15:40	17	14:54 (4)	16:42	13	15:56 (14)	17:48	19:57	21:03	22:04		
3	09:00		14:38 (4)	08:17	15:45 (14)	07:08		06:42	05:23	04:24		
	15:42	18	14:56 (4)	16:44	10	15:55 (14)	17:50	19:59	21:06	22:05		
4	08:59		14:38 (4)	08:15	15:48 (14)	07:05		06:39	05:20	04:23		
	15:43	20	14:58 (4)	16:47	3	15:51 (14)	17:53	20:01	21:08	22:07		
5	08:59		14:39 (4)	08:12		07:03		06:36	05:18	04:22		
	15:45	20	14:59 (4)	16:49		17:55		20:04	21:10	22:08		
6	08:58		14:39 (4)	08:10		07:00		06:34	05:15	04:21		
	15:46	22	15:01 (4)	16:52		17:57		20:06	21:12	22:09		
7	08:57		14:39 (4)	08:08		06:57		06:31	05:13	04:20		
	15:48	22	15:01 (4)	16:54		17:59		20:08	21:14	22:11		
8	08:57		14:40 (4)	08:06	16:18 (2)	06:54		06:28	05:11	04:19		
	15:49	22	15:02 (4)	16:56	4	16:22 (2)	18:02	20:10	21:16	22:12		
9	08:56		14:40 (4)	08:03	16:17 (2)	06:52		06:25	05:09	04:18		
	15:51	23	15:03 (4)	16:59	8	16:25 (2)	18:04	20:12	21:19	22:13		
10	08:55		14:41 (4)	08:01	16:15 (2)	06:49		06:23	05:06	04:18		
	15:53	22	15:03 (4)	17:01	12	16:27 (2)	18:06	20:15	21:21	22:14		
11	08:54		14:40 (4)	07:59	16:14 (2)	06:46		06:20	05:04	04:17		
	15:55	23	15:03 (4)	17:03	16	16:30 (2)	18:08	20:17	21:23	22:15		
12	08:53		14:41 (4)	07:56	16:13 (2)	06:43		06:17	05:02	04:17		
	15:57	23	15:04 (4)	17:06	19	16:32 (2)	18:11	20:19	21:25	22:16		
13	08:52		14:41 (4)	07:54	16:13 (2)	06:41		06:14	05:00	04:16		
	15:58	23	15:04 (4)	17:08	22	16:35 (2)	18:13	20:21	21:27	22:17		
14	08:51		14:42 (4)	07:52	16:12 (2)	06:38		06:12	04:58	04:16		
	16:00	22	15:04 (4)	17:11	25	16:37 (2)	18:15	20:24	21:29	22:18		
15	08:49		14:42 (4)	07:49	16:11 (2)	06:35	17:46 (1)	06:09	04:56	04:15		
	16:02	22	15:04 (4)	17:13	26	16:37 (2)	18:17	2	17:48 (1)	20:26	21:31	22:18
16	08:48		14:44 (4)	07:47	16:12 (2)	06:32	17:45 (1)	06:06	04:53	04:15		
	16:04	21	15:05 (4)	17:15	28	16:43 (3)	18:20	5	17:50 (1)	20:28	21:33	22:19
17	08:47		14:44 (4)	07:44	16:12 (2)	06:29	17:45 (1)	06:04	04:51	04:15		
	16:06	21	15:05 (4)	17:18	30	16:45 (3)	18:22	8	17:53 (1)	20:30	21:35	22:20
18	08:45		14:44 (4)	07:42	16:12 (2)	06:27	17:45 (1)	06:01	04:50	04:15		
	16:08	20	15:04 (4)	17:20	33	16:48 (3)	18:24	10	17:55 (1)	20:32	21:37	22:20
19	08:44		14:45 (4)	07:39	16:12 (2)	06:24	17:44 (1)	05:58	04:48	04:15		
	16:10	19	15:04 (4)	17:22	36	16:51 (3)	18:26	13	17:57 (1)	20:35	21:39	22:21
20	08:42		14:47 (4)	07:37	16:12 (2)	06:21	17:45 (1)	05:56	04:46	04:15		
	16:13	17	15:04 (4)	17:25	37	16:53 (3)	18:28	14	17:59 (1)	20:37	21:41	22:21
21	08:41		14:48 (4)	07:34	16:13 (2)	06:18	17:45 (1)	05:53	04:44	04:15		
	16:15	16	15:04 (4)	17:27	37	16:55 (3)	18:31	12	17:57 (1)	20:39	21:43	22:21
22	08:39		14:50 (4)	07:32	16:15 (2)	06:16	17:47 (1)	05:50	04:42	04:15		
	16:17	13	15:03 (4)	17:29	35	16:56 (3)	18:33	8	17:55 (1)	20:41	21:45	22:21
23	08:38		14:52 (4)	07:29	16:16 (2)	06:13		05:48	04:40	04:15		
	16:19	9	15:01 (4)	17:32	29	16:54 (3)	18:35		20:43	21:47	22:22	
24	08:36		15:39 (14)	07:26	16:17 (2)	06:10		05:45	04:39	04:15		
	16:21	3	15:42 (14)	17:34	22	16:52 (3)	18:37		20:46	21:49	22:22	
25	08:34		15:39 (14)	07:24	16:22 (2)	06:07		05:43	04:37	04:16		
	16:24	6	15:45 (14)	17:36	5	16:27 (2)	18:39		20:48	21:51	22:22	
26	08:32		15:39 (14)	07:21		06:04		05:40	04:35	04:16		
	16:26	9	15:48 (14)	17:39		18:42		20:50	21:53	22:21		
27	08:31		15:39 (14)	07:19		06:02		05:37	04:34	04:17		
	16:28	11	15:50 (14)	17:41		18:44		20:52	21:54	22:21		
28	08:29		15:39 (14)	07:16		05:59		05:35	04:32	04:17		
	16:30	13	15:52 (14)	17:43		18:46		20:55	21:56	22:21		
29	08:27		15:40 (14)			06:56		05:32	04:31	04:18		
	16:33	15	15:55 (14)			19:48		20:57	21:58	22:21		
30	08:25		15:40 (14)			06:53		05:30	04:29	04:19		
	16:35	17	15:57 (14)			19:50		20:59	21:59	22:20		
31	08:23		15:41 (14)			06:50			04:28			
	16:37	16	15:57 (14)			19:53			22:01			
Potential sun hours	227			262		365		429	515	539		
Total, worst case		540		465		72						
Sun reduction		0.11		0.19		0.40						
Oper. time red.		1.00		1.00		1.00						
Wind dir. red.		1.00		1.00		1.00						
Total reduction		0.11		0.19		0.40						
Total, real		59		90		29						

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Zeltini - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (476)
Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	July	August	September	October	November	December
1	04:20	05:09	06:15	07:18	07:27	08:33
	22:20	21:35	20:17	18:53	16:32	14:23 (4)
2	04:21	05:11	06:17	07:20	07:30	08:35
	22:19	21:33	20:14	18:50	16:29	14:23 (4)
3	04:21	05:13	06:19	07:23	07:32	08:36
	22:19	21:31	20:12	18:48	16:27	14:23 (4)
4	04:22	05:15	06:21	07:25	07:34	08:38
	22:18	21:28	20:09	18:45	16:25	14:24 (4)
5	04:24	05:17	06:23	07:27	07:37	08:40
	22:17	21:26	20:06	18:42	16:23	14:24 (4)
6	04:25	05:19	06:25	07:29	07:39	08:41
	22:16	21:24	20:03	18:39	16:20	14:25 (4)
7	04:26	05:21	06:27	07:31	07:41	08:43
	22:16	21:22	20:01	18:37	16:18	14:26 (4)
8	04:27	05:23	06:29	07:33	07:43	08:44
	22:15	21:19	19:58	18:34	16:16	14:27 (4)
9	04:28	05:26	06:32	07:36	07:46	08:46
	22:14	21:17	19:55	18:31	16:14	14:26 (4)
10	04:30	05:28	06:34	07:38	07:48	08:47
	22:12	21:14	19:52	18:28	16:12	14:28 (4)
11	04:31	05:30	06:36	07:40	07:50	08:49
	22:11	21:12	19:49	18:26	16:10	14:28 (4)
12	04:33	05:32	06:38	07:42	07:53	08:50
	22:10	21:10	19:47	18:23	16:07	14:29 (4)
13	04:34	05:34	06:40	07:44	07:55	08:51
	22:09	21:07	19:44	18:20	16:05	14:29 (4)
14	04:36	05:36	06:42	07:47	07:57	08:52
	22:08	21:05	19:41	18:18	16:03	14:29 (4)
15	04:37	05:38	06:44	07:49	07:59	08:53
	22:06	21:02	19:38	18:15	16:02	14:29 (4)
16	04:39	05:40	06:46	07:51	08:02	08:54
	22:05	21:00	19:35	18:12	16:00	14:30 (4)
17	04:40	05:43	06:48	07:53	08:04	08:55
	22:03	20:57	19:33	18:10	16:51 (2)	14:30 (12)
18	04:42	05:45	06:51	07:55	08:06	08:56
	22:02	20:54	19:30	18:07	16:49 (2)	14:31 (12)
19	04:44	05:47	06:53	07:58	08:08	08:57
	22:00	20:52	19:27	18:04	16:46 (2)	14:31 (12)
20	04:46	05:49	06:55	08:00	08:10	08:58
	21:58	20:49	19:24	18:02	16:44 (2)	14:32 (12)
21	04:47	05:51	06:57	08:02	08:13	08:58
	21:57	20:47	19:21	18:33 (1)	16:42 (2)	14:32 (12)
22	04:49	05:53	06:59	08:04	08:15	08:59
	21:55	20:44	19:18	18:31 (1)	16:43 (2)	14:33 (12)
23	04:51	05:55	07:01	08:07	08:17	09:00
	21:53	20:41	19:16	18:42 (1)	16:42 (2)	14:33 (12)
24	04:53	05:58	07:03	08:09	08:19	09:00
	21:51	20:39	19:13	18:43 (1)	16:42 (2)	14:33 (12)
25	04:55	06:00	07:05	08:11	08:21	09:00
	21:49	20:36	19:10	18:27 (1)	16:42 (2)	14:35 (12)
26	04:57	06:02	07:08	08:14	08:23	09:00
	21:47	20:33	19:07	18:39 (1)	16:41 (2)	14:35 (12)
27	04:59	06:04	07:10	08:16	08:25	09:01
	21:45	20:31	19:04	18:36 (1)	16:40 (2)	14:36 (4)
28	05:01	06:06	07:12	08:18	08:27	09:01
	21:43	20:28	19:02	18:33 (1)	16:39 (2)	14:36 (12)
29	05:03	06:08	07:14	08:20	08:29	09:01
	21:41	20:25	18:59	18:30 (1)	16:38 (2)	14:36 (4)
30	05:05	06:10	07:16	08:23	08:31	09:01
	21:39	20:23	18:56	18:27 (1)	16:37 (2)	14:37 (4)
31	05:07	06:13		08:25	08:33	09:00
	21:37	20:20		18:25 (1)	16:35 (2)	14:37 (12)
Potential sun hours	538	474	386	321	241	207
Total, worst case			75	407	379	452
Sun reduction			0.46	0.28	0.08	0.06
Oper. time red.			1.00	1.00	1.00	1.00
Wind dir. red.			1.00	1.00	1.00	1.00
Total reduction			0.46	0.28	0.08	0.06
Total, real			35	115	30	28

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Zemdegas - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (450)
 Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January			February			March			April	May	June
1	09:00		14:14 (4)	08:21		15:57 (2)	07:13			06:48	05:27	04:27
	15:39	24	14:38 (4)	16:40	6	16:03 (2)	17:46			19:55	21:01	22:02
2	09:00		14:14 (4)	08:19		15:55 (2)	07:11			06:45	05:25	04:25
	15:41	24	14:38 (4)	16:42	11	16:06 (2)	17:48			19:57	21:03	22:04
3	09:00		14:16 (4)	08:17		15:55 (2)	07:08			06:42	05:23	04:24
	15:42	23	14:39 (4)	16:44	14	16:09 (2)	17:50			19:59	21:06	22:05
4	08:59		14:16 (4)	08:15		15:53 (2)	07:05			06:39	05:20	04:23
	15:43	23	14:40 (4)	16:47	18	16:11 (2)	17:53			20:01	21:08	22:07
5	08:59		14:16 (4)	08:12		15:53 (2)	07:03			06:36	05:18	04:22
	15:45	23	14:39 (4)	16:49	21	16:14 (2)	17:55			20:04	21:10	22:08
6	08:58		14:17 (4)	08:10		15:52 (2)	07:00			06:34	05:15	04:21
	15:46	22	14:39 (4)	16:52	24	16:16 (2)	17:57			20:06	21:12	22:09
7	08:57		14:17 (4)	08:08		15:52 (2)	06:57			06:31	05:13	04:20
	15:48	23	14:40 (4)	16:54	26	16:18 (2)	17:59			20:08	21:14	22:11
8	08:57		14:18 (4)	08:06		15:51 (2)	06:54			06:28	05:11	04:19
	15:49	22	14:40 (4)	16:56	27	16:18 (2)	18:02			20:10	21:16	22:12
9	08:56		14:19 (4)	08:03		15:51 (2)	06:52			06:25	05:09	04:18
	15:51	21	14:40 (4)	16:59	28	16:19 (2)	18:04			20:13	21:19	22:13
10	08:55		14:20 (4)	08:01		15:50 (2)	06:49			06:23	05:06	04:18
	15:53	21	14:41 (4)	17:01	28	16:18 (2)	18:06			20:15	21:21	22:14
11	08:54		14:20 (4)	07:59		15:51 (2)	06:46			06:20	05:04	04:17
	15:55	20	14:40 (4)	17:03	28	16:19 (2)	18:08			20:17	21:23	22:15
12	08:53		14:21 (4)	07:56		15:51 (2)	06:43			06:17	05:02	04:17
	15:57	19	14:40 (4)	17:06	30	16:32 (3)	18:11			20:19	21:25	22:16
13	08:52		14:22 (4)	07:54		15:52 (2)	06:41		17:40 (1)	06:14	05:00	04:16
	15:58	17	14:39 (4)	17:08	33	16:35 (3)	18:13	4	17:44 (1)	20:21	21:27	22:17
14	08:51		14:24 (4)	07:52		15:52 (2)	06:38		17:39 (1)	06:12	04:58	04:16
	16:00	16	14:40 (4)	17:11	36	16:38 (3)	18:15	7	17:46 (1)	20:24	21:29	22:18
15	08:49		14:24 (4)	07:49		15:52 (2)	06:35		17:38 (1)	06:09	04:56	04:15
	16:02	15	14:39 (4)	17:13	37	16:40 (3)	18:17	10	17:48 (1)	20:26	21:31	22:18
16	08:48		14:27 (4)	07:47		15:53 (2)	06:32		17:38 (1)	06:06	04:54	04:15
	16:04	12	15:23 (14)	17:15	39	16:43 (3)	18:20	12	17:50 (1)	20:28	21:33	22:19
17	08:47		14:29 (4)	07:44		15:54 (2)	06:29		17:38 (1)	06:04	04:51	04:15
	16:06	10	15:25 (14)	17:18	39	16:45 (3)	18:22	15	17:53 (1)	20:30	21:35	22:20
18	08:45		15:22 (14)	07:42		15:56 (2)	06:27		17:38 (1)	06:01	04:50	04:15
	16:08	5	15:27 (14)	17:20	36	16:46 (3)	18:24	16	17:54 (1)	20:32	21:37	22:20
19	08:44		15:22 (14)	07:39		15:57 (2)	06:24		17:39 (1)	05:58	04:48	04:15
	16:10	8	15:30 (14)	17:22	31	16:45 (3)	18:26	14	17:53 (1)	20:35	21:39	22:21
20	08:42		15:22 (14)	07:37		16:00 (2)	06:21		17:40 (1)	05:56	04:46	04:15
	16:13	10	15:32 (14)	17:25	22	16:43 (3)	18:28	11	17:51 (1)	20:37	21:41	22:21
21	08:41		15:22 (14)	07:34		16:32 (3)	06:18		17:42 (1)	05:53	04:44	04:15
	16:15	13	15:35 (14)	17:27	9	16:41 (3)	18:31	6	17:48 (1)	20:39	21:43	22:21
22	08:39		15:23 (14)	07:32			06:16			05:50	04:42	04:15
	16:17	14	15:37 (14)	17:29			18:33			20:41	21:45	22:21
23	08:38		15:23 (14)	07:29			06:13			05:48	04:40	04:15
	16:19	17	15:40 (14)	17:32			18:35			20:43	21:47	22:22
24	08:36		15:23 (14)	07:26			06:10			05:45	04:39	04:15
	16:21	19	15:42 (14)	17:34			18:37			20:46	21:49	22:22
25	08:34		15:24 (14)	07:24			06:07			05:43	04:37	04:16
	16:24	18	15:42 (14)	17:36			18:39			20:48	21:51	22:22
26	08:32		15:25 (14)	07:21			06:04			05:40	04:35	04:16
	16:26	16	15:41 (14)	17:39			18:42			20:50	21:53	22:21
27	08:31		15:25 (14)	07:19			06:02			05:37	04:34	04:17
	16:28	15	15:40 (14)	17:41			18:44			20:52	21:54	22:21
28	08:29		15:26 (14)	07:16			05:59			05:35	04:32	04:17
	16:30	14	15:40 (14)	17:43			18:46			20:55	21:56	22:21
29	08:27		15:28 (14)				06:56			05:32	04:31	04:18
	16:33	11	15:39 (14)				19:48			20:57	21:58	22:21
30	08:25		15:30 (14)				06:53			05:30	04:29	04:19
	16:35	7	15:37 (14)				19:50			20:59	21:59	22:20
31	08:23		16:00 (2)				06:50				04:28	
	16:37	1	16:01 (2)				19:53				22:01	
Potential sun hours	227			262			365			429	515	539
Total, worst case		503			543			95				
Sun reduction		0.11			0.19			0.40				
Oper. time red.		1.00			1.00			1.00				
Wind dir. red.		1.00			1.00			1.00				
Total reduction		0.11			0.19			0.40				
Total, real		55			106			38				

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Zemdegas - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (450)
 Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	July	August	September	October	November	December				
1	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	18:20 (1) 18:22 (1)	07:27 16:32	15:20 (2) 15:48 (2)	08:33 15:37	14:02 (4) 20	
2	04:21 22:19	05:11 21:33	06:17 20:14	07:20 18:50		07:30 16:29	15:21 (2) 15:48 (2)	08:35 15:36	14:02 (4) 21	
3	04:21 22:19	05:13 21:31	06:19 20:12	07:23 18:48		07:32 16:27	15:20 (2) 15:47 (2)	08:36 15:35	14:02 (4) 21	
4	04:22 22:18	05:15 21:29	06:21 20:09	07:25 18:45		07:34 16:25	15:21 (2) 15:47 (2)	08:38 15:34	14:02 (4) 22	
5	04:24 22:17	05:17 21:26	06:23 20:06	07:27 18:42		07:37 16:23	15:21 (2) 15:46 (2)	08:40 15:33	14:03 (4) 22	
6	04:25 22:16	05:19 21:24	06:25 20:03	07:29 18:39		07:39 16:20	15:22 (2) 15:44 (2)	08:41 15:32	14:03 (4) 22	
7	04:26 22:16	05:21 21:22	06:27 20:01	07:31 18:37		07:41 16:18	15:24 (2) 15:42 (2)	08:43 15:32	14:03 (4) 23	
8	04:27 22:15	05:23 21:19	06:29 19:58	07:33 18:34		07:44 16:16	15:24 (2) 15:39 (2)	08:44 15:31	14:04 (4) 23	
9	04:28 22:14	05:26 21:17	06:32 19:55	07:36 18:31		07:46 16:14	15:26 (2) 15:37 (2)	08:46 15:31	14:04 (4) 23	
10	04:30 22:13	05:28 21:14	06:34 19:52	07:38 18:28		07:48 16:12	15:28 (2) 15:34 (2)	08:47 15:30	14:05 (4) 23	
11	04:31 22:11	05:30 21:12	06:36 19:49	07:40 18:26		07:50 16:10	15:31 (2) 15:32 (2)	08:49 15:30	14:04 (4) 24	
12	04:33 22:10	05:32 21:10	06:38 19:47	07:42 18:23		07:53 16:07	15:02 (14) 15:09 (14)	08:50 15:29	14:05 (4) 24	
13	04:34 22:09	05:34 21:07	06:40 19:44	07:44 18:20		07:55 16:05	15:00 (14) 15:11 (14)	08:51 15:29	14:06 (4) 23	
14	04:36 22:08	05:36 21:05	06:42 19:41	07:47 18:18		07:57 16:03	14:59 (14) 15:13 (14)	08:52 15:29	14:06 (4) 23	
15	04:37 22:06	05:38 21:02	06:44 19:38	07:49 18:15		07:59 16:02	14:58 (14) 15:13 (14)	08:53 15:29	14:06 (4) 24	
16	04:39 22:05	05:40 21:00	06:46 19:35	07:51 18:12		08:02 16:00	14:58 (14) 15:14 (14)	08:54 15:29	14:06 (4) 24	
17	04:40 22:03	05:43 20:57	06:48 19:33	07:53 18:10		08:04 15:58	14:57 (14) 15:15 (14)	08:55 15:29	14:07 (4) 23	
18	04:42 22:02	05:45 20:55	06:51 19:30	07:55 18:07		08:06 15:56	14:57 (14) 15:16 (14)	08:56 15:29	14:07 (4) 24	
19	04:44 22:00	05:47 20:52	06:53 19:27	07:58 18:04		08:08 15:54	14:57 (14) 15:14 (14)	08:57 15:29	14:08 (4) 24	
20	04:46 21:58	05:49 20:49	06:55 19:24	08:00 18:02	17:06 (3) 17:08 (3)	08:10 15:52	14:58 (14) 15:12 (14)	08:58 15:29	14:09 (4) 24	
21	04:47 21:57	05:51 20:47	06:57 19:21	08:02 17:59	17:03 (3) 17:13 (3)	08:13 15:51	14:57 (14) 15:10 (14)	08:58 15:30	14:09 (4) 23	
22	04:49 21:55	05:53 20:44	06:59 19:18	08:04 17:57	16:29 (2) 17:14 (3)	08:15 15:49	14:58 (14) 15:09 (14)	08:59 15:30	14:10 (4) 23	
23	04:51 21:53	05:55 20:41	07:01 19:16	18:25 (1) 18:35 (1)	08:07 17:54	16:27 (2) 17:15 (3)	08:17 15:48	14:58 (14) 15:06 (14)	08:59 15:31	14:10 (4) 23
24	04:53 21:51	05:58 20:39	07:03 19:13	18:23 (1) 18:36 (1)	08:09 17:51	16:25 (2) 17:15 (3)	08:19 15:46	14:59 (14) 15:04 (14)	09:00 15:31	14:10 (4) 24
25	04:55 21:49	06:00 20:36	07:05 19:10	18:21 (1) 18:37 (1)	07:11 16:49	15:24 (2) 16:15 (3)	08:21 15:45	14:07 (4) 15:03 (14)	09:00 15:32	14:11 (4) 24
26	04:57 21:47	06:02 20:33	07:08 19:07	18:20 (1) 18:36 (1)	07:14 16:46	15:22 (2) 16:12 (3)	08:23 15:43	14:05 (4) 15:01 (14)	09:00 15:33	14:12 (4) 23
27	04:59 21:46	06:04 20:31	07:10 19:04	18:20 (1) 18:33 (1)	07:16 16:44	15:22 (2) 16:10 (3)	08:25 15:42	14:04 (4) 14:18 (4)	09:01 15:34	14:12 (4) 24
28	05:01 21:44	06:06 20:28	07:12 19:02	18:19 (1) 18:30 (1)	07:18 16:41	15:21 (2) 16:06 (3)	08:27 15:41	14:04 (4) 14:20 (4)	09:01 15:35	14:13 (4) 23
29	05:03 21:41	06:08 20:25	07:14 18:59	18:19 (1) 18:27 (1)	07:20 16:39	15:21 (2) 16:04 (3)	08:29 15:39	14:03 (4) 14:20 (4)	09:01 15:35	14:12 (4) 24
30	05:05 21:39	06:10 20:23	07:16 18:56	18:20 (1) 18:25 (1)	07:23 16:37	15:20 (2) 16:01 (3)	08:31 15:38	14:03 (4) 14:21 (4)	09:01 15:37	14:13 (4) 24
31	05:07 21:37	06:13 20:20		07:25 16:34	15:20 (2) 15:48 (2)			09:01 15:38	14:14 (4) 24	
Potential sun hours	538	474	386	321		241		207		
Total, worst case			92	347		461		716		
Sun reduction			0.46	0.28		0.08		0.06		
Oper. time red.			1.00	1.00		1.00		1.00		
Wind dir. red.			1.00	1.00		1.00		1.00		
Total reduction			0.46	0.28		0.08		0.06		
Total, real			43	98		36		44		

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Zemgales iela 11 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (744)

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:28 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
2	09:00 15:41	08:19 16:42	07:11 17:48	06:45 19:57	05:25 21:04	04:25 22:04	04:21 22:20	05:11 21:33	06:17 20:15	07:21 18:51	07:30 16:29	08:35 15:36
3	09:00 15:42	08:17 16:45	07:08 17:50	06:42 19:59	05:23 21:06	04:24 22:06	04:21 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:37 15:35
4	08:59 15:43	08:15 16:47	07:05 17:53	06:39 20:02	05:20 21:08	04:23 22:07	04:22 22:18	05:15 21:29	06:21 20:09	07:25 18:45	07:34 16:25	08:38 15:34
5	08:59 15:45	08:13 16:49	07:03 17:55	06:37 20:04	05:18 21:10	04:22 22:08	04:24 22:18	05:17 21:26	06:23 20:06	07:27 18:42	07:37 16:23	08:40 15:33
6	08:58 15:46	08:10 16:52	07:00 17:57	06:34 20:06	05:16 21:12	04:21 22:10	04:25 22:17	05:19 21:24	06:25 20:04	07:29 18:39	07:39 16:20	08:42 15:32
7	08:58 15:48	08:08 16:54	06:57 17:59	06:31 20:08	05:13 21:15	04:20 22:11	04:26 22:16	05:21 21:22	06:27 20:01	07:31 18:37	07:41 16:18	08:43 15:32
8	08:57 15:49	08:06 16:56	06:55 18:02	06:28 20:10	05:11 21:17	04:19 22:12	04:27 22:15	05:24 21:19	06:30 19:58	07:34 18:34	07:44 16:16	08:45 15:31
9	08:56 15:51	08:04 16:59	06:52 18:04	06:25 20:13	05:09 21:19	04:18 22:13	04:28 22:14	05:26 21:17	06:32 19:55	07:36 18:31	07:46 16:14	08:46 15:31
10	08:55 15:53	08:01 17:01	06:49 18:06	06:23 20:15	05:06 21:21	04:18 22:14	04:30 22:13	05:28 21:15	06:34 19:52	07:38 18:28	07:48 16:12	08:48 15:30
11	08:54 15:55	07:59 17:04	06:46 18:09	06:20 20:17	05:04 21:23	04:17 22:15	04:31 22:12	05:30 21:12	06:36 19:50	07:40 18:26	07:51 16:10	08:49 15:30
12	08:53 15:57	07:57 17:06	06:44 18:11	06:17 20:19	05:02 21:25	04:17 22:16	04:33 22:10	05:32 21:19	06:38 19:47	07:42 18:23	07:53 16:08	08:50 15:29
13	08:52 15:58	07:54 17:08	06:41 18:13	06:15 20:22	05:00 21:27	04:16 22:17	04:34 22:09	05:34 21:07	06:40 19:44	07:45 18:20	07:55 16:06	08:51 15:29
14	08:51 16:00	07:52 17:11	06:38 18:15	06:12 20:24	04:58 21:29	04:16 22:18	04:36 22:08	05:36 21:05	06:42 19:41	07:47 18:18	07:57 16:04	08:53 15:29
15	08:50 16:02	07:49 17:13	06:35 18:17	06:09 20:26	04:56 21:32	04:15 22:19	04:37 22:06	05:38 21:02	06:44 19:38	07:49 18:15	08:00 16:02	08:54 15:29
16	08:48 16:04	07:47 17:15	06:32 18:20	06:06 20:28	04:54 21:34	04:15 22:19	04:39 22:05	05:41 21:00	06:46 19:35	07:51 18:12	08:02 16:00	08:55 15:29
17	08:47 16:06	07:44 17:18	06:30 18:22	06:04 20:30	04:52 21:36	04:15 22:20	04:41 22:03	05:43 20:57	06:49 19:33	07:53 18:10	08:04 15:58	08:56 15:29
18	08:46 16:08	07:42 17:20	06:27 18:24	06:01 20:33	04:50 21:38	04:15 22:20	04:42 22:02	05:45 20:55	06:51 19:30	07:56 18:07	08:06 15:56	08:56 15:29
19	08:44 16:10	07:39 17:22	06:24 18:26	05:58 20:35	04:48 21:40	04:15 22:21	04:44 22:00	05:47 20:52	06:53 19:27	07:58 18:04	08:09 15:54	08:57 15:29
20	08:43 16:13	07:37 17:25	06:21 18:29	05:56 20:37	04:46 21:42	04:15 22:21	04:46 21:59	05:49 20:50	06:55 19:24	08:00 18:02	08:11 15:53	08:58 15:29
21	08:41 16:15	07:34 17:27	06:18 18:31	05:53 20:39	04:44 21:44	04:15 22:21	04:47 21:57	05:51 20:47	06:57 19:21	08:02 17:59	08:13 15:51	08:59 15:30
22	08:40 16:17	07:32 17:30	06:16 18:33	05:50 20:41	04:42 21:45	04:15 22:22	04:49 21:55	05:53 20:44	06:59 19:19	08:05 17:57	08:15 15:49	08:59 15:30
23	08:38 16:19	07:29 17:32	06:13 18:35	05:48 20:44	04:40 21:47	04:15 22:22	04:51 21:53	05:56 20:42	07:01 19:16	08:07 17:54	08:17 15:48	09:00 15:31
24	08:36 16:21	07:27 17:34	06:10 18:37	05:45 20:46	04:39 21:49	04:15 22:22	04:53 21:52	05:58 20:39	07:03 19:13	08:09 17:51	08:19 15:46	09:00 15:31
25	08:34 16:24	07:24 17:37	06:07 18:40	05:43 20:48	04:37 21:51	04:16 22:22	04:55 21:50	06:00 20:36	07:06 19:10	07:11 16:49	08:21 15:45	09:00 15:32
26	08:33 16:26	07:21 17:39	06:04 18:42	05:40 20:50	04:35 21:53	04:16 22:22	04:57 21:48	06:02 20:34	07:08 19:07	07:14 16:46	08:23 15:43	09:01 15:33
27	08:31 16:28	07:19 17:41	06:02 18:44	05:38 20:53	04:34 21:55	04:17 22:22	04:59 21:46	06:04 20:31	07:10 19:05	07:16 16:44	08:25 15:42	09:01 15:34
28	08:29 16:30	07:16 17:43	05:59 18:46	05:35 20:55	04:32 21:56	04:17 22:21	05:01 21:44	06:06 20:28	07:12 19:02	07:18 16:42	08:27 15:41	09:01 15:35
29	08:27 16:33		05:56 19:48	05:33 20:57	04:31 21:58	04:18 22:21	05:03 21:42	06:08 20:26	07:14 18:59	07:21 16:39	08:29 15:39	09:01 15:35
30	08:25 16:35		05:53 19:51	05:30 20:59	04:29 22:00	04:19 22:21	05:05 21:40	06:10 20:23	07:16 18:56	07:23 16:37	08:31 15:38	09:01 15:37
31	08:23 16:37		05:50 19:53		04:28 22:01		05:07 21:38	06:13 20:20		07:25 16:34		09:01 15:38
Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Zemgales iela 12 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (757)
Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:28 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
2	09:00 15:41	08:19 16:42	07:11 17:48	06:45 19:57	05:25 21:04	04:25 22:04	04:21 22:20	05:11 21:33	06:17 20:15	07:21 18:51	07:30 16:29	08:35 15:36
3	09:00 15:42	08:17 16:44	07:08 17:50	06:42 19:59	05:23 21:06	04:24 22:06	04:21 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:37 15:35
4	08:59 15:43	08:15 16:47	07:05 17:53	06:39 20:02	05:20 21:08	04:23 22:07	04:22 22:18	05:15 21:29	06:21 20:09	07:25 18:45	07:34 16:25	08:38 15:34
5	08:59 15:45	08:13 16:49	07:03 17:55	06:37 20:04	05:18 21:10	04:22 22:08	04:24 22:18	05:17 21:26	06:23 20:06	07:27 18:42	07:37 16:23	08:40 15:33
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11	08:54 15:55	07:59 17:04	06:46 18:09	06:20 20:17	05:04 21:23	04:17 22:15	04:31 22:12	05:30 21:12	06:36 19:50	07:40 18:26	07:51 16:10	08:49 15:30
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31	08:23 16:37		05:50 19:53		04:28 22:01		05:07 21:38	06:13 20:20		07:25 16:34		09:01 15:38
Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Zemgales iela 13 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (734)

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:28 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
2	09:00 15:41	08:19 16:42	07:11 17:48	06:45 19:57	05:25 21:04	04:25 22:04	04:21 22:20	05:11 21:33	06:17 20:15	07:21 18:51	07:30 16:29	08:35 15:36
3	09:00 15:42	08:17 16:45	07:08 17:50	06:42 19:59	05:23 21:06	04:24 22:06	04:21 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:37 15:35
4	08:59 15:43	08:15 16:47	07:05 17:53	06:39 20:02	05:20 21:08	04:23 22:07	04:22 22:18	05:15 21:29	06:21 20:09	07:25 18:45	07:35 16:25	08:38 15:34
5	08:59 15:45	08:13 16:49	07:03 17:55	06:37 20:04	05:18 21:10	04:22 22:09	04:24 22:18	05:17 21:26	06:23 20:06	07:27 18:42	07:37 16:23	08:40 15:33
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31	08:23 16:37		05:50 19:53		04:28 22:01		05:07 21:38	06:13 20:20		07:25 16:34		09:01 15:38
Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Zemgales iela 13A - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (692)

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:28 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
2	09:00 15:41	08:19 16:42	07:11 17:48	06:45 19:57	05:25 21:04	04:25 22:04	04:21 22:20	05:11 21:33	06:17 20:15	07:21 18:51	07:30 16:29	08:35 15:36
3	09:00 15:42	08:17 16:45	07:08 17:50	06:42 19:59	05:23 21:06	04:24 22:06	04:21 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:37 15:35
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23	08:38 16:19	07:29 17:32	06:13 18:35	05:48 20:44	04:40 21:47	04:15 22:22	04:51 21:53	05:56 20:42	07:01 19:16	08:07 17:54	08:17 15:48	09:00 15:31
24	08:36 16:21	07:27 17:34	06:10 18:37	05:45 20:46	04:39 21:49	04:15 22:22	04:53 21:52	05:58 20:39	07:03 19:13	08:09 17:51	08:19 15:46	09:00 15:31
25	08:34 16:24	07:24 17:37	06:07 18:40	05:43 20:48	04:37 21:51	04:16 22:22	04:55 21:50	06:00 20:36	07:06 19:10	07:11 16:49	08:21 15:45	09:00 15:32
26	08:33 16:26	07:21 17:39	06:04 18:42	05:40 20:50	04:35 21:53	04:16 22:22	04:57 21:48	06:02 20:34	07:08 19:07	07:14 16:46	08:23 15:43	09:01 15:33
27	08:31 16:28	07:19 17:41	06:02 18:44	05:38 20:53	04:34 21:55	04:17 22:22	04:59 21:46	06:04 20:31	07:10 19:05	07:16 16:44	08:25 15:42	09:01 15:34
28	08:29 16:30	07:16 17:43	05:59 18:46	05:35 20:55	04:32 21:56	04:17 22:21	05:01 21:44	06:06 20:28	07:12 19:02	07:18 16:42	08:27 15:41	09:01 15:35
29	08:27 16:33		05:56 19:48	05:33 20:57	04:31 21:58	04:18 22:21	05:03 21:42	06:08 20:26	07:14 18:59	07:21 16:39	08:29 15:39	09:01 15:35
30	08:25 16:35		05:53 19:51	05:30 20:59	04:29 22:00	04:19 22:21	05:05 21:40	06:10 20:23	07:16 18:56	07:23 16:37	08:31 15:38	09:01 15:37
31	08:23 16:37		05:50 19:53		04:28 22:01		05:07 21:38	06:13 20:20		07:25 16:34		09:01 15:38
Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Zemgales iela 14 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (726)

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:28 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
2	09:00 15:41	08:19 16:42	07:11 17:48	06:45 19:57	05:25 21:04	04:25 22:04	04:21 22:20	05:11 21:33	06:17 20:15	07:21 18:51	07:30 16:29	08:35 15:36
3	09:00 15:42	08:17 16:44	07:08 17:50	06:42 19:59	05:23 21:06	04:24 22:06	04:21 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:37 15:35
4	08:59 15:43	08:15 16:47	07:05 17:53	06:39 20:02	05:20 21:08	04:23 22:07	04:22 22:18	05:15 21:29	06:21 20:09	07:25 18:45	07:34 16:25	08:38 15:34
5	08:59 15:45	08:13 16:49	07:03 17:55	06:37 20:04	05:18 21:10	04:22 22:08	04:24 22:18	05:17 21:26	06:23 20:06	07:27 18:42	07:37 16:23	08:40 15:33
6	08:58 15:46	08:10 16:52	07:00 17:57	06:34 20:06	05:16 21:12	04:21 22:10	04:25 22:17	05:19 21:24	06:25 20:04	07:29 18:39	07:39 16:20	08:42 15:32
7	08:58 15:48	08:08 16:54	06:57 17:59	06:31 20:08	05:13 21:15	04:20 22:11	04:26 22:16	05:21 21:22	06:27 20:01	07:31 18:37	07:41 16:18	08:43 15:32
8	08:57 15:49	08:06 16:56	06:55 18:02	06:28 20:10	05:11 21:17	04:19 22:12	04:27 22:15	05:24 21:19	06:30 19:58	07:34 18:34	07:44 16:16	08:45 15:31
9	08:56 15:51	08:04 16:59	06:52 18:04	06:25 20:13	05:09 21:19	04:18 22:13	04:28 22:14	05:26 21:17	06:32 19:55	07:36 18:31	07:46 16:14	08:46 15:31
10	08:55 15:53	08:01 17:01	06:49 18:06	06:23 20:15	05:06 21:21	04:18 22:14	04:30 22:13	05:28 21:15	06:34 19:52	07:38 18:28	07:48 16:12	08:48 15:30
11	08:54 15:55	07:59 17:04	06:46 18:09	06:20 20:17	05:04 21:23	04:17 22:15	04:31 22:12	05:30 21:12	06:36 19:50	07:40 18:26	07:51 16:10	08:49 15:30
12	08:53 15:57	07:57 17:06	06:44 18:11	06:17 20:19	05:02 21:25	04:17 22:16	04:33 22:10	05:32 21:19	06:38 19:47	07:42 18:23	07:53 16:08	08:50 15:29
13	08:52 15:58	07:54 17:08	06:41 18:13	06:15 20:22	05:00 21:27	04:16 22:17	04:34 22:09	05:34 21:07	06:40 19:44	07:45 18:20	07:55 16:06	08:51 15:29
14	08:51 16:00	07:52 17:11	06:38 18:15	06:12 20:24	04:58 21:29	04:16 22:18	04:36 22:08	05:36 21:05	06:42 19:41	07:47 18:18	07:57 16:04	08:53 15:29
15	08:50 16:02	07:49 17:13	06:35 18:17	06:09 20:26	04:56 21:32	04:15 22:19	04:37 22:06	05:38 21:02	06:44 19:38	07:49 18:15	08:00 16:02	08:54 15:29
16	08:48 16:04	07:47 17:15	06:32 18:20	06:06 20:28	04:54 21:34	04:15 22:19	04:39 22:05	05:41 21:00	06:46 19:35	07:51 18:12	08:02 16:00	08:55 15:29
17	08:47 16:06	07:44 17:18	06:30 18:22	06:04 20:30	04:52 21:36	04:15 22:20	04:40 22:03	05:43 20:57	06:49 19:33	07:53 18:10	08:04 15:58	08:56 15:29
18	08:46 16:08	07:42 17:20	06:27 18:24	06:01 20:33	04:50 21:38	04:15 22:20	04:42 22:02	05:45 20:55	06:51 19:30	07:56 18:07	08:06 15:56	08:56 15:29
19	08:44 16:10	07:39 17:22	06:24 18:26	05:58 20:35	04:48 21:40	04:15 22:21	04:44 22:00	05:47 20:52	06:53 19:27	07:58 18:04	08:09 15:54	08:57 15:29
20	08:43 16:13	07:37 17:25	06:21 18:29	05:56 20:37	04:46 21:42	04:15 22:21	04:46 21:59	05:49 20:50	06:55 19:24	08:00 18:02	08:11 15:53	08:58 15:29
21	08:41 16:15	07:34 17:27	06:18 18:31	05:53 20:39	04:44 21:44	04:15 22:21	04:47 21:57	05:51 20:47	06:57 19:21	08:02 17:59	08:13 15:51	08:59 15:30
22	08:40 16:17	07:32 17:30	06:16 18:33	05:50 20:41	04:42 21:45	04:15 22:22	04:49 21:55	05:53 20:44	06:59 19:19	08:05 17:57	08:15 15:49	08:59 15:30
23	08:38 16:19	07:29 17:32	06:13 18:35	05:48 20:44	04:40 21:47	04:15 22:22	04:51 21:53	05:56 20:42	07:01 19:16	08:07 17:54	08:17 15:48	09:00 15:31
24	08:36 16:21	07:27 17:34	06:10 18:37	05:45 20:46	04:39 21:49	04:15 22:22	04:53 21:52	05:58 20:39	07:03 19:13	08:09 17:51	08:19 15:46	09:00 15:31
25	08:34 16:24	07:24 17:37	06:07 18:40	05:43 20:48	04:37 21:51	04:16 22:22	04:55 21:50	06:00 20:36	07:06 19:10	07:11 16:49	08:21 15:45	09:00 15:32
26	08:33 16:26	07:21 17:39	06:04 18:42	05:40 20:50	04:35 21:53	04:16 22:22	04:57 21:48	06:02 20:34	07:08 19:07	07:14 16:46	08:23 15:43	09:01 15:33
27	08:31 16:28	07:19 17:41	06:02 18:44	05:38 20:53	04:34 21:55	04:17 22:22	04:59 21:46	06:04 20:31	07:10 19:05	07:16 16:44	08:25 15:42	09:01 15:34
28	08:29 16:30	07:16 17:43	05:59 18:46	05:35 20:55	04:32 21:56	04:17 22:21	05:01 21:44	06:06 20:28	07:12 19:02	07:18 16:41	08:27 15:41	09:01 15:35
29	08:27 16:33		05:56 19:48	05:32 20:57	04:31 21:58	04:18 22:21	05:03 21:42	06:08 20:26	07:14 18:59	07:21 16:39	08:29 15:39	09:01 15:35
30	08:25 16:35		05:53 19:51	05:30 20:59	04:29 22:00	04:19 22:21	05:05 21:40	06:10 20:23	07:16 18:56	07:23 16:37	08:31 15:38	09:01 15:37
31	08:23 16:37		05:50 19:53		04:28 22:01		05:07 21:38	06:13 20:20		07:25 16:34		09:01 15:38
Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Zemgales iela 15 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (688)
 Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:28 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
2	09:00 15:41	08:19 16:42	07:11 17:48	06:45 19:57	05:25 21:04	04:25 22:04	04:21 22:20	05:11 21:33	06:17 20:15	07:21 18:51	07:30 16:29	08:35 15:36
3	09:00 15:42	08:17 16:45	07:08 17:50	06:42 19:59	05:23 21:06	04:24 22:06	04:21 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:37 15:35
4	08:59 15:43	08:15 16:47	07:05 17:53	06:39 20:02	05:20 21:08	04:23 22:07	04:22 22:18	05:15 21:29	06:21 20:09	07:25 18:45	07:35 16:25	08:38 15:34
5	08:59 15:45	08:13 16:49	07:03 17:55	06:37 20:04	05:18 21:10	04:22 22:09	04:24 22:18	05:17 21:26	06:23 20:06	07:27 18:42	07:37 16:23	08:40 15:33
6	08:58 15:46	08:10 16:52	07:00 17:57	06:34 20:06	05:16 21:12	04:21 22:10	04:25 22:17	05:19 21:24	06:25 20:04	07:29 18:39	07:39 16:20	08:42 15:32
7	08:58 15:48	08:08 16:54	06:57 17:59	06:31 20:08	05:13 21:15	04:20 22:11	04:26 22:16	05:21 21:22	06:27 20:01	07:31 18:37	07:41 16:18	08:43 15:32
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10	08:55 15:53	08:01 17:01	06:49 18:06	06:23 20:15	05:06 21:21	04:18 22:14	04:30 22:13	05:28 21:15	06:34 19:52	07:38 18:28	07:48 16:12	08:48 15:30
11	08:54 15:55	07:59 17:04	06:46 18:09	06:20 20:17	05:04 21:23	04:17 22:15	04:31 22:12	05:30 21:12	06:36 19:50	07:40 18:26	07:51 16:10	08:49 15:30
12	08:53 15:57	07:57 17:06	06:44 18:11	06:17 20:19	05:02 21:25	04:17 22:16	04:33 22:10	05:32 21:10	06:38 19:47	07:42 18:23	07:53 16:08	08:50 15:29
13	08:52 15:58	07:54 17:08	06:41 18:13	06:15 20:22	05:00 21:27	04:16 22:17	04:34 22:09	05:34 21:07	06:40 19:44	07:45 18:20	07:55 16:06	08:51 15:29
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15	08:50 16:02	07:49 17:13	06:35 18:17	06:09 20:26	04:56 21:32	04:15 22:19	04:37 22:06	05:38 21:02	06:44 19:38	07:49 18:15	08:00 16:02	08:54 15:29
16	08:48 16:04	07:47 17:15	06:32 18:20	06:06 20:28	04:54 21:34	04:15 22:19	04:39 22:05	05:41 21:00	06:47 19:36	07:51 18:12	08:02 16:00	08:55 15:29
17	08:47 16:06	07:45 17:18	06:30 18:22	06:04 20:30	04:52 21:36	04:15 22:20	04:41 22:03	05:43 20:57	06:49 19:33	07:53 18:10	08:04 15:58	08:56 15:29
18	08:46 16:08	07:42 17:20	06:27 18:24	06:01 20:33	04:50 21:38	04:15 22:20	04:42 22:02	05:45 20:55	06:51 19:30	07:56 18:07	08:06 15:56	08:56 15:29
19	08:44 16:11	07:39 17:22	06:24 18:26	05:58 20:35	04:48 21:40	04:15 22:21	04:44 22:00	05:47 20:52	06:53 19:27	07:58 18:04	08:09 15:54	08:57 15:29
20	08:43 16:13	07:37 17:25	06:21 18:29	05:56 20:37	04:46 21:42	04:15 22:21	04:46 21:59	05:49 20:50	06:55 19:24	08:00 18:02	08:11 15:53	08:58 15:29
21	08:41 16:15	07:34 17:27	06:18 18:31	05:53 20:39	04:44 21:44	04:15 22:22	04:47 21:57	05:51 20:47	06:57 19:21	08:02 17:59	08:13 15:51	08:59 15:30
22	08:40 16:17	07:32 17:30	06:16 18:33	05:50 20:41	04:42 21:45	04:15 22:22	04:49 21:55	05:53 20:44	06:59 19:19	08:05 17:57	08:15 15:49	08:59 15:30
23	08:38 16:19	07:29 17:32	06:13 18:35	05:48 20:44	04:40 21:47	04:15 22:22	04:51 21:53	05:56 20:42	07:01 19:16	08:07 17:54	08:17 15:48	09:00 15:31
24	08:36 16:21	07:27 17:34	06:10 18:37	05:45 20:46	04:39 21:49	04:15 22:22	04:53 21:52	05:58 20:39	07:03 19:13	08:09 17:51	08:19 15:46	09:00 15:31
25	08:34 16:24	07:24 17:37	06:07 18:40	05:43 20:48	04:37 21:51	04:16 22:22	04:55 21:50	06:00 20:36	07:06 19:10	07:11 16:49	08:21 15:45	09:00 15:32
26	08:33 16:26	07:21 17:39	06:04 18:42	05:40 20:50	04:35 21:53	04:16 22:22	04:57 21:48	06:02 20:34	07:08 19:07	07:14 16:46	08:23 15:43	09:01 15:33
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29	08:27 16:33		05:56 19:48	05:33 20:57	04:31 21:58	04:18 22:21	05:03 21:42	06:08 20:26	07:14 18:59	07:21 16:39	08:29 15:39	09:01 15:35
30	08:25 16:35		05:53 19:51	05:30 20:59	04:29 22:00	04:19 22:21	05:05 21:40	06:10 20:23	07:16 18:56	07:23 16:37	08:31 15:38	09:01 15:37
31	08:23 16:37		05:50 19:53		04:28 22:01		05:07 21:38	06:13 20:20		07:25 16:34		09:01 15:38
Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Zemgales iela 16 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (719)

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:28 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
2	09:00 15:41	08:19 16:42	07:11 17:48	06:45 19:57	05:25 21:04	04:25 22:04	04:21 22:20	05:11 21:33	06:17 20:15	07:21 18:51	07:30 16:29	08:35 15:36
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4	08:59 15:43	08:15 16:47	07:05 17:53	06:39 20:02	05:20 21:08	04:23 22:07	04:22 22:18	05:15 21:29	06:21 20:09	07:25 18:45	07:34 16:25	08:38 15:34
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6	08:58 15:46	08:10 16:52	07:00 17:57	06:34 20:06	05:16 21:12	04:21 22:10	04:25 22:17	05:19 21:24	06:25 20:04	07:29 18:39	07:39 16:20	08:42 15:32
7	08:58 15:48	08:08 16:54	06:57 17:59	06:31 20:08	05:13 21:15	04:20 22:11	04:26 22:16	05:21 21:22	06:27 20:01	07:31 18:37	07:41 16:18	08:43 15:32
8	08:57 15:49	08:06 16:56	06:55 18:02	06:28 20:10	05:11 21:17	04:19 22:12	04:27 22:15	05:24 21:19	06:30 19:58	07:34 18:34	07:44 16:16	08:45 15:31
9	08:56 15:51	08:04 16:59	06:52 18:04	06:25 20:13	05:09 21:19	04:18 22:13	04:28 22:14	05:26 21:17	06:32 19:55	07:36 18:31	07:46 16:14	08:46 15:31
10	08:55 15:53	08:01 17:01	06:49 18:06	06:23 20:15	05:06 21:21	04:18 22:14	04:30 22:13	05:28 21:15	06:34 19:52	07:38 18:28	07:48 16:12	08:48 15:30
11	08:54 15:55	07:59 17:04	06:46 18:09	06:20 20:17	05:04 21:23	04:17 22:15	04:31 22:12	05:30 21:12	06:36 19:50	07:40 18:26	07:51 16:10	08:49 15:30
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31	08:23 16:37		05:50 19:53		04:28 22:01		05:07 21:38	06:13 20:20		07:25 16:34		09:01 15:38
Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Zemgales iela 17 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (685)

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:28 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
2	09:00 15:41	08:19 16:42	07:11 17:48	06:45 19:57	05:25 21:04	04:25 22:04	04:21 22:20	05:11 21:33	06:17 20:15	07:21 18:51	07:30 16:29	08:35 15:36
3	09:00 15:42	08:17 16:45	07:08 17:50	06:42 19:59	05:23 21:06	04:24 22:06	04:21 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:37 15:35
4	08:59 15:43	08:15 16:47	07:05 17:53	06:39 20:02	05:20 21:08	04:23 22:07	04:22 22:18	05:15 21:29	06:21 20:09	07:25 18:45	07:35 16:25	08:38 15:34
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31	08:23 16:37		05:50 19:53		04:28 22:01		05:07 21:38	06:13 20:20		07:25 16:34		09:01 15:38
Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Zemgales iela 17A - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (766)

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:28 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
2	09:00 15:41	08:19 16:42	07:11 17:48	06:45 19:57	05:25 21:04	04:25 22:04	04:21 22:20	05:11 21:33	06:17 20:15	07:21 18:51	07:30 16:29	08:35 15:36
3	09:00 15:42	08:17 16:45	07:08 17:50	06:42 19:59	05:23 21:06	04:24 22:06	04:21 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:37 15:35
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25	08:35 16:24	07:24 17:37	06:07 18:40	05:43 20:48	04:37 21:51	04:16 22:22	04:55 21:50	06:00 20:36	07:06 19:10	07:11 16:49	08:21 15:45	09:00 15:32
26	08:33 16:26	07:21 17:39	06:04 18:42	05:40 20:50	04:35 21:53	04:16 22:22	04:57 21:48	06:02 20:34	07:08 19:07	07:14 16:46	08:23 15:43	09:01 15:33
27	08:31 16:28	07:19 17:41	06:02 18:44	05:38 20:53	04:34 21:55	04:17 22:22	04:59 21:46	06:04 20:31	07:10 19:05	07:16 16:44	08:25 15:42	09:01 15:34
28	08:29 16:30	07:16 17:43	05:59 18:46	05:35 20:55	04:32 21:56	04:17 22:21	05:01 21:44	06:06 20:28	07:12 19:02	07:18 16:42	08:27 15:41	09:01 15:35
29	08:27 16:33		06:56 19:48	05:33 20:57	04:31 21:58	04:18 22:21	05:03 21:42	06:08 20:26	07:14 18:59	07:21 16:39	08:29 15:39	09:01 15:35
30	08:25 16:35		06:53 19:51	05:30 20:59	04:29 22:00	04:19 22:21	05:05 21:40	06:10 20:23	07:16 18:56	07:23 16:37	08:31 15:38	09:01 15:37
31	08:23 16:37		06:50 19:53		04:28 22:01		05:07 21:38	06:13 20:20		07:25 16:34		09:01 15:38
Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Zemgales iela 18 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (745)

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:28 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
2	09:00 15:41	08:19 16:42	07:11 17:48	06:45 19:57	05:25 21:04	04:25 22:04	04:21 22:20	05:11 21:33	06:17 20:15	07:21 18:51	07:30 16:29	08:35 15:36
3	09:00 15:42	08:17 16:44	07:08 17:50	06:42 19:59	05:23 21:06	04:24 22:06	04:21 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:37 15:35
4	08:59 15:43	08:15 16:47	07:05 17:53	06:39 20:02	05:20 21:08	04:23 22:07	04:22 22:18	05:15 21:29	06:21 20:09	07:25 18:45	07:34 16:25	08:38 15:34
5	08:59 15:45	08:13 16:49	07:03 17:55	06:37 20:04	05:18 21:10	04:22 22:09	04:24 22:18	05:17 21:26	06:23 20:06	07:27 18:42	07:37 16:23	08:40 15:33
6	08:58 15:46	08:10 16:52	07:00 17:57	06:34 20:06	05:16 21:12	04:21 22:10	04:25 22:17	05:19 21:24	06:25 20:04	07:29 18:39	07:39 16:20	08:42 15:32
7	08:58 15:48	08:08 16:54	06:57 17:59	06:31 20:08	05:13 21:15	04:20 22:11	04:26 22:16	05:21 21:22	06:27 20:01	07:31 18:37	07:41 16:18	08:43 15:32
8	08:57 15:49	08:06 16:56	06:55 18:02	06:28 20:10	05:11 21:17	04:19 22:12	04:27 22:15	05:24 21:19	06:30 19:58	07:34 18:34	07:44 16:16	08:45 15:31
9	08:56 15:51	08:04 16:59	06:52 18:04	06:25 20:13	05:09 21:19	04:18 22:13	04:28 22:14	05:26 21:17	06:32 19:55	07:36 18:31	07:46 16:14	08:46 15:31
10	08:55 15:53	08:01 17:01	06:49 18:06	06:23 20:15	05:06 21:21	04:18 22:14	04:30 22:13	05:28 21:15	06:34 19:52	07:38 18:28	07:48 16:12	08:48 15:30
11	08:54 15:55	07:59 17:04	06:46 18:09	06:20 20:17	05:04 21:23	04:17 22:15	04:31 22:12	05:30 21:12	06:36 19:50	07:40 18:26	07:51 16:10	08:49 15:30
12	08:53 15:57	07:57 17:06	06:44 18:11	06:17 20:19	05:02 21:25	04:17 22:16	04:33 22:10	05:32 21:19	06:38 19:47	07:42 18:23	07:53 16:08	08:50 15:29
13	08:52 15:58	07:54 17:08	06:41 18:13	06:15 20:22	05:00 21:27	04:16 22:17	04:34 22:09	05:34 21:07	06:40 19:44	07:45 18:20	07:55 16:06	08:51 15:29
14	08:51 16:00	07:52 17:11	06:38 18:15	06:12 20:24	04:58 21:29	04:16 22:18	04:36 22:08	05:36 21:05	06:42 19:41	07:47 18:18	07:57 16:04	08:53 15:29
15	08:50 16:02	07:49 17:13	06:35 18:17	06:09 20:26	04:56 21:32	04:15 22:19	04:37 22:06	05:38 21:02	06:44 19:38	07:49 18:15	08:00 16:02	08:54 15:29
16	08:48 16:04	07:47 17:15	06:32 18:20	06:06 20:28	04:54 21:34	04:15 22:19	04:39 22:05	05:41 21:00	06:46 19:35	07:51 18:12	08:02 16:00	08:55 15:29
17	08:47 16:06	07:44 17:18	06:30 18:22	06:04 20:30	04:52 21:36	04:15 22:20	04:40 22:03	05:43 20:57	06:49 19:33	07:53 18:10	08:04 15:58	08:56 15:29
18	08:46 16:08	07:42 17:20	06:27 18:24	06:01 20:33	04:50 21:38	04:15 22:20	04:42 22:02	05:45 20:55	06:51 19:30	07:56 18:07	08:06 15:56	08:56 15:29
19	08:44 16:10	07:39 17:22	06:24 18:26	05:58 20:35	04:48 21:40	04:15 22:21	04:44 22:00	05:47 20:52	06:53 19:27	07:58 18:04	08:09 15:54	08:57 15:29
20	08:43 16:13	07:37 17:25	06:21 18:29	05:56 20:37	04:46 21:42	04:15 22:21	04:46 21:59	05:49 20:50	06:55 19:24	08:00 18:02	08:11 15:53	08:58 15:29
21	08:41 16:15	07:34 17:27	06:18 18:31	05:53 20:39	04:44 21:44	04:15 22:22	04:47 21:57	05:51 20:47	06:57 19:21	08:02 17:59	08:13 15:51	08:59 15:30
22	08:40 16:17	07:32 17:30	06:16 18:33	05:50 20:41	04:42 21:45	04:15 22:22	04:49 21:55	05:53 20:44	06:59 19:19	08:05 17:57	08:15 15:49	08:59 15:30
23	08:38 16:19	07:29 17:32	06:13 18:35	05:48 20:44	04:40 21:47	04:15 22:22	04:51 21:53	05:56 20:42	07:01 19:16	08:07 17:54	08:17 15:48	09:00 15:31
24	08:36 16:21	07:27 17:34	06:10 18:37	05:45 20:46	04:39 21:49	04:15 22:22	04:53 21:52	05:58 20:39	07:03 19:13	08:09 17:51	08:19 15:46	09:00 15:31
25	08:34 16:24	07:24 17:37	06:07 18:40	05:43 20:48	04:37 21:51	04:16 22:22	04:55 21:50	06:00 20:36	07:06 19:10	07:11 16:49	08:21 15:45	09:00 15:32
26	08:33 16:26	07:21 17:39	06:04 18:42	05:40 20:50	04:35 21:53	04:16 22:22	04:57 21:48	06:02 20:34	07:08 19:07	07:14 16:46	08:23 15:43	09:01 15:33
27	08:31 16:28	07:19 17:41	06:02 18:44	05:38 20:53	04:34 21:55	04:17 22:22	04:59 21:46	06:04 20:31	07:10 19:05	07:16 16:44	08:25 15:42	09:01 15:34
28	08:29 16:30	07:16 17:43	05:59 18:46	05:35 20:55	04:32 21:56	04:17 22:21	05:01 21:44	06:06 20:28	07:12 19:02	07:18 16:41	08:27 15:41	09:01 15:35
29	08:27 16:33		05:56 19:48	05:33 20:57	04:31 21:58	04:18 22:21	05:03 21:42	06:08 20:26	07:14 18:59	07:21 16:39	08:29 15:39	09:01 15:35
30	08:25 16:35		05:53 19:51	05:30 20:59	04:29 22:00	04:19 22:21	05:05 21:40	06:10 20:23	07:16 18:56	07:23 16:37	08:31 15:38	09:01 15:37
31	08:23 16:37		05:50 19:53		04:28 22:01		05:07 21:38	06:13 20:20		07:25 16:34		09:01 15:38
Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment
 Vilandes 3-6
 LV-1010 Riga
 0037167242411
 Baiba / baiba.ozolina@environment.lv
 Calculated:
 15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Zemgales iela 19 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (699)
 Sunshine probability S (Average daily sunshine hours) []

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
 0.80 1.82 4.75 6.09 9.67 10.05 8.16 7.72 5.94 2.93 0.63 0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:28 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
2	09:00 15:41	08:19 16:42	07:11 17:48	06:45 19:57	05:25 21:04	04:25 22:04	04:21 22:20	05:11 21:33	06:17 20:15	07:21 18:51	07:30 16:29	08:35 15:36
3	09:00 15:42	08:17 16:45	07:08 17:50	06:42 19:59	05:23 21:06	04:24 22:06	04:21 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:37 15:35
4	08:59 15:43	08:15 16:47	07:05 17:53	06:39 20:02	05:20 21:08	04:23 22:07	04:22 22:18	05:15 21:29	06:21 20:09	07:25 18:45	07:35 16:25	08:38 15:34
5	08:59 15:45	08:13 16:49	07:03 17:55	06:37 20:04	05:18 21:10	04:22 22:09	04:24 22:18	05:17 21:26	06:23 20:06	07:27 18:42	07:37 16:23	08:40 15:33
6	08:58 15:46	08:10 16:52	07:00 17:57	06:34 20:06	05:16 21:12	04:21 22:10	04:25 22:17	05:19 21:24	06:25 20:04	07:29 18:39	07:39 16:20	08:42 15:32
7	08:58 15:48	08:08 16:54	06:57 17:59	06:31 20:08	05:13 21:15	04:20 22:11	04:26 22:16	05:21 21:22	06:27 20:01	07:31 18:37	07:41 16:18	08:43 15:32
8	08:57 15:49	08:06 16:56	06:55 18:02	06:28 20:10	05:11 21:17	04:19 22:12	04:27 22:15	05:24 21:20	06:30 19:58	07:34 18:34	07:44 16:16	08:45 15:31
9	08:56 15:51	08:04 16:59	06:52 18:04	06:25 20:13	05:09 21:19	04:18 22:13	04:28 22:14	05:26 21:17	06:32 19:55	07:36 18:31	07:46 16:14	08:46 15:31
10	08:55 15:53	08:01 17:01	06:49 18:06	06:23 20:15	05:06 21:21	04:18 22:14	04:30 22:13	05:28 21:15	06:34 19:52	07:38 18:28	07:48 16:12	08:48 15:30
11	08:54 15:55	07:59 17:04	06:46 18:09	06:20 20:17	05:04 21:23	04:17 22:15	04:31 22:12	05:30 21:12	06:36 19:50	07:40 18:26	07:51 16:10	08:49 15:30
12	08:53 15:57	07:57 17:06	06:44 18:11	06:17 20:19	05:02 21:25	04:17 22:16	04:33 22:10	05:32 21:10	06:38 19:47	07:42 18:23	07:53 16:08	08:50 15:29
13	08:52 15:58	07:54 17:08	06:41 18:13	06:15 20:22	05:00 21:27	04:16 22:17	04:34 22:09	05:34 21:07	06:40 19:44	07:45 18:20	07:55 16:06	08:51 15:29
14	08:51 16:00	07:52 17:11	06:38 18:15	06:12 20:24	04:58 21:29	04:16 22:18	04:36 22:08	05:36 21:05	06:42 19:41	07:47 18:18	07:57 16:04	08:53 15:29
15	08:50 16:02	07:49 17:13	06:35 18:17	06:09 20:26	04:56 21:32	04:15 22:19	04:37 22:06	05:38 21:02	06:44 19:38	07:49 18:15	08:00 16:02	08:54 15:29
16	08:48 16:04	07:47 17:15	06:32 18:20	06:06 20:28	04:54 21:34	04:15 22:19	04:39 22:05	05:41 21:00	06:47 19:36	07:51 18:12	08:02 16:00	08:55 15:29
17	08:47 16:06	07:45 17:18	06:30 18:22	06:04 20:30	04:52 21:36	04:15 22:20	04:41 22:03	05:43 20:57	06:49 19:33	07:53 18:10	08:04 15:58	08:56 15:29
18	08:46 16:08	07:42 17:20	06:27 18:24	06:01 20:33	04:50 21:38	04:15 22:20	04:42 22:02	05:45 20:55	06:51 19:30	07:56 18:07	08:06 15:56	08:56 15:29
19	08:44 16:11	07:40 17:22	06:24 18:26	05:58 20:35	04:48 21:40	04:15 22:21	04:44 22:00	05:47 20:52	06:53 19:27	07:58 18:04	08:09 15:54	08:57 15:29
20	08:43 16:13	07:37 17:25	06:21 18:29	05:56 20:37	04:46 21:42	04:15 22:21	04:46 21:59	05:49 20:50	06:55 19:24	08:00 18:02	08:11 15:53	08:58 15:29
21	08:41 16:15	07:34 17:27	06:18 18:31	05:53 20:39	04:44 21:44	04:15 22:22	04:47 21:57	05:51 20:47	06:57 19:21	08:02 17:59	08:13 15:51	08:59 15:30
22	08:40 16:17	07:32 17:30	06:16 18:33	05:50 20:41	04:42 21:45	04:15 22:22	04:49 21:55	05:53 20:44	06:59 19:19	08:05 17:57	08:15 15:49	08:59 15:30
23	08:38 16:19	07:29 17:32	06:13 18:35	05:48 20:44	04:40 21:47	04:15 22:22	04:51 21:53	05:56 20:42	07:01 19:16	08:07 17:54	08:17 15:48	09:00 15:31
24	08:36 16:21	07:27 17:34	06:10 18:37	05:45 20:46	04:39 21:49	04:15 22:22	04:53 21:52	05:58 20:39	07:03 19:13	08:09 17:52	08:19 15:46	09:00 15:31
25	08:35 16:24	07:24 17:37	06:07 18:40	05:43 20:48	04:37 21:51	04:16 22:22	04:55 21:50	06:00 20:36	07:06 19:10	07:11 16:49	08:21 15:45	09:00 15:32
26	08:33 16:26	07:21 17:39	06:04 18:42	05:40 20:50	04:35 21:53	04:16 22:22	04:57 21:48	06:02 20:34	07:08 19:07	07:14 16:46	08:23 15:43	09:01 15:33
27	08:31 16:28	07:19 17:41	06:02 18:44	05:38 20:53	04:34 21:55	04:17 22:22	04:59 21:46	06:04 20:31	07:10 19:05	07:16 16:44	08:25 15:42	09:01 15:34
28	08:29 16:30	07:16 17:43	05:59 18:46	05:35 20:55	04:32 21:56	04:17 22:21	05:01 21:44	06:06 20:28	07:12 19:02	07:18 16:42	08:27 15:41	09:01 15:35
29	08:27 16:33		06:56 19:48	05:33 20:57	04:31 21:58	04:18 22:21	05:03 21:42	06:08 20:26	07:14 18:59	07:21 16:39	08:29 15:39	09:01 15:35
30	08:25 16:35		06:53 19:51	05:30 20:59	04:29 22:00	04:19 22:21	05:05 21:40	06:10 20:23	07:16 18:56	07:23 16:37	08:31 15:38	09:01 15:37
31	08:23 16:37		06:50 19:53		04:28 22:01		05:07 21:38	06:13 20:20		07:25 16:34		09:01 15:38
Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Last time (hh:mm) with flicker	(WTG causing flicker last time)
	Minutes with flicker		

Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Zemgales iela 19A - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (716)

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:28 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
2	09:00 15:41	08:19 16:42	07:11 17:48	06:45 19:57	05:25 21:04	04:25 22:04	04:21 22:20	05:11 21:33	06:17 20:15	07:21 18:51	07:30 16:29	08:35 15:36
3	09:00 15:42	08:17 16:45	07:08 17:50	06:42 19:59	05:23 21:06	04:24 22:06	04:21 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:37 15:35
4	08:59 15:43	08:15 16:47	07:05 17:53	06:39 20:02	05:20 21:08	04:23 22:07	04:22 22:18	05:15 21:29	06:21 20:09	07:25 18:45	07:35 16:25	08:38 15:34
5	08:59 15:45	08:13 16:49	07:03 17:55	06:37 20:04	05:18 21:10	04:22 22:09	04:24 22:18	05:17 21:26	06:23 20:06	07:27 18:42	07:37 16:23	08:40 15:33
6	08:58 15:46	08:10 16:52	07:00 17:57	06:34 20:06	05:16 21:12	04:21 22:10	04:25 22:17	05:19 21:24	06:25 20:04	07:29 18:39	07:39 16:20	08:42 15:32
7	08:58 15:48	08:08 16:54	06:57 17:59	06:31 20:08	05:13 21:15	04:20 22:11	04:26 22:16	05:21 21:22	06:27 20:01	07:31 18:37	07:41 16:18	08:43 15:32
8	08:57 15:49	08:06 16:56	06:55 18:02	06:28 20:10	05:11 21:17	04:19 22:12	04:27 22:15	05:24 21:20	06:30 19:58	07:34 18:34	07:44 16:16	08:45 15:31
9	08:56 15:51	08:04 16:59	06:52 18:04	06:25 20:13	05:09 21:19	04:18 22:13	04:28 22:14	05:26 21:17	06:32 19:55	07:36 18:31	07:46 16:14	08:46 15:31
10	08:55 15:53	08:01 17:01	06:49 18:06	06:23 20:15	05:06 21:21	04:18 22:14	04:30 22:13	05:28 21:15	06:34 19:52	07:38 18:28	07:48 16:12	08:48 15:30
11	08:54 15:55	07:59 17:04	06:46 18:09	06:20 20:17	05:04 21:23	04:17 22:15	04:31 22:12	05:30 21:12	06:36 19:50	07:40 18:26	07:51 16:10	08:49 15:30
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14	08:51 16:00	07:52 17:11	06:38 18:15	06:12 20:24	04:58 21:29	04:16 22:18	04:36 22:08	05:36 21:05	06:42 19:41	07:47 18:18	07:57 16:04	08:53 15:29
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31	08:23 16:37		05:50 19:53		04:28 22:01		05:07 21:38	06:13 20:20		07:25 16:34		09:01 15:38
Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment
 Vilandes 3-6
 LV-1010 Riga
 0037167242411
 Baiba / baiba.ozolina@environment.lv
 Calculated:
 15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Zemgales iela 20 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (708)
 Sunshine probability S (Average daily sunshine hours) []

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
 0.80 1.82 4.75 6.09 9.67 10.05 8.16 7.72 5.94 2.93 0.63 0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:28 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
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3	09:00 15:42	08:17 16:45	07:08 17:50	06:42 19:59	05:23 21:06	04:24 22:06	04:21 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:37 15:35
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5	08:59 15:45	08:13 16:49	07:03 17:55	06:37 20:04	05:18 21:10	04:22 22:09	04:24 22:18	05:17 21:26	06:23 20:06	07:27 18:42	07:37 16:23	08:40 15:33
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31	08:23 16:37		05:50 19:53		04:28 22:01		05:07 21:38	06:13 20:20		07:25 16:34		09:01 15:38
Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Last time (hh:mm) with flicker	(WTG causing flicker last time)
	Minutes with flicker		

Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Zemgales iela 22 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (721)

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:28 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
2	09:00 15:41	08:19 16:42	07:11 17:48	06:45 19:57	05:25 21:04	04:25 22:04	04:21 22:20	05:11 21:33	06:17 20:15	07:21 18:51	07:30 16:29	08:35 15:36
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29	08:27 16:33		05:56 19:48	05:33 20:57	04:31 21:58	04:18 22:21	05:03 21:42	06:08 20:26	07:14 18:59	07:21 16:39	08:29 15:39	09:01 15:35
30	08:25 16:35		05:53 19:51	05:30 20:59	04:29 22:00	04:19 22:21	05:05 21:40	06:10 20:23	07:16 18:56	07:23 16:37	08:31 15:38	09:01 15:37
31	08:23 16:37		05:50 19:53		04:28 22:01		05:07 21:38	06:13 20:20		07:25 16:34		09:01 15:38
Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Zemgales iela 24 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (697)

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:28 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
2	09:00 15:41	08:19 16:42	07:11 17:48	06:45 19:57	05:25 21:04	04:25 22:04	04:21 22:20	05:11 21:33	06:17 20:15	07:21 18:51	07:30 16:29	08:35 15:36
3	09:00 15:42	08:17 16:45	07:08 17:50	06:42 19:59	05:23 21:06	04:24 22:06	04:21 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:37 15:35
4	08:59 15:43	08:15 16:47	07:05 17:53	06:39 20:02	05:20 21:08	04:23 22:07	04:22 22:18	05:15 21:29	06:21 20:09	07:25 18:45	07:35 16:25	08:38 15:34
5	08:59 15:45	08:13 16:49	07:03 17:55	06:37 20:04	05:18 21:10	04:22 22:09	04:24 22:18	05:17 21:26	06:23 20:06	07:27 18:42	07:37 16:23	08:40 15:33
6	08:58 15:46	08:10 16:52	07:00 17:57	06:34 20:06	05:16 21:12	04:21 22:10	04:25 22:17	05:19 21:24	06:25 20:04	07:29 18:39	07:39 16:20	08:42 15:32
7	08:58 15:48	08:08 16:54	06:57 17:59	06:31 20:08	05:13 21:15	04:20 22:11	04:26 22:16	05:21 21:22	06:27 20:01	07:31 18:37	07:41 16:18	08:43 15:32
8	08:57 15:49	08:06 16:56	06:55 18:02	06:28 20:10	05:11 21:17	04:19 22:12	04:27 22:15	05:24 21:20	06:30 19:58	07:34 18:34	07:44 16:16	08:45 15:31
9	08:56 15:51	08:04 16:59	06:52 18:04	06:25 20:13	05:09 21:19	04:18 22:13	04:28 22:14	05:26 21:17	06:32 19:55	07:36 18:31	07:46 16:14	08:46 15:31
10	08:55 15:53	08:01 17:01	06:49 18:06	06:23 20:15	05:06 21:21	04:18 22:14	04:30 22:13	05:28 21:15	06:34 19:52	07:38 18:28	07:48 16:12	08:48 15:30
11	08:54 15:55	07:59 17:04	06:46 18:09	06:20 20:17	05:04 21:23	04:17 22:15	04:31 22:12	05:30 21:12	06:36 19:50	07:40 18:26	07:51 16:10	08:49 15:30
12	08:53 15:57	07:57 17:06	06:44 18:11	06:17 20:19	05:02 21:25	04:17 22:16	04:33 22:10	05:32 21:10	06:38 19:47	07:42 18:23	07:53 16:08	08:50 15:29
13	08:52 15:58	07:54 17:08	06:41 18:13	06:15 20:22	05:00 21:27	04:16 22:17	04:34 22:09	05:34 21:07	06:40 19:44	07:45 18:20	07:55 16:06	08:51 15:29
14	08:51 16:00	07:52 17:11	06:38 18:15	06:12 20:24	04:58 21:29	04:16 22:18	04:36 22:08	05:36 21:05	06:42 19:41	07:47 18:18	07:57 16:04	08:53 15:29
15	08:50 16:02	07:49 17:13	06:35 18:17	06:09 20:26	04:56 21:32	04:15 22:19	04:37 22:06	05:38 21:02	06:44 19:38	07:49 18:15	08:00 16:02	08:54 15:29
16	08:48 16:04	07:47 17:15	06:32 18:20	06:06 20:28	04:54 21:34	04:15 22:19	04:39 22:05	05:41 21:00	06:47 19:36	07:51 18:12	08:02 16:00	08:55 15:29
17	08:47 16:06	07:45 17:18	06:30 18:22	06:04 20:30	04:52 21:36	04:15 22:20	04:40 22:03	05:43 20:57	06:49 19:33	07:53 18:10	08:04 15:58	08:56 15:29
18	08:46 16:08	07:42 17:20	06:27 18:24	06:01 20:33	04:50 21:38	04:15 22:20	04:42 22:02	05:45 20:55	06:51 19:30	07:56 18:07	08:06 15:56	08:56 15:29
19	08:44 16:10	07:39 17:22	06:24 18:26	05:58 20:35	04:48 21:40	04:15 22:21	04:44 22:00	05:47 20:52	06:53 19:27	07:58 18:04	08:09 15:54	08:57 15:29
20	08:43 16:13	07:37 17:25	06:21 18:29	05:56 20:37	04:46 21:42	04:15 22:21	04:46 21:59	05:49 20:50	06:55 19:24	08:00 18:02	08:11 15:53	08:58 15:29
21	08:41 16:15	07:34 17:27	06:18 18:31	05:53 20:39	04:44 21:44	04:15 22:22	04:47 21:57	05:51 20:47	06:57 19:21	08:02 17:59	08:13 15:51	08:59 15:30
22	08:40 16:17	07:32 17:30	06:16 18:33	05:50 20:41	04:42 21:45	04:15 22:22	04:49 21:55	05:53 20:44	06:59 19:19	08:05 17:57	08:15 15:49	08:59 15:30
23	08:38 16:19	07:29 17:32	06:13 18:35	05:48 20:44	04:40 21:47	04:15 22:22	04:51 21:53	05:56 20:42	07:01 19:16	08:07 17:54	08:17 15:48	09:00 15:31
24	08:36 16:21	07:27 17:34	06:10 18:37	05:45 20:46	04:39 21:49	04:15 22:22	04:53 21:52	05:58 20:39	07:03 19:13	08:09 17:51	08:19 15:46	09:00 15:31
25	08:34 16:24	07:24 17:37	06:07 18:40	05:43 20:48	04:37 21:51	04:16 22:22	04:55 21:50	06:00 20:36	07:06 19:10	07:11 16:49	08:21 15:45	09:00 15:32
26	08:33 16:26	07:21 17:39	06:04 18:42	05:40 20:50	04:35 21:53	04:16 22:22	04:57 21:48	06:02 20:34	07:08 19:07	07:14 16:46	08:23 15:43	09:01 15:33
27	08:31 16:28	07:19 17:41	06:02 18:44	05:38 20:53	04:34 21:55	04:17 22:22	04:59 21:46	06:04 20:31	07:10 19:05	07:16 16:44	08:25 15:42	09:01 15:34
28	08:29 16:30	07:16 17:43	05:59 18:46	05:35 20:55	04:32 21:56	04:17 22:21	05:01 21:44	06:06 20:28	07:12 19:02	07:18 16:42	08:27 15:41	09:01 15:35
29	08:27 16:33		05:56 19:48	05:33 20:57	04:31 21:58	04:18 22:21	05:03 21:42	06:08 20:26	07:14 18:59	07:21 16:39	08:29 15:39	09:01 15:35
30	08:25 16:35		05:53 19:51	05:30 20:59	04:29 22:00	04:19 22:21	05:05 21:40	06:10 20:23	07:16 18:56	07:23 16:37	08:31 15:38	09:01 15:37
31	08:23 16:37		05:50 19:53		04:28 22:01		05:07 21:38	06:13 20:20		07:25 16:34		09:01 15:38
Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Zemgales iela 28 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (730)

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:28 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
2	09:00 15:41	08:19 16:42	07:11 17:48	06:45 19:57	05:25 21:04	04:25 22:04	04:21 22:20	05:11 21:33	06:17 20:15	07:21 18:51	07:30 16:29	08:35 15:36
3	09:00 15:42	08:17 16:45	07:08 17:50	06:42 19:59	05:23 21:06	04:24 22:06	04:21 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:37 15:35
4	08:59 15:43	08:15 16:47	07:05 17:53	06:39 20:02	05:20 21:08	04:23 22:07	04:22 22:18	05:15 21:29	06:21 20:09	07:25 18:45	07:35 16:25	08:38 15:34
5	08:59 15:45	08:13 16:49	07:03 17:55	06:37 20:04	05:18 21:10	04:22 22:09	04:24 22:18	05:17 21:26	06:23 20:06	07:27 18:42	07:37 16:23	08:40 15:33
6	08:58 15:46	08:10 16:52	07:00 17:57	06:34 20:06	05:16 21:12	04:21 22:10	04:25 22:17	05:19 21:24	06:25 20:04	07:29 18:39	07:39 16:20	08:42 15:32
7	08:58 15:48	08:08 16:54	06:57 17:59	06:31 20:08	05:13 21:15	04:20 22:11	04:26 22:16	05:21 21:22	06:27 20:01	07:31 18:37	07:41 16:18	08:43 15:32
8	08:57 15:49	08:06 16:56	06:55 18:02	06:28 20:10	05:11 21:17	04:19 22:12	04:27 22:15	05:24 21:20	06:30 19:58	07:34 18:34	07:44 16:16	08:45 15:31
9	08:56 15:51	08:04 16:59	06:52 18:04	06:25 20:13	05:09 21:19	04:18 22:13	04:28 22:14	05:26 21:17	06:32 19:55	07:36 18:31	07:46 16:14	08:46 15:31
10	08:55 15:53	08:01 17:01	06:49 18:06	06:23 20:15	05:06 21:21	04:18 22:14	04:30 22:13	05:28 21:15	06:34 19:52	07:38 18:28	07:48 16:12	08:48 15:30
11	08:54 15:55	07:59 17:04	06:46 18:09	06:20 20:17	05:04 21:23	04:17 22:15	04:31 22:12	05:30 21:12	06:36 19:50	07:40 18:26	07:51 16:10	08:49 15:30
12	08:53 15:57	07:57 17:06	06:44 18:11	06:17 20:19	05:02 21:25	04:17 22:16	04:33 22:10	05:32 21:10	06:38 19:47	07:42 18:23	07:53 16:08	08:50 15:29
13	08:52 15:58	07:54 17:08	06:41 18:13	06:15 20:22	05:00 21:27	04:16 22:17	04:34 22:09	05:34 21:07	06:40 19:44	07:45 18:20	07:55 16:06	08:51 15:29
14	08:51 16:00	07:52 17:11	06:38 18:15	06:12 20:24	04:58 21:29	04:16 22:18	04:36 22:08	05:36 21:05	06:42 19:41	07:47 18:18	07:57 16:04	08:53 15:29
15	08:50 16:02	07:49 17:13	06:35 18:17	06:09 20:26	04:56 21:32	04:15 22:19	04:37 22:06	05:38 21:02	06:44 19:38	07:49 18:15	08:00 16:02	08:54 15:29
16	08:48 16:04	07:47 17:15	06:32 18:20	06:06 20:28	04:54 21:34	04:15 22:19	04:39 22:05	05:41 21:00	06:47 19:36	07:51 18:12	08:02 16:00	08:55 15:29
17	08:47 16:06	07:45 17:18	06:30 18:22	06:04 20:30	04:52 21:36	04:15 22:20	04:40 22:03	05:43 20:57	06:49 19:33	07:53 18:10	08:04 15:58	08:56 15:29
18	08:46 16:08	07:42 17:20	06:27 18:24	06:01 20:33	04:50 21:38	04:15 22:20	04:42 22:02	05:45 20:55	06:51 19:30	07:56 18:07	08:06 15:56	08:56 15:29
19	08:44 16:10	07:40 17:22	06:24 18:26	05:58 20:35	04:48 21:40	04:15 22:21	04:44 22:00	05:47 20:52	06:53 19:27	07:58 18:04	08:09 15:54	08:57 15:29
20	08:43 16:13	07:37 17:25	06:21 18:29	05:56 20:37	04:46 21:42	04:15 22:21	04:46 21:59	05:49 20:50	06:55 19:24	08:00 18:02	08:11 15:53	08:58 15:29
21	08:41 16:15	07:34 17:27	06:18 18:31	05:53 20:39	04:44 21:44	04:15 22:22	04:47 21:57	05:51 20:47	06:57 19:21	08:02 17:59	08:13 15:51	08:59 15:30
22	08:40 16:17	07:32 17:30	06:16 18:33	05:50 20:41	04:42 21:45	04:15 22:22	04:49 21:55	05:53 20:44	06:59 19:19	08:05 17:57	08:15 15:49	08:59 15:30
23	08:38 16:19	07:29 17:32	06:13 18:35	05:48 20:44	04:40 21:47	04:15 22:22	04:51 21:53	05:56 20:42	07:01 19:16	08:07 17:54	08:17 15:48	09:00 15:31
24	08:36 16:21	07:27 17:34	06:10 18:37	05:45 20:46	04:39 21:49	04:15 22:22	04:53 21:52	05:58 20:39	07:03 19:13	08:09 17:52	08:19 15:46	09:00 15:31
25	08:35 16:24	07:24 17:37	06:07 18:40	05:43 20:48	04:37 21:51	04:16 22:22	04:55 21:50	06:00 20:36	07:06 19:10	07:11 16:49	08:21 15:45	09:00 15:32
26	08:33 16:26	07:21 17:39	06:04 18:42	05:40 20:50	04:35 21:53	04:16 22:22	04:57 21:48	06:02 20:34	07:08 19:07	07:14 16:46	08:23 15:43	09:01 15:33
27	08:31 16:28	07:19 17:41	06:02 18:44	05:38 20:53	04:34 21:55	04:17 22:22	04:59 21:46	06:04 20:31	07:10 19:05	07:16 16:44	08:25 15:42	09:01 15:34
28	08:29 16:30	07:16 17:43	05:59 18:46	05:35 20:55	04:32 21:56	04:17 22:21	05:01 21:44	06:06 20:28	07:12 19:02	07:18 16:42	08:27 15:41	09:01 15:35
29	08:27 16:33		05:56 19:48	05:33 20:57	04:31 21:58	04:18 22:21	05:03 21:42	06:08 20:26	07:14 18:59	07:21 16:39	08:29 15:39	09:01 15:35
30	08:25 16:35		05:53 19:51	05:30 20:59	04:29 22:00	04:19 22:21	05:05 21:40	06:10 20:23	07:16 18:56	07:23 16:37	08:31 15:38	09:01 15:37
31	08:23 16:37		05:50 19:53		04:28 22:01		05:07 21:38	06:13 20:20		07:25 16:34		09:01 15:38
Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Zemgailes iela 3 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (540)
 Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) []

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
 0.80 1.82 4.75 6.09 9.67 10.05 8.16 7.72 5.94 2.93 0.63 0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:28 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
2	09:00 15:41	08:19 16:42	07:11 17:48	06:45 19:57	05:25 21:04	04:25 22:04	04:21 22:20	05:11 21:33	06:17 20:15	07:21 18:51	07:30 16:29	08:35 15:36
3	09:00 15:42	08:17 16:44	07:08 17:50	06:42 19:59	05:23 21:06	04:24 22:06	04:21 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:37 15:35
4	08:59 15:43	08:15 16:47	07:05 17:53	06:39 20:02	05:20 21:08	04:23 22:07	04:22 22:18	05:15 21:29	06:21 20:09	07:25 18:45	07:34 16:25	08:38 15:34
5	08:59 15:45	08:13 16:49	07:03 17:55	06:37 20:04	05:18 21:10	04:22 22:08	04:24 22:18	05:17 21:26	06:23 20:06	07:27 18:42	07:37 16:23	08:40 15:33
6	08:58 15:46	08:10 16:52	07:00 17:57	06:34 20:06	05:16 21:12	04:21 22:10	04:25 22:17	05:19 21:24	06:25 20:04	07:29 18:39	07:39 16:20	08:42 15:32
7	08:58 15:48	08:08 16:54	06:57 17:59	06:31 20:08	05:13 21:15	04:20 22:11	04:26 22:16	05:21 21:22	06:27 20:01	07:31 18:37	07:41 16:18	08:43 15:32
8	08:57 15:49	08:06 16:56	06:55 18:02	06:28 20:10	05:11 21:17	04:19 22:12	04:27 22:15	05:23 21:19	06:30 19:58	07:34 18:34	07:44 16:16	08:45 15:31
9	08:56 15:51	08:04 16:59	06:52 18:04	06:25 20:13	05:09 21:19	04:18 22:13	04:28 22:14	05:26 21:17	06:32 19:55	07:36 18:31	07:46 16:14	08:46 15:31
10	08:55 15:53	08:01 17:01	06:49 18:06	06:23 20:15	05:06 21:21	04:18 22:14	04:30 22:13	05:28 21:15	06:34 19:52	07:38 18:28	07:48 16:12	08:48 15:30
11	08:54 15:55	07:59 17:04	06:46 18:09	06:20 20:17	05:04 21:23	04:17 22:15	04:31 22:12	05:30 21:12	06:36 19:50	07:40 18:26	07:51 16:10	08:49 15:30
12	08:53 15:57	07:57 17:06	06:44 18:11	06:17 20:19	05:02 21:25	04:17 22:16	04:33 22:10	05:32 21:19	06:38 19:47	07:42 18:23	07:53 16:08	08:50 15:29
13	08:52 15:58	07:54 17:08	06:41 18:13	06:14 20:22	05:00 21:27	04:16 22:17	04:34 22:09	05:34 21:07	06:40 19:44	07:44 18:20	07:55 16:05	08:51 15:29
14	08:51 16:00	07:52 17:11	06:38 18:15	06:12 20:24	04:58 21:29	04:16 22:18	04:36 22:08	05:36 21:05	06:42 19:41	07:47 18:18	07:57 16:04	08:53 15:29
15	08:50 16:02	07:49 17:13	06:35 18:17	06:09 20:26	04:56 21:32	04:15 22:19	04:37 22:06	05:38 21:02	06:44 19:38	07:49 18:15	08:00 16:02	08:54 15:29
16	08:48 16:04	07:47 17:15	06:32 18:20	06:06 20:28	04:54 21:34	04:15 22:19	04:39 22:05	05:41 21:00	06:46 19:35	07:51 18:12	08:02 16:00	08:55 15:29
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18	08:46 16:08	07:42 17:20	06:27 18:24	06:01 20:33	04:50 21:38	04:15 22:20	04:42 22:02	05:45 20:55	06:51 19:30	07:56 18:07	08:06 15:56	08:56 15:29
19	08:44 16:10	07:39 17:22	06:24 18:26	05:58 20:35	04:48 21:40	04:15 22:21	04:44 22:00	05:47 20:52	06:53 19:27	07:58 18:04	08:09 15:54	08:57 15:29
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31	08:23 16:37		05:50 19:53		04:28 22:01		05:07 21:37	06:13 20:20		07:25 16:34		09:01 15:38
Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Last time (hh:mm) with flicker	(WTG causing flicker last time)
	Minutes with flicker		

Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Zemgales iela 30 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (725)
 Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:28 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
2	09:00 15:41	08:19 16:42	07:11 17:48	06:45 19:57	05:25 21:04	04:25 22:04	04:21 22:20	05:11 21:33	06:17 20:15	07:21 18:51	07:30 16:29	08:35 15:36
3	09:00 15:42	08:17 16:45	07:08 17:50	06:42 19:59	05:23 21:06	04:24 22:06	04:21 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:37 15:35
4	08:59 15:43	08:15 16:47	07:05 17:53	06:39 20:02	05:20 21:08	04:23 22:07	04:22 22:18	05:15 21:29	06:21 20:09	07:25 18:45	07:35 16:25	08:38 15:34
5	08:59 15:45	08:13 16:49	07:03 17:55	06:37 20:04	05:18 21:10	04:22 22:09	04:24 22:18	05:17 21:26	06:23 20:06	07:27 18:42	07:37 16:23	08:40 15:33
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7	08:58 15:48	08:08 16:54	06:57 17:59	06:31 20:08	05:13 21:15	04:20 22:11	04:26 22:16	05:21 21:22	06:27 20:01	07:31 18:37	07:41 16:18	08:43 15:32
8	08:57 15:49	08:06 16:56	06:55 18:02	06:28 20:10	05:11 21:17	04:19 22:12	04:27 22:15	05:24 21:20	06:30 19:58	07:34 18:34	07:44 16:16	08:45 15:31
9	08:56 15:51	08:04 16:59	06:52 18:04	06:25 20:13	05:09 21:19	04:18 22:13	04:28 22:14	05:26 21:17	06:32 19:55	07:36 18:31	07:46 16:14	08:46 15:31
10	08:55 15:53	08:01 17:01	06:49 18:06	06:23 20:15	05:06 21:21	04:18 22:14	04:30 22:13	05:28 21:15	06:34 19:52	07:38 18:28	07:48 16:12	08:48 15:30
11	08:54 15:55	07:59 17:04	06:46 18:09	06:20 20:17	05:04 21:23	04:17 22:15	04:31 22:12	05:30 21:12	06:36 19:50	07:40 18:26	07:51 16:10	08:49 15:30
12	08:53 15:57	07:57 17:06	06:44 18:11	06:17 20:19	05:02 21:25	04:17 22:16	04:33 22:10	05:32 21:10	06:38 19:47	07:42 18:23	07:53 16:08	08:50 15:29
13	08:52 15:58	07:54 17:08	06:41 18:13	06:15 20:22	05:00 21:27	04:16 22:17	04:34 22:09	05:34 21:07	06:40 19:44	07:45 18:20	07:55 16:06	08:51 15:29
14	08:51 16:00	07:52 17:11	06:38 18:15	06:12 20:24	04:58 21:29	04:16 22:18	04:36 22:08	05:36 21:05	06:42 19:41	07:47 18:18	07:57 16:04	08:53 15:29
15	08:50 16:02	07:49 17:13	06:35 18:17	06:09 20:26	04:56 21:32	04:15 22:19	04:37 22:06	05:38 21:02	06:44 19:38	07:49 18:15	08:00 16:02	08:54 15:29
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17	08:47 16:06	07:45 17:18	06:30 18:22	06:04 20:30	04:52 21:36	04:15 22:20	04:40 22:03	05:43 20:57	06:49 19:33	07:53 18:10	08:04 15:58	08:56 15:29
18	08:46 16:08	07:42 17:20	06:27 18:24	06:01 20:33	04:50 21:38	04:15 22:20	04:42 22:02	05:45 20:55	06:51 19:30	07:56 18:07	08:06 15:56	08:56 15:29
19	08:44 16:10	07:40 17:22	06:24 18:26	05:58 20:35	04:48 21:40	04:15 22:21	04:44 22:00	05:47 20:52	06:53 19:27	07:58 18:04	08:09 15:54	08:57 15:29
20	08:43 16:13	07:37 17:25	06:21 18:29	05:56 20:37	04:46 21:42	04:15 22:21	04:46 21:59	05:49 20:50	06:55 19:24	08:00 18:02	08:11 15:53	08:58 15:29
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22	08:40 16:17	07:32 17:30	06:16 18:33	05:50 20:41	04:42 21:45	04:15 22:22	04:49 21:55	05:53 20:44	06:59 19:19	08:05 17:57	08:15 15:49	08:59 15:30
23	08:38 16:19	07:29 17:32	06:13 18:35	05:48 20:44	04:40 21:47	04:15 22:22	04:51 21:53	05:56 20:42	07:01 19:16	08:07 17:54	08:17 15:48	09:00 15:31
24	08:36 16:21	07:27 17:34	06:10 18:37	05:45 20:46	04:39 21:49	04:15 22:22	04:53 21:52	05:58 20:39	07:03 19:13	08:09 17:52	08:19 15:46	09:00 15:31
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26	08:33 16:26	07:21 17:39	06:04 18:42	05:40 20:50	04:35 21:53	04:16 22:22	04:57 21:48	06:02 20:34	07:08 19:07	07:14 16:46	08:23 15:43	09:01 15:33
27	08:31 16:28	07:19 17:41	06:02 18:44	05:38 20:53	04:34 21:55	04:17 22:22	04:59 21:46	06:04 20:31	07:10 19:05	07:16 16:44	08:25 15:42	09:01 15:34
28	08:29 16:30	07:16 17:43	05:59 18:46	05:35 20:55	04:32 21:56	04:17 22:21	05:01 21:44	06:06 20:28	07:12 19:02	07:18 16:42	08:27 15:41	09:01 15:35
29	08:27 16:33		06:56 19:48	05:33 20:57	04:31 21:58	04:18 22:21	05:03 21:42	06:08 20:26	07:14 18:59	07:21 16:39	08:29 15:39	09:01 15:35
30	08:25 16:35		06:53 19:51	05:30 20:59	04:29 22:00	04:19 22:21	05:05 21:40	06:10 20:23	07:16 18:56	07:23 16:37	08:31 15:38	09:01 15:37
31	08:23 16:37		06:50 19:53		04:28 22:01		05:07 21:38	06:13 20:20		07:25 16:34		09:01 15:38
Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Zemgales iela 31 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (678)

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:14 17:46	06:48 19:55	05:28 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
2	09:00 15:41	08:19 16:42	07:11 17:48	06:45 19:57	05:25 21:04	04:25 22:04	04:21 22:20	05:11 21:33	06:17 20:15	07:21 18:51	07:30 16:29	08:35 15:36
3	09:00 15:42	08:17 16:45	07:08 17:50	06:42 19:59	05:23 21:06	04:24 22:06	04:21 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:37 15:35
4	08:59 15:43	08:15 16:47	07:05 17:53	06:39 20:02	05:20 21:08	04:23 22:07	04:22 22:18	05:15 21:29	06:21 20:09	07:25 18:45	07:35 16:25	08:38 15:34
5	08:59 15:45	08:13 16:49	07:03 17:55	06:37 20:04	05:18 21:10	04:22 22:09	04:24 22:18	05:17 21:27	06:23 20:06	07:27 18:42	07:37 16:23	08:40 15:33
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12	08:53 15:57	07:57 17:06	06:44 18:11	06:17 20:19	05:02 21:25	04:17 22:16	04:33 22:10	05:32 21:10	06:38 19:47	07:42 18:23	07:53 16:08	08:50 15:29
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22	08:40 16:17	07:32 17:30	06:16 18:33	05:50 20:42	04:42 21:46	04:15 22:22	04:49 21:55	05:53 20:44	06:59 19:19	08:05 17:57	08:15 15:49	08:59 15:30
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Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Zemgales iela 34 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (717)

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:28 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
2	09:00 15:41	08:19 16:42	07:11 17:48	06:45 19:57	05:25 21:04	04:25 22:04	04:21 22:20	05:11 21:33	06:17 20:15	07:21 18:51	07:30 16:29	08:35 15:36
3	09:00 15:42	08:17 16:45	07:08 17:50	06:42 19:59	05:23 21:06	04:24 22:06	04:21 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:37 15:35
4	08:59 15:43	08:15 16:47	07:05 17:53	06:39 20:02	05:20 21:08	04:23 22:07	04:22 22:18	05:15 21:29	06:21 20:09	07:25 18:45	07:35 16:25	08:38 15:34
5	08:59 15:45	08:13 16:49	07:03 17:55	06:37 20:04	05:18 21:10	04:22 22:09	04:24 22:18	05:17 21:26	06:23 20:06	07:27 18:42	07:37 16:23	08:40 15:33
6	08:58 15:46	08:10 16:52	07:00 17:57	06:34 20:06	05:16 21:12	04:21 22:10	04:25 22:17	05:19 21:24	06:25 20:04	07:29 18:39	07:39 16:20	08:42 15:32
7	08:58 15:48	08:08 16:54	06:57 17:59	06:31 20:08	05:13 21:15	04:20 22:11	04:26 22:16	05:21 21:22	06:27 20:01	07:31 18:37	07:41 16:18	08:43 15:32
8	08:57 15:49	08:06 16:56	06:55 18:02	06:28 20:10	05:11 21:17	04:19 22:12	04:27 22:15	05:24 21:20	06:30 19:58	07:34 18:34	07:44 16:16	08:45 15:31
9	08:56 15:51	08:04 16:59	06:52 18:04	06:25 20:13	05:09 21:19	04:18 22:13	04:28 22:14	05:26 21:17	06:32 19:55	07:36 18:31	07:46 16:14	08:46 15:31
10	08:55 15:53	08:01 17:01	06:49 18:06	06:23 20:15	05:06 21:21	04:18 22:14	04:30 22:13	05:28 21:15	06:34 19:52	07:38 18:28	07:48 16:12	08:48 15:30
11	08:54 15:55	07:59 17:04	06:46 18:09	06:20 20:17	05:04 21:23	04:17 22:15	04:31 22:12	05:30 21:12	06:36 19:50	07:40 18:26	07:51 16:10	08:49 15:30
12	08:53 15:57	07:57 17:06	06:44 18:11	06:17 20:19	05:02 21:25	04:17 22:16	04:33 22:10	05:32 21:10	06:38 19:47	07:42 18:23	07:53 16:08	08:50 15:29
13	08:52 15:58	07:54 17:08	06:41 18:13	06:15 20:22	05:00 21:27	04:16 22:17	04:34 22:09	05:34 21:07	06:40 19:44	07:45 18:20	07:55 16:06	08:51 15:29
14	08:51 16:00	07:52 17:11	06:38 18:15	06:12 20:24	04:58 21:29	04:16 22:18	04:36 22:08	05:36 21:05	06:42 19:41	07:47 18:18	07:57 16:04	08:53 15:29
15	08:50 16:02	07:49 17:13	06:35 18:17	06:09 20:26	04:56 21:32	04:15 22:19	04:37 22:06	05:38 21:02	06:44 19:38	07:49 18:15	08:00 16:02	08:54 15:29
16	08:48 16:04	07:47 17:15	06:32 18:20	06:06 20:28	04:54 21:34	04:15 22:19	04:39 22:05	05:41 21:00	06:47 19:36	07:51 18:12	08:02 16:00	08:55 15:29
17	08:47 16:06	07:45 17:18	06:30 18:22	06:04 20:30	04:52 21:36	04:15 22:20	04:40 22:03	05:43 20:57	06:49 19:33	07:53 18:10	08:04 15:58	08:56 15:29
18	08:46 16:08	07:42 17:20	06:27 18:24	06:01 20:33	04:50 21:38	04:15 22:20	04:42 22:02	05:45 20:55	06:51 19:30	07:56 18:07	08:06 15:56	08:56 15:29
19	08:44 16:10	07:40 17:22	06:24 18:26	05:58 20:35	04:48 21:40	04:15 22:21	04:44 22:00	05:47 20:52	06:53 19:27	07:58 18:04	08:09 15:54	08:57 15:29
20	08:43 16:13	07:37 17:25	06:21 18:29	05:56 20:37	04:46 21:42	04:15 22:21	04:46 21:59	05:49 20:50	06:55 19:24	08:00 18:02	08:11 15:53	08:58 15:29
21	08:41 16:15	07:34 17:27	06:18 18:31	05:53 20:39	04:44 21:44	04:15 22:22	04:47 21:57	05:51 20:47	06:57 19:21	08:02 17:59	08:13 15:51	08:59 15:30
22	08:40 16:17	07:32 17:30	06:16 18:33	05:50 20:41	04:42 21:45	04:15 22:22	04:49 21:55	05:53 20:44	06:59 19:19	08:05 17:57	08:15 15:49	08:59 15:30
23	08:38 16:19	07:29 17:32	06:13 18:35	05:48 20:44	04:40 21:47	04:15 22:22	04:51 21:53	05:56 20:42	07:01 19:16	08:07 17:54	08:17 15:48	09:00 15:31
24	08:36 16:21	07:27 17:34	06:10 18:37	05:45 20:46	04:39 21:49	04:15 22:22	04:53 21:52	05:58 20:39	07:03 19:13	08:09 17:52	08:19 15:46	09:00 15:31
25	08:35 16:24	07:24 17:37	06:07 18:40	05:43 20:48	04:37 21:51	04:16 22:22	04:55 21:50	06:00 20:36	07:06 19:10	07:11 16:49	08:21 15:45	09:00 15:32
26	08:33 16:26	07:21 17:39	06:04 18:42	05:40 20:50	04:35 21:53	04:16 22:22	04:57 21:48	06:02 20:34	07:08 19:07	07:14 16:46	08:23 15:43	09:01 15:33
27	08:31 16:28	07:19 17:41	06:02 18:44	05:38 20:53	04:34 21:55	04:17 22:22	04:59 21:46	06:04 20:31	07:10 19:05	07:16 16:44	08:25 15:42	09:01 15:34
28	08:29 16:30	07:16 17:43	05:59 18:46	05:35 20:55	04:32 21:56	04:17 22:21	05:01 21:44	06:06 20:28	07:12 19:02	07:18 16:42	08:27 15:41	09:01 15:35
29	08:27 16:33		05:56 19:48	05:33 20:57	04:31 21:58	04:18 22:21	05:03 21:42	06:08 20:26	07:14 18:59	07:21 16:39	08:29 15:39	09:01 15:35
30	08:25 16:35		05:53 19:51	05:30 20:59	04:29 22:00	04:19 22:21	05:05 21:40	06:10 20:23	07:16 18:56	07:23 16:37	08:31 15:38	09:01 15:37
31	08:23 16:37		05:50 19:53		04:28 22:01		05:07 21:38	06:13 20:20		07:25 16:34		09:01 15:38
Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Zemgales iela 36 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (702)
 Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:28 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
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10	08:55 15:53	08:01 17:01	06:49 18:06	06:23 20:15	05:06 21:21	04:18 22:14	04:30 22:13	05:28 21:15	06:34 19:52	07:38 18:28	07:48 16:12	08:48 15:30
11	08:54 15:55	07:59 17:04	06:46 18:09	06:20 20:17	05:04 21:23	04:17 22:15	04:31 22:12	05:30 21:12	06:36 19:50	07:40 18:26	07:51 16:10	08:49 15:30
12	08:53 15:57	07:57 17:06	06:44 18:11	06:17 20:19	05:02 21:25	04:17 22:16	04:33 22:10	05:32 21:10	06:38 19:47	07:42 18:23	07:53 16:08	08:50 15:29
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19	08:44 16:10	07:40 17:22	06:24 18:26	05:58 20:35	04:48 21:40	04:15 22:21	04:44 22:00	05:47 20:52	06:53 19:27	07:58 18:04	08:09 15:54	08:57 15:29
20	08:43 16:13	07:37 17:25	06:21 18:29	05:56 20:37	04:46 21:42	04:15 22:21	04:46 21:59	05:49 20:50	06:55 19:24	08:00 18:02	08:11 15:53	08:58 15:29
21	08:41 16:15	07:34 17:27	06:18 18:31	05:53 20:39	04:44 21:44	04:15 22:22	04:47 21:57	05:51 20:47	06:57 19:21	08:02 17:59	08:13 15:51	08:59 15:30
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23	08:38 16:19	07:29 17:32	06:13 18:35	05:48 20:44	04:40 21:47	04:15 22:22	04:51 21:53	05:56 20:42	07:01 19:16	08:07 17:54	08:17 15:48	09:00 15:31
24	08:36 16:21	07:27 17:34	06:10 18:37	05:45 20:46	04:39 21:49	04:15 22:22	04:53 21:52	05:58 20:39	07:03 19:13	08:09 17:52	08:19 15:46	09:00 15:31
25	08:35 16:24	07:24 17:37	06:07 18:40	05:43 20:48	04:37 21:51	04:16 22:22	04:55 21:50	06:00 20:36	07:06 19:10	07:11 16:49	08:21 15:45	09:00 15:32
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29	08:27 16:33		05:56 19:48	05:33 20:57	04:31 21:58	04:18 22:21	05:03 21:42	06:08 20:26	07:14 18:59	07:21 16:39	08:29 15:39	09:01 15:35
30	08:25 16:35		05:53 19:51	05:30 20:59	04:29 22:00	04:19 22:21	05:05 21:40	06:10 20:23	07:16 18:56	07:23 16:37	08:31 15:38	09:01 15:37
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Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Zemgales iela 38 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (737)
Sunshine probability S (Average daily sunshine hours) []

Assumptions for shadow calculations

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
0.80 1.82 4.75 6.09 9.67 10.05 8.16 7.72 5.94 2.93 0.63 0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01	08:21	07:13	06:48	05:28	04:27	04:20	05:09	06:15	07:18	07:28	08:33
	15:39	16:40	17:46	19:55	21:01	22:03	22:20	21:35	20:17	18:53	16:32	15:37
2	09:00	08:19	07:11	06:45	05:25	04:25	04:21	05:11	06:17	07:21	07:30	08:35
	15:41	16:42	17:48	19:57	21:04	22:04	22:20	21:33	20:15	18:51	16:29	15:36
3	09:00	08:17	07:08	06:42	05:23	04:24	04:21	05:13	06:19	07:23	07:32	08:37
	15:42	16:45	17:50	19:59	21:06	22:06	22:19	21:31	20:12	18:48	16:27	15:35
4	08:59	08:15	07:05	06:39	05:20	04:23	04:22	05:15	06:21	07:25	07:35	08:38
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	15:45	16:49	17:55	20:04	21:10	22:09	22:18	21:26	20:06	18:42	16:23	15:33
6	08:58	08:10	07:00	06:34	05:16	04:21	04:25	05:19	06:25	07:29	07:39	08:42
	15:46	16:52	17:57	20:06	21:12	22:10	22:17	21:24	20:04	18:39	16:20	15:32
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	15:51	16:59	18:04	20:13	21:19	22:13	22:14	21:17	19:55	18:31	16:14	15:31
10	08:55	08:01	06:49	06:23	05:06	04:18	04:30	05:28	06:34	07:38	07:48	08:48
	15:53	17:01	18:06	20:15	21:21	22:14	22:13	21:15	19:52	18:28	16:12	15:30
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	15:55	17:04	18:09	20:17	21:23	22:15	22:12	21:12	19:50	18:26	16:10	15:30
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	16:02	17:13	18:17	20:26	21:32	22:19	22:06	21:02	19:38	18:15	16:02	15:29
16	08:48	07:47	06:32	06:06	04:54	04:15	04:39	05:41	06:47	07:51	08:02	08:55
	16:04	17:15	18:20	20:28	21:34	22:19	22:05	21:00	19:36	18:12	16:00	15:29
17	08:47	07:45	06:30	06:04	04:52	04:15	04:40	05:43	06:49	07:53	08:04	08:56
	16:06	17:18	18:22	20:30	21:36	22:20	22:03	20:57	19:33	18:10	15:58	15:29
18	08:46	07:42	06:27	06:01	04:50	04:15	04:42	05:45	06:51	07:56	08:06	08:56
	16:08	17:20	18:24	20:33	21:38	22:20	22:02	20:55	19:30	18:07	15:56	15:29
19	08:44	07:40	06:24	05:58	04:48	04:15	04:44	05:47	06:53	07:58	08:09	08:57
	16:10	17:22	18:26	20:35	21:40	22:21	22:00	20:52	19:27	18:04	15:54	15:29
20	08:43	07:37	06:21	05:56	04:46	04:15	04:46	05:49	06:55	08:00	08:11	08:58
	16:13	17:25	18:29	20:37	21:42	22:21	21:59	20:50	19:24	18:02	15:53	15:29
21	08:41	07:34	06:18	05:53	04:44	04:15	04:47	05:51	06:57	08:02	08:13	08:59
	16:15	17:27	18:31	20:39	21:44	22:22	21:57	20:47	19:21	17:59	15:51	15:30
22	08:40	07:32	06:16	05:50	04:42	04:15	04:49	05:53	06:59	08:05	08:15	08:59
	16:17	17:30	18:33	20:41	21:45	22:22	21:55	20:44	19:19	17:57	15:49	15:30
23	08:38	07:29	06:13	05:48	04:40	04:15	04:51	05:56	07:01	08:07	08:17	09:00
	16:19	17:32	18:35	20:44	21:47	22:22	21:53	20:42	19:16	17:54	15:48	15:31
24	08:36	07:27	06:10	05:45	04:39	04:15	04:53	05:58	07:03	08:09	08:19	09:00
	16:21	17:34	18:37	20:46	21:49	22:22	21:52	20:39	19:13	17:52	15:46	15:31
25	08:35	07:24	06:07	05:43	04:37	04:16	04:55	06:00	07:06	07:11	08:21	09:00
	16:24	17:37	18:40	20:48	21:51	22:22	21:50	20:36	19:10	16:49	15:45	15:32
26	08:33	07:21	06:04	05:40	04:35	04:16	04:57	06:02	07:08	07:14	08:23	09:01
	16:26	17:39	18:42	20:50	21:53	22:22	21:48	20:34	19:07	16:46	15:43	15:33
27	08:31	07:19	06:02	05:38	04:34	04:17	04:59	06:04	07:10	07:16	08:25	09:01
	16:28	17:41	18:44	20:53	21:55	22:22	21:46	20:31	19:05	16:44	15:42	15:34
28	08:29	07:16	05:59	05:35	04:32	04:17	05:01	06:06	07:12	07:18	08:27	09:01
	16:30	17:43	18:46	20:55	21:56	22:21	21:44	20:28	19:02	16:42	15:41	15:35
29	08:27		06:56	05:33	04:31	04:18	05:03	06:08	07:14	07:21	08:29	09:01
	16:33		19:48	20:57	21:58	22:21	21:42	20:26	18:59	16:39	15:39	15:35
30	08:25		06:53	05:30	04:29	04:19	05:05	06:10	07:16	07:23	08:31	09:01
	16:35		19:51	20:59	22:00	22:21	21:40	20:23	18:56	16:37	15:38	15:37
31	08:23		06:50		04:28		05:07	06:13		07:25		09:01
	16:37		19:53		22:01		21:38	20:20		16:34		15:38
Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Last time (hh:mm) with flicker	(WTG causing flicker last time)
	Minutes with flicker		

Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Zemgaļes iela 4 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (508)
 Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) []

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
 0.80 1.82 4.75 6.09 9.67 10.05 8.16 7.72 5.94 2.93 0.63 0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01	08:21	07:13	06:48	05:28	04:27	04:20	05:09	06:15	07:18	07:28	08:33
	15:39	16:40	17:46	19:55	21:01	22:03	22:20	21:35	20:17	18:53	16:32	15:37
2	09:00	08:19	07:11	06:45	05:25	04:25	04:21	05:11	06:17	07:21	07:30	08:35
	15:41	16:42	17:48	19:57	21:04	22:04	22:20	21:33	20:15	18:51	16:29	15:36
3	09:00	08:17	07:08	06:42	05:23	04:24	04:21	05:13	06:19	07:23	07:32	08:37
	15:42	16:44	17:50	19:59	21:06	22:06	22:19	21:31	20:12	18:48	16:27	15:35
4	08:59	08:15	07:05	06:39	05:20	04:23	04:22	05:15	06:21	07:25	07:34	08:38
	15:43	16:47	17:53	20:02	21:08	22:07	22:18	21:29	20:09	18:45	16:25	15:34
5	08:59	08:13	07:03	06:37	05:18	04:22	04:24	05:17	06:23	07:27	07:37	08:40
	15:45	16:49	17:55	20:04	21:10	22:08	22:18	21:26	20:06	18:42	16:23	15:33
6	08:58	08:10	07:00	06:34	05:16	04:21	04:25	05:19	06:25	07:29	07:39	08:42
	15:46	16:52	17:57	20:06	21:12	22:10	22:17	21:24	20:04	18:39	16:20	15:32
7	08:58	08:08	06:57	06:31	05:13	04:20	04:26	05:21	06:27	07:31	07:41	08:43
	15:48	16:54	17:59	20:08	21:15	22:11	22:16	21:22	20:01	18:37	16:18	15:32
8	08:57	08:06	06:55	06:28	05:11	04:19	04:27	05:23	06:30	07:34	07:44	08:45
	15:49	16:56	18:02	20:10	21:17	22:12	22:15	21:19	19:58	18:34	16:16	15:31
9	08:56	08:04	06:52	06:25	05:09	04:18	04:28	05:26	06:32	07:36	07:46	08:46
	15:51	16:59	18:04	20:13	21:19	22:13	22:14	21:17	19:55	18:31	16:14	15:31
10	08:55	08:01	06:49	06:23	05:06	04:18	04:30	05:28	06:34	07:38	07:48	08:48
	15:53	17:01	18:06	20:15	21:21	22:14	22:13	21:15	19:52	18:28	16:12	15:30
11	08:54	07:59	06:46	06:20	05:04	04:17	04:31	05:30	06:36	07:40	07:51	08:49
	15:55	17:04	18:09	20:17	21:23	22:15	22:12	21:12	19:50	18:26	16:10	15:30
12	08:53	07:57	06:44	06:17	05:02	04:17	04:33	05:32	06:38	07:42	07:53	08:50
	15:57	17:06	18:11	20:19	21:25	22:16	22:10	21:10	19:47	18:23	16:08	15:29
13	08:52	07:54	06:41	06:14	05:00	04:16	04:34	05:34	06:40	07:44	07:55	08:51
	15:58	17:08	18:13	20:22	21:27	22:17	22:09	21:07	19:44	18:20	16:05	15:29
14	08:51	07:52	06:38	06:12	04:58	04:16	04:36	05:36	06:42	07:47	07:57	08:53
	16:00	17:11	18:15	20:24	21:29	22:18	22:08	21:05	19:41	18:18	16:04	15:29
15	08:50	07:49	06:35	06:09	04:56	04:15	04:37	05:38	06:44	07:49	08:00	08:54
	16:02	17:13	18:17	20:26	21:32	22:19	22:06	21:02	19:38	18:15	16:02	15:29
16	08:48	07:47	06:32	06:06	04:54	04:15	04:39	05:41	06:46	07:51	08:02	08:55
	16:04	17:15	18:20	20:28	21:34	22:19	22:05	21:00	19:35	18:12	16:00	15:29
17	08:47	07:44	06:30	06:04	04:52	04:15	04:40	05:43	06:49	07:53	08:04	08:56
	16:06	17:18	18:22	20:30	21:36	22:20	22:03	20:57	19:33	18:10	15:58	15:29
18	08:46	07:42	06:27	06:01	04:50	04:15	04:42	05:45	06:51	07:56	08:06	08:56
	16:08	17:20	18:24	20:33	21:38	22:20	22:02	20:55	19:30	18:07	15:56	15:29
19	08:44	07:39	06:24	05:58	04:48	04:15	04:44	05:47	06:53	07:58	08:09	08:57
	16:10	17:22	18:26	20:35	21:40	22:21	22:00	20:52	19:27	18:04	15:54	15:29
20	08:43	07:37	06:21	05:56	04:46	04:15	04:46	05:49	06:55	08:00	08:11	08:58
	16:13	17:25	18:29	20:37	21:42	22:21	21:59	20:50	19:24	18:02	15:53	15:29
21	08:41	07:34	06:18	05:53	04:44	04:15	04:47	05:51	06:57	08:02	08:13	08:59
	16:15	17:27	18:31	20:39	21:44	22:21	21:57	20:47	19:21	17:59	15:51	15:30
22	08:40	07:32	06:16	05:50	04:42	04:15	04:49	05:53	06:59	08:05	08:15	08:59
	16:17	17:29	18:33	20:41	21:45	22:22	21:55	20:44	19:19	17:57	15:49	15:30
23	08:38	07:29	06:13	05:48	04:40	04:15	04:51	05:56	07:01	08:07	08:17	09:00
	16:19	17:32	18:35	20:44	21:47	22:22	21:53	20:42	19:16	17:54	15:48	15:31
24	08:36	07:27	06:10	05:45	04:39	04:15	04:53	05:58	07:03	08:09	08:19	09:00
	16:21	17:34	18:37	20:46	21:49	22:22	21:52	20:39	19:13	17:51	15:46	15:31
25	08:34	07:24	06:07	05:43	04:37	04:16	04:55	06:00	07:06	07:11	08:21	09:00
	16:24	17:36	18:40	20:48	21:51	22:22	21:50	20:36	19:10	16:49	15:45	15:32
26	08:33	07:21	06:04	05:40	04:35	04:16	04:57	06:02	07:08	07:14	08:23	09:01
	16:26	17:39	18:42	20:50	21:53	22:22	21:48	20:34	19:07	16:46	15:43	15:33
27	08:31	07:19	06:02	05:38	04:34	04:17	04:59	06:04	07:10	07:16	08:25	09:01
	16:28	17:41	18:44	20:53	21:55	22:22	21:46	20:31	19:05	16:44	15:42	15:34
28	08:29	07:16	05:59	05:35	04:32	04:17	05:01	06:06	07:12	07:18	08:27	09:01
	16:30	17:43	18:46	20:55	21:56	22:21	21:44	20:28	19:02	16:41	15:41	15:35
29	08:27		06:56	05:32	04:31	04:18	05:03	06:08	07:14	07:21	08:29	09:01
	16:33		19:48	20:57	21:58	22:21	21:42	20:26	18:59	16:39	15:39	15:35
30	08:25		06:53	05:30	04:29	04:19	05:05	06:10	07:16	07:23	08:31	09:01
	16:35		19:51	20:59	22:00	22:21	21:40	20:23	18:56	16:37	15:38	15:37
31	08:23		06:50		04:28		05:07	06:13		07:25		09:01
	16:37		19:53		22:01		21:38	20:20		16:34		15:38
Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Last time (hh:mm) with flicker	(WTG causing flicker last time)
	Minutes with flicker		

Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Zemgales iela 40 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (700)
Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:28 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
2	09:00 15:41	08:19 16:42	07:11 17:48	06:45 19:57	05:25 21:04	04:25 22:04	04:21 22:20	05:11 21:33	06:17 20:15	07:21 18:51	07:30 16:29	08:35 15:36
3	09:00 15:42	08:17 16:45	07:08 17:50	06:42 19:59	05:23 21:06	04:24 22:06	04:21 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:37 15:35
4	08:59 15:43	08:15 16:47	07:05 17:53	06:39 20:02	05:20 21:08	04:23 22:07	04:22 22:18	05:15 21:29	06:21 20:09	07:25 18:45	07:35 16:25	08:38 15:34
5	08:59 15:45	08:13 16:49	07:03 17:55	06:37 20:04	05:18 21:10	04:22 22:09	04:24 22:18	05:17 21:26	06:23 20:06	07:27 18:42	07:37 16:23	08:40 15:33
6	08:58 15:46	08:10 16:52	07:00 17:57	06:34 20:06	05:16 21:12	04:21 22:10	04:25 22:17	05:19 21:24	06:25 20:04	07:29 18:39	07:39 16:20	08:42 15:32
7	08:58 15:48	08:08 16:54	06:57 17:59	06:31 20:08	05:13 21:15	04:20 22:11	04:26 22:16	05:21 21:22	06:27 20:01	07:31 18:37	07:41 16:18	08:43 15:32
8	08:57 15:49	08:06 16:56	06:55 18:02	06:28 20:11	05:11 21:17	04:19 22:12	04:27 22:15	05:24 21:20	06:30 19:58	07:34 18:34	07:44 16:16	08:45 15:31
9	08:56 15:51	08:04 16:59	06:52 18:04	06:25 20:13	05:09 21:19	04:18 22:13	04:28 22:14	05:26 21:17	06:32 19:55	07:36 18:31	07:46 16:14	08:46 15:31
10	08:55 15:53	08:01 17:01	06:49 18:06	06:23 20:15	05:06 21:21	04:18 22:14	04:30 22:13	05:28 21:15	06:34 19:52	07:38 18:28	07:48 16:12	08:48 15:30
11	08:54 15:55	07:59 17:04	06:46 18:09	06:20 20:17	05:04 21:23	04:17 22:15	04:31 22:12	05:30 21:12	06:36 19:50	07:40 18:26	07:51 16:10	08:49 15:30
12	08:53 15:57	07:57 17:06	06:44 18:11	06:17 20:19	05:02 21:25	04:17 22:16	04:33 22:10	05:32 21:10	06:38 19:47	07:42 18:23	07:53 16:08	08:50 15:29
13	08:52 15:58	07:54 17:08	06:41 18:13	06:15 20:22	05:00 21:27	04:16 22:17	04:34 22:09	05:34 21:07	06:40 19:44	07:45 18:20	07:55 16:06	08:51 15:29
14	08:51 16:00	07:52 17:11	06:38 18:15	06:12 20:24	04:58 21:29	04:16 22:18	04:36 22:08	05:36 21:05	06:42 19:41	07:47 18:18	07:57 16:04	08:53 15:29
15	08:50 16:02	07:49 17:13	06:35 18:17	06:09 20:26	04:56 21:32	04:15 22:19	04:37 22:06	05:38 21:02	06:44 19:38	07:49 18:15	08:00 16:02	08:54 15:29
16	08:48 16:04	07:47 17:15	06:32 18:20	06:06 20:28	04:54 21:34	04:15 22:19	04:39 22:05	05:41 21:00	06:47 19:36	07:51 18:12	08:02 16:00	08:55 15:29
17	08:47 16:06	07:45 17:18	06:30 18:22	06:04 20:30	04:52 21:36	04:15 22:20	04:40 22:03	05:43 20:57	06:49 19:33	07:53 18:10	08:04 15:58	08:56 15:29
18	08:46 16:08	07:42 17:20	06:27 18:24	06:01 20:33	04:50 21:38	04:15 22:20	04:42 22:02	05:45 20:55	06:51 19:30	07:56 18:07	08:06 15:56	08:56 15:29
19	08:44 16:10	07:40 17:22	06:24 18:26	05:58 20:35	04:48 21:40	04:15 22:21	04:44 22:00	05:47 20:52	06:53 19:27	07:58 18:04	08:09 15:54	08:57 15:29
20	08:43 16:13	07:37 17:25	06:21 18:29	05:56 20:37	04:46 21:42	04:15 22:21	04:46 21:59	05:49 20:50	06:55 19:24	08:00 18:02	08:11 15:53	08:58 15:29
21	08:41 16:15	07:34 17:27	06:18 18:31	05:53 20:39	04:44 21:44	04:15 22:22	04:47 21:57	05:51 20:47	06:57 19:21	08:02 17:59	08:13 15:51	08:59 15:30
22	08:40 16:17	07:32 17:30	06:16 18:33	05:50 20:41	04:42 21:45	04:15 22:22	04:49 21:55	05:53 20:44	06:59 19:19	08:05 17:57	08:15 15:49	08:59 15:30
23	08:38 16:19	07:29 17:32	06:13 18:35	05:48 20:44	04:40 21:47	04:15 22:22	04:51 21:53	05:56 20:42	07:01 19:16	08:07 17:54	08:17 15:48	09:00 15:31
24	08:36 16:21	07:27 17:34	06:10 18:37	05:45 20:46	04:39 21:49	04:15 22:22	04:53 21:52	05:58 20:39	07:03 19:13	08:09 17:52	08:19 15:46	09:00 15:31
25	08:35 16:24	07:24 17:37	06:07 18:40	05:43 20:48	04:37 21:51	04:16 22:22	04:55 21:50	06:00 20:36	07:06 19:10	07:11 16:49	08:21 15:45	09:00 15:32
26	08:33 16:26	07:21 17:39	06:04 18:42	05:40 20:50	04:35 21:53	04:16 22:22	04:57 21:48	06:02 20:34	07:08 19:07	07:14 16:46	08:23 15:43	09:01 15:33
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28	08:29 16:30	07:16 17:43	05:59 18:46	05:35 20:55	04:32 21:56	04:17 22:21	05:01 21:44	06:06 20:28	07:12 19:02	07:18 16:42	08:27 15:41	09:01 15:35
29	08:27 16:33		05:56 19:48	05:33 20:57	04:31 21:58	04:18 22:21	05:03 21:42	06:08 20:26	07:14 18:59	07:21 16:39	08:29 15:39	09:01 15:35
30	08:25 16:35		05:53 19:51	05:30 20:59	04:29 22:00	04:19 22:21	05:05 21:40	06:10 20:23	07:16 18:56	07:23 16:37	08:31 15:38	09:01 15:37
31	08:23 16:37		05:50 19:53		04:28 22:01		05:07 21:38	06:13 20:20		07:25 16:34		09:01 15:38
Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Zemgales iela 56 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (680)

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:28 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
2	09:00 15:40	08:19 16:42	07:11 17:48	06:45 19:57	05:25 21:04	04:25 22:04	04:21 22:20	05:11 21:33	06:17 20:15	07:21 18:51	07:30 16:29	08:35 15:36
3	09:00 15:42	08:17 16:45	07:08 17:50	06:42 19:59	05:23 21:06	04:24 22:06	04:21 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:37 15:35
4	08:59 15:43	08:15 16:47	07:05 17:53	06:39 20:02	05:20 21:08	04:23 22:07	04:22 22:18	05:15 21:29	06:21 20:09	07:25 18:45	07:35 16:25	08:38 15:34
5	08:59 15:45	08:13 16:49	07:03 17:55	06:37 20:04	05:18 21:10	04:22 22:09	04:24 22:18	05:17 21:27	06:23 20:06	07:27 18:42	07:37 16:23	08:40 15:33
6	08:58 15:46	08:10 16:52	07:00 17:57	06:34 20:06	05:16 21:12	04:21 22:10	04:25 22:17	05:19 21:24	06:25 20:04	07:29 18:39	07:39 16:20	08:42 15:32
7	08:58 15:48	08:08 16:54	06:57 17:59	06:31 20:08	05:13 21:15	04:20 22:11	04:26 22:16	05:21 21:22	06:27 20:01	07:31 18:37	07:41 16:18	08:43 15:32
8	08:57 15:49	08:06 16:56	06:55 18:02	06:28 20:11	05:11 21:17	04:19 22:12	04:27 22:15	05:24 21:20	06:30 19:58	07:34 18:34	07:44 16:16	08:45 15:31
9	08:56 15:51	08:04 16:59	06:52 18:04	06:25 20:13	05:09 21:19	04:18 22:13	04:28 22:14	05:26 21:17	06:32 19:55	07:36 18:31	07:46 16:14	08:46 15:31
10	08:55 15:53	08:01 17:01	06:49 18:06	06:23 20:15	05:06 21:21	04:18 22:14	04:30 22:13	05:28 21:15	06:34 19:52	07:38 18:28	07:48 16:12	08:48 15:30
11	08:54 15:55	07:59 17:04	06:46 18:09	06:20 20:17	05:04 21:23	04:17 22:15	04:31 22:12	05:30 21:12	06:36 19:50	07:40 18:26	07:51 16:10	08:49 15:30
12	08:53 15:57	07:57 17:06	06:44 18:11	06:17 20:19	05:02 21:25	04:17 22:16	04:33 22:10	05:32 21:10	06:38 19:47	07:42 18:23	07:53 16:08	08:50 15:29
13	08:52 15:58	07:54 17:08	06:41 18:13	06:15 20:22	05:00 21:27	04:16 22:17	04:34 22:09	05:34 21:07	06:40 19:44	07:45 18:20	07:55 16:06	08:51 15:29
14	08:51 16:00	07:52 17:11	06:38 18:15	06:12 20:24	04:58 21:30	04:16 22:18	04:36 22:08	05:36 21:05	06:42 19:41	07:47 18:18	07:57 16:04	08:53 15:29
15	08:50 16:02	07:49 17:13	06:35 18:17	06:09 20:26	04:56 21:32	04:15 22:19	04:37 22:06	05:38 21:02	06:44 19:38	07:49 18:15	08:00 16:02	08:54 15:29
16	08:48 16:04	07:47 17:15	06:32 18:20	06:06 20:28	04:54 21:34	04:15 22:19	04:39 22:05	05:41 21:00	06:47 19:36	07:51 18:12	08:02 16:00	08:55 15:29
17	08:47 16:06	07:45 17:18	06:30 18:22	06:04 20:30	04:52 21:36	04:15 22:20	04:40 22:04	05:43 20:57	06:49 19:33	07:53 18:10	08:04 15:58	08:56 15:29
18	08:46 16:08	07:42 17:20	06:27 18:24	06:01 20:33	04:50 21:38	04:15 22:20	04:42 22:02	05:45 20:55	06:51 19:30	07:56 18:07	08:06 15:56	08:57 15:29
19	08:44 16:10	07:40 17:22	06:24 18:26	05:58 20:35	04:48 21:40	04:15 22:21	04:44 22:00	05:47 20:52	06:53 19:27	07:58 18:04	08:09 15:54	08:57 15:29
20	08:43 16:13	07:37 17:25	06:21 18:29	05:56 20:37	04:46 21:42	04:15 22:21	04:46 21:59	05:49 20:50	06:55 19:24	08:00 18:02	08:11 15:53	08:58 15:29
21	08:41 16:15	07:34 17:27	06:18 18:31	05:53 20:39	04:44 21:44	04:15 22:22	04:47 21:57	05:51 20:47	06:57 19:21	08:02 17:59	08:13 15:51	08:59 15:30
22	08:40 16:17	07:32 17:30	06:16 18:33	05:50 20:41	04:42 21:46	04:15 22:22	04:49 21:55	05:53 20:44	06:59 19:19	08:05 17:57	08:15 15:49	08:59 15:30
23	08:38 16:19	07:29 17:32	06:13 18:35	05:48 20:44	04:40 21:47	04:15 22:22	04:51 21:53	05:56 20:42	07:01 19:16	08:07 17:54	08:17 15:48	09:00 15:31
24	08:36 16:21	07:27 17:34	06:10 18:37	05:45 20:46	04:39 21:49	04:15 22:22	04:53 21:52	05:58 20:39	07:03 19:13	08:09 17:52	08:19 15:46	09:00 15:31
25	08:35 16:24	07:24 17:37	06:07 18:40	05:43 20:48	04:37 21:51	04:16 22:22	04:55 21:50	06:00 20:36	07:06 19:10	07:12 16:49	08:21 15:45	09:00 15:32
26	08:33 16:26	07:21 17:39	06:04 18:42	05:40 20:50	04:35 21:53	04:16 22:22	04:57 21:48	06:02 20:34	07:08 19:07	07:14 16:46	08:23 15:43	09:01 15:33
27	08:31 16:28	07:19 17:41	06:02 18:44	05:38 20:53	04:34 21:55	04:17 22:22	04:59 21:46	06:04 20:31	07:10 19:05	07:16 16:44	08:25 15:42	09:01 15:34
28	08:29 16:30	07:16 17:43	05:59 18:46	05:35 20:55	04:32 21:56	04:17 22:21	05:01 21:44	06:06 20:28	07:12 19:02	07:18 16:42	08:27 15:41	09:01 15:34
29	08:27 16:33		05:56 19:48	05:33 20:57	04:31 21:58	04:18 22:21	05:03 21:42	06:08 20:26	07:14 18:59	07:21 16:39	08:29 15:39	09:01 15:35
30	08:25 16:35		05:53 19:51	05:30 20:59	04:29 22:00	04:19 22:21	05:05 21:40	06:10 20:23	07:16 18:56	07:23 16:37	08:31 15:38	09:01 15:37
31	08:23 16:37		05:50 19:53		04:28 22:01		05:07 21:38	06:13 20:20		07:25 16:34		09:01 15:38
Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Zemgales iela 56A - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (674)

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:14 17:46	06:48 19:55	05:28 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
2	09:00 15:40	08:19 16:42	07:11 17:48	06:45 19:57	05:25 21:04	04:25 22:04	04:21 22:20	05:11 21:33	06:17 20:15	07:21 18:51	07:30 16:29	08:35 15:36
3	09:00 15:42	08:17 16:45	07:08 17:50	06:42 19:59	05:23 21:06	04:24 22:06	04:21 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:37 15:35
4	08:59 15:43	08:15 16:47	07:05 17:53	06:39 20:02	05:20 21:08	04:23 22:07	04:22 22:18	05:15 21:29	06:21 20:09	07:25 18:45	07:35 16:25	08:38 15:34
5	08:59 15:45	08:13 16:49	07:03 17:55	06:37 20:04	05:18 21:10	04:22 22:09	04:24 22:18	05:17 21:27	06:23 20:06	07:27 18:42	07:37 16:23	08:40 15:33
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7	08:58 15:48	08:08 16:54	06:57 17:59	06:31 20:08	05:13 21:15	04:20 22:11	04:26 22:16	05:21 21:22	06:27 20:01	07:31 18:37	07:41 16:18	08:43 15:32
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11	08:54 15:55	07:59 17:04	06:46 18:09	06:20 20:17	05:04 21:23	04:17 22:15	04:31 22:12	05:30 21:12	06:36 19:50	07:40 18:26	07:51 16:10	08:49 15:30
12	08:53 15:57	07:57 17:06	06:44 18:11	06:17 20:19	05:02 21:25	04:17 22:16	04:33 22:10	05:32 21:10	06:38 19:47	07:42 18:23	07:53 16:08	08:50 15:29
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16	08:48 16:04	07:47 17:15	06:32 18:20	06:06 20:28	04:54 21:34	04:15 22:19	04:39 22:05	05:41 21:00	06:47 19:36	07:51 18:12	08:02 16:00	08:55 15:29
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19	08:44 16:10	07:40 17:22	06:24 18:26	05:58 20:35	04:48 21:40	04:15 22:21	04:44 22:00	05:47 20:52	06:53 19:27	07:58 18:04	08:09 15:54	08:57 15:29
20	08:43 16:13	07:37 17:25	06:21 18:29	05:56 20:37	04:46 21:42	04:15 22:21	04:46 21:59	05:49 20:50	06:55 19:24	08:00 18:02	08:11 15:53	08:58 15:29
21	08:41 16:15	07:34 17:27	06:18 18:31	05:53 20:39	04:44 21:44	04:15 22:22	04:47 21:57	05:51 20:47	06:57 19:21	08:02 17:59	08:13 15:51	08:59 15:30
22	08:40 16:17	07:32 17:30	06:16 18:33	05:50 20:42	04:42 21:46	04:15 22:22	04:49 21:55	05:53 20:44	06:59 19:19	08:05 17:57	08:15 15:49	08:59 15:30
23	08:38 16:19	07:29 17:32	06:13 18:35	05:48 20:44	04:40 21:47	04:15 22:22	04:51 21:53	05:56 20:42	07:01 19:16	08:07 17:54	08:17 15:48	09:00 15:31
24	08:36 16:21	07:27 17:34	06:10 18:37	05:45 20:46	04:39 21:49	04:15 22:22	04:53 21:52	05:58 20:39	07:03 19:13	08:09 17:52	08:19 15:46	09:00 15:31
25	08:35 16:24	07:24 17:37	06:07 18:40	05:43 20:48	04:37 21:51	04:16 22:22	04:55 21:50	06:00 20:36	07:06 19:10	07:12 16:49	08:21 15:45	09:00 15:32
26	08:33 16:26	07:21 17:39	06:04 18:42	05:40 20:50	04:35 21:53	04:16 22:22	04:57 21:48	06:02 20:34	07:08 19:07	07:14 16:46	08:23 15:43	09:01 15:33
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28	08:29 16:30	07:16 17:43	05:59 18:46	05:35 20:55	04:32 21:56	04:17 22:21	05:01 21:44	06:06 20:28	07:12 19:02	07:18 16:42	08:27 15:41	09:01 15:34
29	08:27 16:33		05:56 19:48	05:33 20:57	04:31 21:58	04:18 22:21	05:03 21:42	06:08 20:26	07:14 18:59	07:21 16:39	08:29 15:39	09:01 15:35
30	08:25 16:35		05:53 19:51	05:30 20:59	04:29 22:00	04:19 22:21	05:05 21:40	06:10 20:23	07:16 18:56	07:23 16:37	08:31 15:38	09:01 15:37
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Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Zemgales iela 58 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (672)
 Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:14 17:46	06:48 19:55	05:28 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
2	09:00 15:40	08:19 16:42	07:11 17:48	06:45 19:57	05:25 21:04	04:25 22:04	04:20 22:20	05:11 21:33	06:17 20:15	07:21 18:51	07:30 16:29	08:35 15:36
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5	08:59 15:45	08:13 16:49	07:03 17:55	06:37 20:04	05:18 21:10	04:22 22:09	04:24 22:18	05:17 21:27	06:23 20:06	07:27 18:42	07:37 16:23	08:40 15:33
6	08:58 15:46	08:10 16:52	07:00 17:57	06:34 20:06	05:16 21:12	04:21 22:10	04:25 22:17	05:19 21:24	06:25 20:04	07:29 18:39	07:39 16:20	08:42 15:32
7	08:58 15:48	08:08 16:54	06:57 17:59	06:31 20:08	05:13 21:15	04:20 22:11	04:26 22:16	05:21 21:22	06:27 20:01	07:31 18:37	07:41 16:18	08:43 15:32
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9	08:56 15:51	08:04 16:59	06:52 18:04	06:25 20:13	05:09 21:19	04:18 22:13	04:28 22:14	05:26 21:17	06:32 19:55	07:36 18:31	07:46 16:14	08:46 15:31
10	08:55 15:53	08:01 17:01	06:49 18:06	06:23 20:15	05:06 21:21	04:18 22:14	04:30 22:13	05:28 21:15	06:34 19:52	07:38 18:28	07:48 16:12	08:48 15:30
11	08:54 15:55	07:59 17:04	06:46 18:09	06:20 20:17	05:04 21:23	04:17 22:15	04:31 22:12	05:30 21:12	06:36 19:50	07:40 18:26	07:51 16:10	08:49 15:30
12	08:53 15:57	07:57 17:06	06:44 18:11	06:17 20:19	05:02 21:25	04:17 22:16	04:33 22:10	05:32 21:10	06:38 19:47	07:42 18:23	07:53 16:08	08:50 15:29
13	08:52 15:58	07:54 17:08	06:41 18:13	06:15 20:22	05:00 21:27	04:16 22:17	04:34 22:09	05:34 21:07	06:40 19:44	07:45 18:20	07:55 16:06	08:51 15:29
14	08:51 16:00	07:52 17:11	06:38 18:15	06:12 20:24	04:58 21:30	04:16 22:18	04:36 22:08	05:36 21:05	06:42 19:41	07:47 18:18	07:57 16:04	08:53 15:29
15	08:50 16:02	07:49 17:13	06:35 18:17	06:09 20:26	04:56 21:32	04:15 22:19	04:37 22:06	05:38 21:02	06:44 19:38	07:49 18:15	08:00 16:02	08:54 15:29
16	08:48 16:04	07:47 17:15	06:32 18:20	06:06 20:28	04:54 21:34	04:15 22:19	04:39 22:05	05:41 21:00	06:47 19:36	07:51 18:12	08:02 16:00	08:55 15:29
17	08:47 16:06	07:45 17:18	06:30 18:22	06:04 20:30	04:52 21:36	04:15 22:20	04:40 22:04	05:43 20:57	06:49 19:33	07:53 18:10	08:04 15:58	08:56 15:29
18	08:46 16:08	07:42 17:20	06:27 18:24	06:01 20:33	04:50 21:38	04:15 22:20	04:42 22:02	05:45 20:55	06:51 19:30	07:56 18:07	08:06 15:56	08:57 15:29
19	08:44 16:10	07:40 17:22	06:24 18:26	05:58 20:35	04:48 21:40	04:15 22:21	04:44 22:00	05:47 20:52	06:53 19:27	07:58 18:04	08:09 15:54	08:57 15:29
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30	08:25 16:35		05:53 19:51	05:30 20:59	04:29 22:00	04:19 22:21	05:05 21:40	06:10 20:23	07:16 18:56	07:23 16:37	08:31 15:38	09:01 15:37
31	08:23 16:37		05:50 19:53		04:28 22:01		05:07 21:38	06:13 20:20		07:25 16:34		09:01 15:38
Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
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Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Zemgaļes iela 6 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (512)
 Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) []

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
 0.80 1.82 4.75 6.09 9.67 10.05 8.16 7.72 5.94 2.93 0.63 0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:28 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
2	09:00 15:41	08:19 16:42	07:11 17:48	06:45 19:57	05:25 21:04	04:25 22:04	04:21 22:20	05:11 21:33	06:17 20:15	07:21 18:51	07:30 16:29	08:35 15:36
3	09:00 15:42	08:17 16:44	07:08 17:50	06:42 19:59	05:23 21:06	04:24 22:06	04:21 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:37 15:35
4	08:59 15:43	08:15 16:47	07:05 17:53	06:39 20:02	05:20 21:08	04:23 22:07	04:22 22:18	05:15 21:29	06:21 20:09	07:25 18:45	07:34 16:25	08:38 15:34
5	08:59 15:45	08:13 16:49	07:03 17:55	06:37 20:04	05:18 21:10	04:22 22:08	04:24 22:18	05:17 21:26	06:23 20:06	07:27 18:42	07:37 16:23	08:40 15:33
6	08:58 15:46	08:10 16:52	07:00 17:57	06:34 20:06	05:16 21:12	04:21 22:10	04:25 22:17	05:19 21:24	06:25 20:04	07:29 18:39	07:39 16:20	08:42 15:32
7	08:58 15:48	08:08 16:54	06:57 17:59	06:31 20:08	05:13 21:15	04:20 22:11	04:26 22:16	05:21 21:22	06:27 20:01	07:31 18:37	07:41 16:18	08:43 15:32
8	08:57 15:49	08:06 16:56	06:55 18:02	06:28 20:10	05:11 21:17	04:19 22:12	04:27 22:15	05:23 21:19	06:30 19:58	07:34 18:34	07:44 16:16	08:45 15:31
9	08:56 15:51	08:04 16:59	06:52 18:04	06:25 20:13	05:09 21:19	04:18 22:13	04:28 22:14	05:26 21:17	06:32 19:55	07:36 18:31	07:46 16:14	08:46 15:31
10	08:55 15:53	08:01 17:01	06:49 18:06	06:23 20:15	05:06 21:21	04:18 22:14	04:30 22:13	05:28 21:15	06:34 19:52	07:38 18:28	07:48 16:12	08:48 15:30
11	08:54 15:55	07:59 17:04	06:46 18:09	06:20 20:17	05:04 21:23	04:17 22:15	04:31 22:12	05:30 21:12	06:36 19:50	07:40 18:26	07:51 16:10	08:49 15:30
12	08:53 15:57	07:57 17:06	06:44 18:11	06:17 20:19	05:02 21:25	04:17 22:16	04:33 22:10	05:32 21:19	06:38 19:47	07:42 18:23	07:53 16:08	08:50 15:29
13	08:52 15:58	07:54 17:08	06:41 18:13	06:15 20:22	05:00 21:27	04:16 22:17	04:34 22:09	05:34 21:07	06:40 19:44	07:45 18:20	07:55 16:05	08:51 15:29
14	08:51 16:00	07:52 17:11	06:38 18:15	06:12 20:24	04:58 21:29	04:16 22:18	04:36 22:08	05:36 21:05	06:42 19:41	07:47 18:18	07:57 16:04	08:53 15:29
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18	08:46 16:08	07:42 17:20	06:27 18:24	06:01 20:33	04:50 21:38	04:15 22:20	04:42 22:02	05:45 20:55	06:51 19:30	07:56 18:07	08:06 15:56	08:56 15:29
19	08:44 16:10	07:39 17:22	06:24 18:26	05:58 20:35	04:48 21:40	04:15 22:21	04:44 22:00	05:47 20:52	06:53 19:27	07:58 18:04	08:09 15:54	08:57 15:29
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28	08:29 16:30	07:16 17:43	05:59 18:46	05:35 20:55	04:32 21:56	04:17 22:21	05:01 21:44	06:06 20:28	07:12 19:02	07:18 16:41	08:27 15:41	09:01 15:35
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31	08:23 16:37		05:50 19:53		04:28 22:01		05:07 21:38	06:13 20:20		07:25 16:34		09:01 15:38
Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Last time (hh:mm) with flicker	(WTG causing flicker last time)
	Minutes with flicker		

Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Zemgales iela 60 - Shadow Receptor: 1.0 x 1.0 Azimuth: 3.1° Slope: 90.0° (671)

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:14 17:46	06:48 19:55	05:28 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
2	09:00 15:40	08:19 16:42	07:11 17:48	06:45 19:57	05:25 21:04	04:25 22:04	04:20 22:20	05:11 21:33	06:17 20:15	07:21 18:51	07:30 16:29	08:35 15:36
3	09:00 15:42	08:17 16:44	07:08 17:50	06:42 19:59	05:23 21:06	04:24 22:06	04:21 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:37 15:35
4	08:59 15:43	08:15 16:47	07:05 17:53	06:39 20:02	05:20 21:08	04:23 22:07	04:22 22:18	05:15 21:29	06:21 20:09	07:25 18:45	07:35 16:25	08:38 15:34
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Wind dir. red.												
Total reduction												
Total, real												

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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Zemgales iela 6A - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (561)
 Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:28 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
2	09:00 15:41	08:19 16:42	07:11 17:48	06:45 19:57	05:25 21:04	04:25 22:04	04:21 22:20	05:11 21:33	06:17 20:15	07:21 18:51	07:30 16:29	08:35 15:36
3	09:00 15:42	08:17 16:44	07:08 17:50	06:42 19:59	05:23 21:06	04:24 22:06	04:21 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:37 15:35
4	08:59 15:43	08:15 16:47	07:05 17:53	06:39 20:02	05:20 21:08	04:23 22:07	04:22 22:18	05:15 21:29	06:21 20:09	07:25 18:45	07:34 16:25	08:38 15:34
5	08:59 15:45	08:13 16:49	07:03 17:55	06:37 20:04	05:18 21:10	04:22 22:08	04:24 22:18	05:17 21:26	06:23 20:06	07:27 18:42	07:37 16:23	08:40 15:33
6	08:58 15:46	08:10 16:52	07:00 17:57	06:34 20:06	05:16 21:12	04:21 22:10	04:25 22:17	05:19 21:24	06:25 20:04	07:29 18:39	07:39 16:20	08:42 15:32
7	08:58 15:48	08:08 16:54	06:57 17:59	06:31 20:08	05:13 21:15	04:20 22:11	04:26 22:16	05:21 21:22	06:27 20:01	07:31 18:37	07:41 16:18	08:43 15:32
8	08:57 15:49	08:06 16:56	06:55 18:02	06:28 20:10	05:11 21:17	04:19 22:12	04:27 22:15	05:23 21:19	06:30 19:58	07:34 18:34	07:44 16:16	08:45 15:31
9	08:56 15:51	08:04 16:59	06:52 18:04	06:25 20:13	05:09 21:19	04:18 22:13	04:28 22:14	05:26 21:17	06:32 19:55	07:36 18:31	07:46 16:14	08:46 15:31
10	08:55 15:53	08:01 17:01	06:49 18:06	06:23 20:15	05:06 21:21	04:18 22:14	04:30 22:13	05:28 21:15	06:34 19:52	07:38 18:28	07:48 16:12	08:48 15:30
11	08:54 15:55	07:59 17:04	06:46 18:09	06:20 20:17	05:04 21:23	04:17 22:15	04:31 22:12	05:30 21:12	06:36 19:50	07:40 18:26	07:51 16:10	08:49 15:30
12	08:53 15:57	07:57 17:06	06:44 18:11	06:17 20:19	05:02 21:25	04:17 22:16	04:33 22:10	05:32 21:19	06:38 19:47	07:42 18:23	07:53 16:08	08:50 15:29
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14	08:51 16:00	07:52 17:11	06:38 18:15	06:12 20:24	04:58 21:29	04:16 22:18	04:36 22:08	05:36 21:05	06:42 19:41	07:47 18:18	07:57 16:04	08:53 15:29
15	08:50 16:02	07:49 17:13	06:35 18:17	06:09 20:26	04:56 21:32	04:15 22:19	04:37 22:06	05:38 21:02	06:44 19:38	07:49 18:15	08:00 16:02	08:54 15:29
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17	08:47 16:06	07:44 17:18	06:30 18:22	06:04 20:30	04:52 21:36	04:15 22:20	04:40 22:03	05:43 20:57	06:49 19:33	07:53 18:10	08:04 15:58	08:56 15:29
18	08:46 16:08	07:42 17:20	06:27 18:24	06:01 20:33	04:50 21:38	04:15 22:20	04:42 22:02	05:45 20:55	06:51 19:30	07:56 18:07	08:06 15:56	08:56 15:29
19	08:44 16:10	07:39 17:22	06:24 18:26	05:58 20:35	04:48 21:40	04:15 22:21	04:44 22:00	05:47 20:52	06:53 19:27	07:58 18:04	08:09 15:54	08:57 15:29
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31	08:23 16:37		06:50 19:53		04:28 22:01		05:07 21:38	06:13 20:20		07:25 16:34		09:01 15:38
Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Zemgailes iela 7 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (539)
 Sunshine probability S (Average daily sunshine hours) []

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
 0.80 1.82 4.75 6.09 9.67 10.05 8.16 7.72 5.94 2.93 0.63 0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:28 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
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31	08:23 16:37		06:50 19:53		04:28 22:01		05:07 21:38	06:13 20:20		07:25 16:34		09:01 15:38
Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Last time (hh:mm) with flicker	(WTG causing flicker last time)
	Minutes with flicker		

Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Zemgaļes iela 8 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (555)
 Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) []

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
 0.80 1.82 4.75 6.09 9.67 10.05 8.16 7.72 5.94 2.93 0.63 0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:28 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
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19	08:44 16:10	07:39 17:22	06:24 18:26	05:58 20:35	04:48 21:40	04:15 22:21	04:44 22:00	05:47 20:52	06:53 19:27	07:58 18:04	08:09 15:54	08:57 15:29
20	08:43 16:13	07:37 17:25	06:21 18:29	05:56 20:37	04:46 21:42	04:15 22:21	04:46 21:59	05:49 20:50	06:55 19:24	08:00 18:02	08:11 15:53	08:58 15:29
21	08:41 16:15	07:34 17:27	06:18 18:31	05:53 20:39	04:44 21:44	04:15 22:21	04:47 21:57	05:51 20:47	06:57 19:21	08:02 17:59	08:13 15:51	08:59 15:30
22	08:40 16:17	07:32 17:30	06:16 18:33	05:50 20:41	04:42 21:45	04:15 22:22	04:49 21:55	05:53 20:44	06:59 19:19	08:05 17:57	08:15 15:49	08:59 15:30
23	08:38 16:19	07:29 17:32	06:13 18:35	05:48 20:44	04:40 21:47	04:15 22:22	04:51 21:53	05:56 20:42	07:01 19:16	08:07 17:54	08:17 15:48	09:00 15:31
24	08:36 16:21	07:27 17:34	06:10 18:37	05:45 20:46	04:39 21:49	04:15 22:22	04:53 21:52	05:58 20:39	07:03 19:13	08:09 17:51	08:19 15:46	09:00 15:31
25	08:34 16:24	07:24 17:36	06:07 18:40	05:43 20:48	04:37 21:51	04:16 22:22	04:55 21:50	06:00 20:36	07:06 19:10	07:11 16:49	08:21 15:45	09:00 15:32
26	08:33 16:26	07:21 17:39	06:04 18:42	05:40 20:50	04:35 21:53	04:16 22:22	04:57 21:48	06:02 20:34	07:08 19:07	07:14 16:46	08:23 15:43	09:01 15:33
27	08:31 16:28	07:19 17:41	06:02 18:44	05:38 20:53	04:34 21:55	04:17 22:22	04:59 21:46	06:04 20:31	07:10 19:05	07:16 16:44	08:25 15:42	09:01 15:34
28	08:29 16:30	07:16 17:43	05:59 18:46	05:35 20:55	04:32 21:56	04:17 22:21	05:01 21:44	06:06 20:28	07:12 19:02	07:18 16:41	08:27 15:41	09:01 15:35
29	08:27 16:33		05:56 19:48	05:32 20:57	04:31 21:58	04:18 22:21	05:03 21:42	06:08 20:26	07:14 18:59	07:21 16:39	08:29 15:39	09:01 15:35
30	08:25 16:35		05:53 19:51	05:30 20:59	04:29 22:00	04:19 22:21	05:05 21:40	06:10 20:23	07:16 18:56	07:23 16:37	08:31 15:38	09:01 15:37
31	08:23 16:37		05:50 19:53		04:28 22:01		05:07 21:38	06:13 20:20		07:25 16:34		09:01 15:38
Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Last time (hh:mm) with flicker	(WTG causing flicker last time)
	Minutes with flicker		

Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Zemgali - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (477)
 Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June
1	09:00 15:39	08:21 16:40	07:13 17:46	17:02 (12) 17:15 (12)	06:47 19:55	05:27 21:01
2	09:00 15:41	08:19 16:42	07:11 17:48	17:03 (12) 17:18 (12)	06:45 19:57	05:25 21:03
3	08:59 15:42	08:17 16:44	07:08 17:50	17:03 (12) 17:20 (12)	06:42 19:59	05:23 21:05
4	08:59 15:43	08:14 16:47	07:05 17:52	17:03 (12) 17:19 (12)	06:39 20:01	05:20 21:08
5	08:58 15:45	08:12 16:49	07:02 17:55	17:03 (12) 17:18 (12)	06:36 20:04	05:18 21:10
6	08:58 15:46	08:10 16:52	07:00 17:57	17:05 (12) 17:17 (12)	06:34 20:06	05:15 21:12
7	08:57 15:48	08:08 16:54	06:57 17:59	17:07 (12) 17:14 (12)	06:31 20:08	05:13 21:14
8	08:56 15:49	08:06 16:56	16:20 (11) 18:02	06:54 20:10	06:28 20:10	05:11 21:16
9	08:56 15:51	08:03 16:59	16:19 (11) 18:04	06:52 20:12	06:25 20:12	05:09 21:19
10	08:55 15:53	08:01 17:01	16:17 (11) 18:06	06:49 20:15	06:23 20:15	05:06 21:21
11	08:54 15:55	07:59 17:03	16:17 (11) 18:08	06:46 20:17	06:20 20:17	05:04 21:23
12	08:53 15:57	07:56 17:06	16:16 (11) 18:11	06:43 20:19	06:17 20:19	05:02 21:25
13	08:52 15:58	07:54 17:08	16:17 (11) 18:13	06:41 17:43 (4)	06:14 20:21	05:00 21:27
14	08:50 16:00	07:52 17:11	16:16 (11) 18:15	06:38 17:40 (4)	06:12 20:23	04:58 21:29
15	08:49 16:02	07:49 17:13	16:37 (11) 18:17	06:35 17:38 (4)	06:09 20:26	04:56 21:31
16	08:48 16:04	07:47 17:15	16:17 (11) 18:20	06:32 17:36 (4)	06:06 20:28	04:54 21:33
17	08:47 16:06	07:44 17:18	16:17 (11) 18:22	06:29 17:36 (4)	06:04 20:30	04:51 21:35
18	08:45 16:08	07:42 17:20	16:17 (11) 18:24	06:27 17:35 (4)	06:01 20:32	04:50 21:37
19	08:44 16:10	07:39 17:22	16:19 (11) 18:26	06:24 17:34 (4)	05:58 20:35	04:48 21:39
20	08:42 16:13	07:37 17:25	16:20 (11) 18:28	06:21 17:34 (4)	05:56 20:37	04:46 21:41
21	08:41 16:15	07:34 17:27	16:23 (11) 18:31	06:18 17:33 (4)	05:53 20:39	04:44 21:43
22	08:39 16:17	07:32 17:29	16:29 (11) 18:33	06:15 17:33 (4)	05:50 20:41	04:42 21:45
23	08:38 16:19	07:29 17:32	06:13 18:35	05:48 17:35 (4)	05:48 20:43	04:40 21:47
24	08:36 16:21	07:26 17:34	06:10 18:37	05:45 17:35 (4)	05:45 20:46	04:39 21:49
25	08:34 16:24	07:24 17:36	06:07 18:39	05:43 17:36 (4)	05:43 20:48	04:37 21:51
26	08:32 16:26	07:21 17:39	17:05 (12) 18:42	06:04 17:39 (4)	05:40 20:50	04:35 21:52
27	08:31 16:28	07:19 17:41	17:04 (12) 18:44	06:01 17:47 (4)	05:37 20:52	04:34 21:54
28	08:29 16:30	07:16 17:43	17:11 (12) 18:46	05:59 18:46	05:35 20:54	04:32 21:56
29	08:27 16:33	07:13 17:43	17:13 (12) 19:48	05:56 19:48	05:32 20:57	04:31 21:58
30	08:25 16:35	07:11 17:41	06:53 19:50	05:30 20:59	05:30 20:59	04:29 21:59
31	08:23 16:37	07:09 17:39	06:50 19:53	05:28 19:53	05:28 22:01	04:28 22:01
Potential sun hours	227	262	365	429	515	539
Total, worst case		218	312	160		
Sun reduction		0.19	0.40	0.43		
Oper. time red.		1.00	1.00	1.00		
Wind dir. red.		1.00	1.00	1.00		
Total reduction		0.19	0.40	0.43		
Total, real		42	126	68		

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Zemgali - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (477)
 Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	July	August	September	October	November	December
1	04:20	05:09	06:15	19:40 (2)	07:18	07:27
	22:20	21:35	20:17	5 19:45 (2)	18:53	16:32
2	04:21	05:11	06:17	19:41 (2)	07:20	9 15:56 (11)
	22:19	21:33	20:14	1 19:42 (2)	18:50	16:29
3	04:22	05:13	06:19		07:22	5 15:54 (11)
	22:19	21:31	20:12		18:48	16:27
4	04:23	05:15	06:21		07:25	2 15:51 (11)
	22:18	21:28	20:09		18:45	16:25
5	04:24	05:17	06:23		07:27	
	22:17	21:26	20:06		18:42	16:23
6	04:25	05:19	06:25		07:29	
	22:16	21:24	20:03		18:39	16:20
7	04:26	05:21	06:27		07:31	17:42 (12)
	22:15	21:21	20:00		18:37	9 17:51 (12)
8	04:27	05:23	06:29		07:33	17:39 (12)
	22:14	21:19	19:58		18:34	14 17:53 (12)
9	04:28	05:26	06:32		07:35	17:39 (12)
	22:13	21:17	19:55		18:31	15 17:54 (12)
10	04:30	05:28	06:34		07:38	17:37 (12)
	22:12	21:14	19:52		18:28	17 17:54 (12)
11	04:31	05:30	06:36		07:40	17:36 (12)
	22:11	21:12	19:49		18:26	17 17:53 (12)
12	04:33	05:32	06:38		07:42	17:36 (12)
	22:10	21:10	19:47		18:23	14 17:50 (12)
13	04:34	05:34	06:40		07:44	17:36 (12)
	22:09	21:07	19:44		18:20	12 17:48 (12)
14	04:36	05:36	06:42		07:46	17:36 (12)
	22:07	21:05	19:41		18:18	9 17:45 (12)
15	04:37	05:38	06:44		07:49	17:36 (12)
	22:06	21:02	19:38		18:15	5 17:41 (12)
16	04:39	05:40	06:46		07:51	17:38 (12)
	22:05	21:00	19:35		18:12	1 17:39 (12)
17	04:41	05:43	06:48	18:28 (4)	07:53	
	22:03	20:57	19:32	6 18:34 (4)		15:58
18	04:42	05:45	06:51	18:24 (4)	07:55	
	22:01	20:54	19:30	13 18:37 (4)	18:07	15:56
19	04:44	05:47	06:53	18:22 (4)	07:58	
	22:00	20:52	19:27	16 18:38 (4)	18:04	15:54
20	04:46	05:49	06:55	18:20 (4)	08:00	
	21:58	20:49	19:24	19 18:39 (4)	18:02	15:53
21	04:48	05:51	19:48 (2)	06:57	18:19 (4)	08:02
	21:57	20:47	6 19:54 (2)	19:21	20 18:39 (4)	17:59
22	04:49	05:53	19:45 (2)	06:59	18:18 (4)	08:04
	21:55	20:44	11 19:56 (2)	19:18	23 18:41 (14)	17:56
23	04:51	05:55	19:43 (2)	07:01	18:18 (4)	08:07
	21:53	20:41	14 19:57 (2)	19:16	24 18:42 (14)	17:54
24	04:53	05:58	19:42 (2)	07:03	18:18 (4)	08:09
	21:51	20:39	16 19:58 (2)	19:13	24 18:42 (14)	17:51
25	04:55	06:00	19:41 (2)	07:05	18:17 (4)	07:11
	21:49	20:36	17 19:58 (2)	19:10	22 18:39 (4)	16:49
26	04:57	06:02	19:40 (2)	07:07	18:17 (4)	07:13
	21:47	20:33	19 19:59 (2)	19:07	19 18:36 (4)	16:46
27	04:59	06:04	19:39 (2)	07:10	18:18 (4)	07:16
	21:45	20:31	19 19:58 (2)	19:04	15 18:33 (4)	16:44
28	05:01	06:06	19:39 (2)	07:12	18:18 (4)	07:18
	21:43	20:28	17 19:56 (2)	19:02	12 18:30 (4)	16:41
29	05:03	06:08	19:39 (2)	07:14	18:19 (4)	07:20
	21:41	20:25	14 19:53 (2)	18:59	8 18:27 (4)	16:39
30	05:05	06:10	19:39 (2)	07:16	18:22 (4)	07:23
	21:39	20:23	11 19:50 (2)	18:56	3 18:25 (4)	16:37
31	05:07	06:12	19:39 (2)		07:25	15 16:01 (11)
	21:37	20:20	9 19:48 (2)		16:34	12 15:59 (11)
Potential sun hours	538	474	386	230	293	241
Total, worst case		153		230	293	16
Sun reduction		0.50		0.46	0.28	0.08
Oper. time red.		1.00		1.00	1.00	1.00
Wind dir. red.		1.00		1.00	1.00	1.00
Total reduction		0.50		0.46	0.28	0.08
Total, real		77		106	83	1

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Zemites - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (485)
 Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January		February		March	April	May	June
1	09:00	14:45 (12)	08:21	15:49 (14)	07:13	16:30 (2)	06:48	05:27
	15:39	8	14:53 (4)	16:40	14	16:03 (14)	17:46	27
2	09:00	14:45 (12)	08:19	15:50 (14)	07:11	16:31 (2)	06:45	05:25
	15:41	9	14:54 (4)	16:42	16	16:06 (14)	17:48	17
3	09:00	14:46 (12)	08:17	15:50 (14)	07:08	16:33 (2)	06:42	05:23
	15:42	10	14:56 (4)	16:44	18	16:08 (14)	17:50	12
4	08:59	14:46 (12)	08:15	15:50 (14)	07:05		06:39	05:20
	15:43	12	14:58 (4)	16:47	17	16:07 (14)	17:53	20:01
5	08:59	14:46 (12)	08:12	15:52 (14)	07:03		06:36	05:18
	15:45	13	14:59 (4)	16:49	15	16:07 (14)	17:55	20:04
6	08:58	14:47 (12)	08:10	15:52 (14)	07:00		06:34	05:15
	15:46	14	15:01 (4)	16:52	14	16:06 (14)	17:57	20:06
7	08:57	14:47 (12)	08:08	15:54 (14)	06:57		06:31	05:13
	15:48	16	15:03 (4)	16:54	11	16:05 (14)	17:59	20:08
8	08:57	14:48 (12)	08:06	15:56 (14)	06:54		06:28	05:11
	15:49	17	15:05 (4)	16:56	6	16:02 (14)	18:02	20:10
9	08:56	14:48 (12)	08:03		06:52		06:25	05:09
	15:51	19	15:07 (4)	16:59		18:04	20:12	21:19
10	08:55	14:49 (12)	08:01		06:49		06:23	05:06
	15:53	20	15:09 (4)	17:01		18:06	20:15	21:21
11	08:54	14:49 (12)	07:59		06:46		06:20	05:04
	15:55	22	15:11 (4)	17:03		18:08	20:17	21:23
12	08:53	14:50 (12)	07:56		06:43		06:17	05:02
	15:57	23	15:13 (4)	17:06		18:11	20:19	21:25
13	08:52	14:50 (4)	07:54		06:41		06:14	05:00
	15:58	24	15:14 (4)	17:08		18:13	20:21	21:27
14	08:51	14:51 (4)	07:52	16:37 (2)	06:38		06:12	04:58
	16:00	24	15:15 (4)	17:11	1	16:38 (2)	18:15	20:24
15	08:49	14:51 (4)	07:49	16:33 (2)	06:35		06:09	04:56
	16:02	24	15:15 (4)	17:13	7	16:40 (2)	18:17	20:26
16	08:48	14:52 (4)	07:47	16:32 (2)	06:32		06:06	04:53
	16:04	24	15:16 (4)	17:15	11	16:43 (2)	18:20	20:28
17	08:47	14:52 (4)	07:44	16:30 (2)	06:29		06:04	04:51
	16:06	24	15:16 (4)	17:18	15	16:45 (2)	18:22	20:30
18	08:45	14:52 (4)	07:42	16:30 (2)	06:27		06:01	04:50
	16:08	24	15:16 (4)	17:20	18	16:48 (2)	18:24	20:32
19	08:44	14:52 (4)	07:39	16:28 (2)	06:24		05:58	04:48
	16:10	24	15:16 (4)	17:22	23	16:51 (2)	18:26	20:35
20	08:42	14:54 (4)	07:37	16:27 (2)	06:21	17:56 (1)	05:56	04:46
	16:13	23	15:17 (4)	17:25	26	16:53 (3)	18:28	20:37
21	08:41	14:54 (4)	07:34	16:27 (2)	06:18	17:55 (1)	05:53	04:44
	16:15	23	15:17 (4)	17:27	28	16:55 (3)	18:31	6
22	08:39	14:55 (4)	07:32	16:27 (2)	06:16	17:54 (1)	05:50	18:01 (1)
	16:17	22	15:17 (4)	17:29	31	16:58 (3)	18:33	9
23	08:38	14:55 (4)	07:29	16:26 (2)	06:13	17:55 (1)	05:48	18:03 (1)
	16:19	22	15:17 (4)	17:32	35	17:01 (3)	18:35	11
24	08:36	14:56 (4)	07:26	16:26 (2)	06:10	17:54 (1)	05:45	18:06 (1)
	16:21	21	15:17 (4)	17:34	37	17:03 (3)	18:37	14
25	08:34	14:57 (4)	07:24	16:27 (2)	06:07	17:55 (1)	05:43	18:08 (1)
	16:24	19	15:16 (4)	17:36	39	17:06 (3)	18:39	13
26	08:32	14:59 (4)	07:21	16:27 (2)	06:04	17:56 (1)	05:40	18:08 (1)
	16:26	17	15:16 (4)	17:39	40	17:07 (3)	18:42	11
27	08:31	14:59 (4)	07:19	16:27 (2)	06:02	17:58 (1)	05:37	18:07 (1)
	16:28	15	15:14 (4)	17:41	38	17:05 (3)	18:44	5
28	08:29	15:01 (4)	07:16	16:28 (2)	05:59	18:03 (1)	20:52	18:03 (1)
	16:30	13	15:52 (14)	17:43	34	17:04 (3)	18:46	
29	08:27	15:05 (4)			06:56		05:32	
	16:33	9	15:55 (14)		19:48		20:57	
30	08:25	15:50 (14)			06:53		05:30	
	16:35	8	15:58 (14)		19:50		20:59	
31	08:23	15:50 (14)			06:50			
	16:37	11	16:01 (14)		19:53		22:01	
Potential sun hours	227		262		365		429	515
Total, worst case	554		494		128			539
Sun reduction	0.11		0.19		0.40			
Oper. time red.	1.00		1.00		1.00			
Wind dir. red.	1.00		1.00		1.00			
Total reduction	0.11		0.19		0.40			
Total, real	60		96		52			

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Zemites - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (485)
Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	July	August	September	October	November	December
1	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:27 16:32	08:33 15:37 22
2	04:21 22:19	05:11 21:33	06:17 20:14	07:20 18:50	07:30 16:29	08:35 15:36 21
3	04:21 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27 7	08:36 15:35 19
4	04:22 22:18	05:15 21:28	06:21 20:09	07:25 18:45	07:34 16:25 12	08:38 15:34 17
5	04:24 22:17	05:17 21:26	06:23 20:06	07:27 18:42	07:37 16:23 14	08:40 15:33 16
6	04:25 22:16	05:19 21:24	06:25 20:03	07:29 18:39	07:39 16:20 16	08:41 15:32 14
7	04:26 22:16	05:21 21:22	06:27 20:01	07:31 18:37	07:41 16:18 17	08:43 15:31 14
8	04:27 22:15	05:23 21:19	06:29 19:58	07:33 18:34	07:43 16:16 18	08:44 15:31 12
9	04:28 22:14	05:26 21:17	06:32 19:55	07:36 18:31	07:46 16:14 17	08:46 15:30 10
10	04:30 22:12	05:28 21:14	06:34 19:52	07:38 18:28 7	07:48 16:12 14	08:47 15:29 9
11	04:31 22:11	05:30 21:12	06:36 19:49	07:40 18:26 14	07:50 16:10 11	08:49 15:28 8
12	04:33 22:10	05:32 21:10	06:38 19:47	07:42 18:23 18	07:53 16:07 9	08:50 15:27 7
13	04:34 22:09	05:34 21:07	06:40 19:44	07:44 18:20 30	07:55 16:05 11	08:51 15:26 6
14	04:36 22:08	05:36 21:05	06:42 19:41	07:47 18:18 36	07:57 16:03 13	08:52 15:25 6
15	04:37 22:06	05:38 21:02	06:44 19:38	07:49 18:15 39	07:59 16:02 15	08:53 15:24 4
16	04:39 22:05	05:40 21:00	06:46 19:35 4	07:51 18:12 40	08:02 16:00 18	08:54 15:23 4
17	04:40 22:03	05:43 20:57	06:48 19:33 10	07:53 18:10 38	08:04 15:58 19	08:55 15:22 3
18	04:42 22:02	05:45 20:54	06:51 19:30 13	07:55 18:07 36	08:06 15:56 21	08:56 15:21 3
19	04:44 22:00	05:47 20:52	06:53 19:27 15	07:58 18:04 33	08:08 15:54 22	08:57 15:20 3
20	04:46 21:58	05:49 20:49	06:55 19:24 13	08:00 18:02 31	08:10 15:52 22	08:58 15:19 2
21	04:47 21:57	05:51 20:47	06:57 19:21 10	08:02 17:59 28	08:13 15:51 23	08:58 15:18 2
22	04:49 21:55	05:53 20:44	06:59 19:18 8	08:04 17:57 24	08:15 15:49 23	08:59 15:17 2
23	04:51 21:53	05:55 20:41	07:01 19:16 5	08:07 17:54 21	08:17 15:48 24	08:59 15:16 2
24	04:53 21:51	05:58 20:39	07:03 19:13 1	08:09 17:51 18	08:19 15:46 24	09:00 15:15 3
25	04:55 21:49	06:00 20:36	07:05 19:10	07:11 16:49 14	08:21 15:45 24	09:00 15:14 3
26	04:57 21:47	06:02 20:33	07:08 19:07	07:14 16:46 10	08:23 15:43 24	09:00 15:13 3
27	04:59 21:45	06:04 20:31	07:10 19:04	07:16 16:44 6	08:25 15:42 24	09:01 15:12 4
28	05:01 21:43	06:06 20:28	07:12 19:02	07:18 16:41	08:27 15:41 24	09:01 15:11 4
29	05:03 21:41	06:08 20:25	07:14 18:59	07:20 16:39	08:29 15:39 24	09:01 15:10 5
30	05:05 21:39	06:10 20:23	07:16 18:56	07:23 16:37	08:31 15:38 24	09:01 15:09 6
31	05:07 21:37	06:13 20:20		07:25 16:34		09:00 15:08 6
Potential sun hours	538	474	386	321	241	207
Total, worst case			79	443	514	240
Sun reduction			0.46	0.28	0.08	0.06
Oper. time red.			1.00	1.00	1.00	1.00
Wind dir. red.			1.00	1.00	1.00	1.00
Total reduction			0.46	0.28	0.08	0.06
Total, real			37	125	40	15

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Zveru ferma - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (585) Sunshine probability S (Average daily sunshine hours) []

Assumptions for shadow calculations

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
0.80 1.82 4.75 6.09 9.67 10.05 8.16 7.72 5.94 2.93 0.63 0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June
1	09:00 15:39	08:21 16:40	07:13 17:46	06:48 19:55	19:03 (12) 21:01	19:52 (4) 22:02
2	09:00 15:41	08:19 16:42	07:11 17:48	06:45 19:57	19:04 (12) 21:03	19:53 (4) 22:04
3	08:59 15:42	08:17 16:44	07:08 17:50	06:42 19:59	19:04 (12) 21:05	19:53 (4) 22:05
4	08:59 15:43	08:14 16:47	07:05 17:53	06:39 20:01	19:04 (12) 21:08	19:55 (4) 22:07
5	08:58 15:45	08:12 16:49	07:02 17:55	06:36 20:04	19:05 (12) 21:10	19:56 (4) 22:08
6	08:58 15:46	08:10 16:52	07:00 17:57	06:34 20:06	19:07 (12) 21:12	19:56 (4) 22:09
7	08:57 15:48	08:08 16:54	06:57 17:59	06:31 20:08	19:11 (12) 21:14	19:59 (4) 22:11
8	08:56 15:50	08:06 16:56	06:54 18:02	06:28 20:10	05:11 21:16	04:19 22:12
9	08:56 15:51	08:03 16:59	06:52 18:04	06:25 20:12	05:09 21:18	04:19 22:13
10	08:55 15:53	08:01 17:01	06:49 18:06	06:23 20:15	19:43 (14) 21:21	05:06 22:14
11	08:54 15:55	07:59 17:03	06:46 18:08	06:20 20:17	19:42 (14) 21:23	05:04 22:15
12	08:53 15:57	07:56 17:06	06:43 18:11	17:35 (11) 20:19	19:41 (14) 21:25	05:02 22:16
13	08:52 15:58	07:54 17:08	06:41 18:13	17:32 (11) 20:21	19:40 (14) 21:27	05:00 22:17
14	08:50 16:00	07:52 17:11	06:38 18:15	17:30 (11) 20:23	19:40 (14) 21:29	04:58 22:17
15	08:49 16:02	07:49 17:13	06:35 18:17	17:28 (11) 20:26	19:40 (14) 21:31	04:56 22:18
16	08:48 16:04	07:47 17:15	06:32 18:20	17:27 (11) 20:28	19:40 (14) 21:33	04:54 22:19
17	08:47 16:06	07:44 17:18	06:29 18:22	17:27 (11) 20:30	19:41 (14) 21:35	04:52 22:19
18	08:45 16:08	07:42 17:20	06:27 18:24	17:26 (11) 20:32	19:41 (14) 21:37	04:50 22:20
19	08:44 16:11	07:39 17:22	06:24 18:26	17:25 (11) 20:35	19:42 (14) 21:39	04:48 22:20
20	08:42 16:13	07:37 17:25	06:21 18:28	17:25 (11) 20:37	19:46 (14) 21:41	04:46 22:21
21	08:41 16:15	07:34 17:27	06:18 18:31	17:25 (11) 20:39	19:57 (4) 21:43	04:44 22:21
22	08:39 16:17	07:32 17:29	06:15 18:33	17:25 (11) 20:41	19:56 (4) 21:45	04:42 22:21
23	08:38 16:19	07:29 17:32	06:13 18:35	17:26 (11) 20:43	19:55 (4) 21:47	04:40 22:21
24	08:36 16:21	07:26 17:34	06:10 18:37	17:26 (11) 20:46	19:54 (4) 21:49	04:39 22:21
25	08:34 16:24	07:24 17:36	06:07 18:39	17:27 (11) 20:48	19:54 (4) 21:51	04:37 22:21
26	08:32 16:26	07:21 17:39	06:04 18:42	17:28 (11) 20:50	19:53 (4) 21:52	04:35 22:21
27	08:30 16:28	07:19 17:41	06:01 18:44	17:30 (11) 20:52	19:53 (4) 21:54	04:34 22:21
28	08:29 16:30	07:16 17:43	05:59 18:46	18:06 (13) 20:54	19:52 (4) 21:56	04:32 22:21
29	08:27 16:33		06:56 19:48	19:06 (13) 20:57	19:52 (4) 21:58	04:31 22:21
30	08:25 16:35		06:53 19:50	19:05 (12) 20:59	19:52 (4) 21:59	04:29 22:20
31	08:23 16:37		06:50 19:53	19:04 (12) 19:23 (12)	04:28 22:01	20:54 (2) 21:08 (2)
Potential sun hours	227	262	365	429	515	539
Total, worst case			398	418	343	52
Sun reduction			0.40	0.43	0.58	0.56
Oper. time red.			1.00	1.00	1.00	1.00
Wind dir. red.			1.00	1.00	1.00	1.00
Total reduction			0.40	0.43	0.58	0.56
Total, real			160	178	200	29

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Last time (hh:mm) with flicker	(WTG causing flicker last time)

Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Zveru ferma - Shadow Receptor: 1.0×1.0 Azimuth: 3.1° Slope: 90.0° (585)
 Sunshine probability S (Average daily sunshine hours) []

Assumptions for shadow calculations

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
 0.80 1.82 4.75 6.09 9.67 10.05 8.16 7.72 5.94 2.93 0.63 0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	July	August	September	October	November	December
1	04:20	05:09	06:15	19:41 (14)	07:18	18:12 (11)
	22:20	21:35	20:17	4 19:45 (14)	18:53	10 18:22 (11)
2	04:21	05:11	06:17	19:41 (14)	07:20	18:15 (11)
	22:19	21:33	20:14	1 19:42 (14)	18:50	4 18:19 (11)
3	04:22	05:13	06:19		07:22	
	22:19	21:31	20:12		18:48	
4	04:23	05:15	06:21		07:25	
	22:18	21:28	20:09		18:45	
5	04:24	05:17	06:23	19:08 (12)	07:27	
	22:17	21:26	20:06	3 19:11 (12)	18:42	
6	04:25	05:19	20:08 (4)	19:04 (12)	07:29	
	22:16	21:24	10 20:18 (4)	20:03	11 19:15 (12)	18:39
7	04:26	21:06 (2)	05:21	20:06 (4)	06:27	19:01 (12)
	22:15	5 21:11 (2)	21:21	14 20:20 (4)	20:00	15 19:16 (12)
8	04:27	21:05 (2)	05:23	20:05 (4)	06:29	19:00 (12)
	22:14	8 21:13 (2)	21:19	16 20:21 (4)	19:58	17 19:17 (12)
9	04:29	21:04 (2)	05:26	20:04 (4)	06:32	18:58 (12)
	22:13	10 21:14 (2)	21:17	18 20:22 (4)	19:55	19 19:17 (12)
10	04:30	21:03 (2)	05:28	20:03 (4)	06:34	18:57 (12)
	22:12	11 21:14 (2)	21:14	20 20:23 (4)	19:52	20 19:17 (12)
11	04:31	21:02 (2)	05:30	20:02 (4)	06:36	18:57 (12)
	22:11	13 21:15 (2)	21:12	22 20:24 (4)	19:49	20 19:17 (12)
12	04:33	21:03 (2)	05:32	20:00 (4)	06:38	18:56 (12)
	22:10	13 21:16 (2)	21:09	23 20:23 (4)	19:47	20 19:16 (12)
13	04:34	21:02 (2)	05:34	20:00 (4)	06:40	18:56 (12)
	22:09	15 21:17 (2)	21:07	23 20:23 (4)	19:44	17 19:13 (12)
14	04:36	21:01 (2)	05:36	19:59 (4)	06:42	18:56 (13)
	22:07	16 21:17 (2)	21:05	24 20:23 (4)	19:41	14 19:10 (13)
15	04:37	21:01 (2)	05:38	19:59 (4)	06:44	18:56 (13)
	22:06	17 21:18 (2)	21:02	24 20:23 (4)	19:38	11 19:07 (13)
16	04:39	21:01 (2)	05:41	19:59 (4)	06:46	18:20 (11)
	22:04	17 21:18 (2)	20:59	24 20:23 (4)	19:35	19 19:04 (13)
17	04:41	21:01 (2)	05:43	19:59 (4)	06:48	18:17 (11)
	22:03	18 21:19 (2)	20:57	23 20:22 (4)	19:32	21 19:01 (13)
18	04:42	21:00 (2)	05:45	19:59 (4)	06:51	18:15 (11)
	22:01	19 21:19 (2)	20:54	22 20:21 (4)	19:30	21 18:58 (13)
19	04:44	21:01 (2)	05:47	20:00 (4)	06:53	18:13 (11)
	22:00	18 21:19 (2)	20:52	19 20:19 (4)	19:27	21 18:34 (11)
20	04:46	21:00 (2)	05:49	20:00 (4)	06:55	18:12 (11)
	21:58	19 21:19 (2)	20:49	16 20:16 (4)	19:24	23 18:35 (11)
21	04:48	21:01 (2)	05:51	20:01 (4)	06:57	18:10 (11)
	21:56	17 21:18 (2)	20:47	13 20:14 (4)	19:21	25 18:35 (11)
22	04:49	21:01 (2)	05:53	20:02 (4)	06:59	18:09 (11)
	21:55	15 21:16 (2)	20:44	9 20:11 (4)	19:18	26 18:35 (11)
23	04:51	21:01 (2)	05:55	19:49 (14)	07:01	18:10 (11)
	21:53	13 21:14 (2)	20:41	9 20:09 (4)	19:16	26 18:36 (11)
24	04:53	21:01 (2)	05:58	19:46 (14)	07:03	18:09 (11)
	21:51	12 21:13 (2)	20:39	10 19:56 (14)	19:13	27 18:36 (11)
25	04:55	21:02 (2)	06:00	19:44 (14)	07:05	18:09 (11)
	21:49	10 21:12 (2)	20:36	13 19:57 (14)	19:10	26 18:35 (11)
26	04:57	21:02 (2)	06:02	19:42 (14)	07:07	18:08 (11)
	21:47	8 21:10 (2)	20:33	16 19:58 (14)	19:07	26 18:34 (11)
27	04:59	21:02 (2)	06:04	19:42 (14)	07:10	18:08 (11)
	21:45	6 21:08 (2)	20:31	16 19:58 (14)	19:04	25 18:33 (11)
28	05:01	21:03 (2)	06:06	19:41 (14)	07:12	18:09 (11)
	21:43	3 21:06 (2)	20:28	15 19:56 (14)	19:02	21 18:30 (11)
29	05:03		06:08	19:40 (14)	07:14	18:09 (11)
	21:41		20:25	13 19:53 (14)	18:59	18 18:27 (11)
30	05:05		06:10	19:40 (14)	07:16	18:11 (11)
	21:39		20:23	10 19:50 (14)	18:56	14 18:25 (11)
31	05:07		06:13	19:40 (14)		07:25
	21:37		20:20	8 19:48 (14)		16:34
Potential sun hours	538	474	386	321	241	207
Total, worst case	283	430	511	14		
Sun reduction	0.47	0.50	0.46	0.28		
Oper. time red.	1.00	1.00	1.00	1.00		
Wind dir. red.	1.00	1.00	1.00	1.00		
Total reduction	0.47	0.50	0.46	0.28		
Total, real	133	217	236	4		

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Last time (hh:mm) with flicker	(WTG causing flicker last time)

Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

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0037167242411

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Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa
Assumptions for shadow calculations

Shadow receptor: Zile - 1 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (447)
Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:00 15:40	08:21 16:40	07:13 17:46	06:48 19:55	05:28 21:01	04:27 22:02	04:20 22:19	05:09 21:35	06:15 20:17	07:18 18:53	07:27 16:32	08:32 15:37
2	09:00 15:41	08:19 16:42	07:11 17:48	06:45 19:57	05:25 21:03	04:26 22:04	04:21 22:19	05:11 21:33	06:17 20:14	07:20 18:50	07:29 16:30	08:34 15:36
3	08:59 15:42	08:16 16:45	07:08 17:50	06:42 19:59	05:23 21:05	04:25 22:05	04:22 22:18	05:13 21:30	06:19 20:12	07:22 18:48	07:32 16:27	08:36 15:35
4	08:59 15:44	08:14 16:47	07:05 17:53	06:39 20:01	05:20 21:08	04:23 22:06	04:23 22:18	05:15 21:28	06:21 20:09	07:25 18:45	07:34 16:25	08:38 15:34
5	08:58 15:45	08:12 16:49	07:02 17:55	06:36 20:04	05:18 21:10	04:22 22:08	04:24 22:17	05:17 21:26	06:23 20:06	07:27 18:42	07:36 16:23	08:39 15:34
6	08:58 15:47	08:10 16:52	07:00 17:57	06:34 20:06	05:16 21:12	04:21 22:09	04:25 22:16	05:19 21:24	06:25 20:03	07:29 18:39	07:39 16:20	08:41 15:33
7	08:57 15:48	08:08 16:54	06:57 17:59	06:31 20:08	05:13 21:14	04:20 22:10	04:26 22:15	05:22 21:21	06:27 20:00	07:31 18:37	07:41 16:18	08:43 15:32
8	08:56 15:50	08:06 16:56	06:54 18:02	06:28 20:10	05:11 21:16	04:20 22:12	04:27 22:14	05:24 21:19	06:30 19:58	07:33 18:34	07:43 16:16	08:44 15:31
9	08:55 15:51	08:03 16:59	06:52 18:04	06:25 20:12	05:09 21:18	04:19 22:13	04:29 22:13	05:26 21:17	06:32 19:55	07:35 18:31	07:46 16:14	08:46 15:31
10	08:54 15:53	08:01 17:01	06:49 18:06	06:23 20:15	05:07 21:21	04:18 22:14	04:30 22:12	05:28 21:14	06:34 19:52	07:38 18:28	07:48 16:12	08:47 15:30
11	08:54 15:55	07:59 17:04	06:46 18:08	06:20 20:17	05:04 21:23	04:18 22:15	04:32 22:11	05:30 21:12	06:36 19:49	07:40 18:26	07:50 16:10	08:48 15:30
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31	08:23 16:38		06:50 19:53		04:28 22:01		05:07 21:37	06:13 20:20		07:25 16:34		09:00 15:38
Potential sun hours	228	262	365	429	515	539	538	474	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa
Assumptions for shadow calculations

Shadow receptor: Zile 3 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (583)
Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:00 15:40	08:21 16:40	07:13 17:46	06:48 19:55	05:28 21:01	04:27 22:02	04:20 22:19	05:09 21:35	06:15 20:17	07:18 18:53	07:27 16:32	08:32 15:37
2	09:00 15:41	08:19 16:42	07:11 17:48	06:45 19:57	05:25 21:03	04:26 22:04	04:21 22:19	05:11 21:33	06:17 20:14	07:20 18:50	07:29 16:30	08:34 15:36
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31	08:23 16:38		06:50 19:53		04:28 22:01		05:07 21:37	06:13 20:20		07:25 16:34		09:00 15:38
Potential sun hours	228	262	365	429	515	539	538	474	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa
Assumptions for shadow calculations

Shadow receptor: Zile 4 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (445)
Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:00 15:40	08:21 16:40	07:13 17:46	06:48 19:55	05:28 21:01	04:27 22:02	04:20 22:19	05:09 21:35	06:15 20:17	07:18 18:53	07:27 16:32	08:32 15:37
2	09:00 15:41	08:19 16:42	07:11 17:48	06:45 19:57	05:25 21:03	04:26 22:04	04:21 22:19	05:11 21:33	06:17 20:14	07:20 18:50	07:29 16:30	08:34 15:36
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29	08:27 16:33		06:56 19:48	05:33 20:57	04:31 21:57	04:18 22:20	05:03 21:41	06:08 20:25	07:14 18:59	07:20 16:39	08:29 15:40	09:00 15:36
30	08:25 16:35		06:53 19:50	05:30 20:59	04:30 21:59	04:19 22:20	05:05 21:39	06:10 20:23	07:16 18:56	07:23 16:37	08:31 15:38	09:00 15:37
31	08:23 16:38		06:50 19:53		04:28 22:01		05:07 21:37	06:13 20:20		07:25 16:34		09:00 15:38
Potential sun hours	228	262	365	429	515	539	538	474	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa
Assumptions for shadow calculations

Shadow receptor: Zitari - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (776)
Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June
1	09:01 15:40	08:21 16:40	08:56 (7) 09:13 (7)	07:14 17:46	07:56 (6) 08:09 (6)	06:48 19:55
2	09:00 15:41	08:19 16:42	08:55 (7) 09:13 (7)	07:11 17:48	07:58 (6) 08:06 (6)	06:45 19:57
3	09:00 15:42	08:17 16:45	08:56 (7) 09:13 (7)	07:08 17:51	06:42 20:00	05:23 21:06
4	08:59 15:44	08:15 16:47	08:57 (7) 09:13 (7)	07:06 17:53	06:40 20:02	05:21 21:08
5	08:59 15:45	08:13 16:50	08:58 (7) 09:11 (7)	07:03 17:55	06:37 20:04	05:18 21:10
6	08:58 15:47	08:11 16:52	08:59 (7) 09:11 (7)	07:00 17:57	06:34 20:06	05:16 21:12
7	08:58 15:48	08:08 16:54	09:01 (7) 09:08 (7)	06:57 18:00	06:31 20:08	05:14 21:15
8	08:57 15:50	08:06 16:57		06:55 18:02	06:28 20:11	05:11 21:17
9	08:56 15:52	08:04 16:59		06:52 18:04	06:26 20:13	05:09 21:19
10	08:55 15:53	08:01 17:01		06:49 18:06	06:23 20:15	05:07 21:21
11	08:54 15:55	07:59 17:04		06:46 18:09	06:20 20:17	05:04 21:23
12	08:53 15:57	07:57 17:06		06:44 18:11	06:17 20:19	05:02 21:25
13	08:52 15:59	07:54 17:09		06:41 18:13	06:15 20:22	05:00 21:27
14	08:51 16:01	07:52 17:11		06:38 18:15	07:04 (5) 07:05 (5)	06:12 20:24
15	08:50 16:03	07:50 17:13		06:35 18:18	07:02 (5) 07:07 (5)	06:09 20:26
16	08:48 16:05	07:47 17:16		06:33 18:20	06:59 (5) 07:07 (5)	06:07 20:28
17	08:47 16:07	07:45 17:18		06:30 18:22	06:56 (5) 07:07 (5)	06:04 20:31
18	08:46 16:09	07:42 17:20		06:27 18:24	06:53 (5) 07:07 (5)	06:01 20:33
19	08:44 16:11	07:40 17:23		06:24 18:27	06:51 (5) 07:06 (5)	05:59 20:35
20	08:43 16:13	07:37 17:25	08:06 (6) 08:10 (6)	06:21 18:29	06:51 (5) 07:04 (5)	05:56 20:37
21	08:41 16:15	07:35 17:27	08:03 (6) 08:11 (6)	06:19 18:31	06:53 (5) 07:04 (5)	05:53 20:39
22	08:40 16:17	07:32 17:30	08:00 (6) 08:12 (6)	06:16 18:33	06:55 (5) 07:01 (5)	05:51 20:42
23	08:38 16:19	07:29 17:32	07:57 (6) 08:12 (6)	06:13 18:35		05:48 20:44
24	08:36 16:22	07:27 17:34	07:55 (6) 08:13 (6)	06:10 18:38	05:46 20:46	04:39 21:49
25	08:35 16:24	07:24 17:37	07:54 (6) 08:12 (6)	06:07 18:40	05:43 20:48	04:37 21:51
26	08:33 16:26	09:07 (7) 09:09 (7)	07:22 17:39	07:54 (6) 08:12 (6)	06:05 18:42	05:40 20:50
27	08:31 16:28	09:05 (7) 09:10 (7)	07:19 17:41	07:54 (6) 08:11 (6)	06:02 18:44	05:38 20:53
28	08:29 16:31	09:03 (7) 09:11 (7)	07:16 17:44	07:55 (6) 08:10 (6)	05:59 18:46	05:35 20:55
29	08:27 16:33	09:00 (7) 09:11 (7)		06:56 19:49	05:33 20:57	04:31 21:58
30	08:25 16:35	08:58 (7) 09:12 (7)		06:53 19:51	05:30 20:59	04:30 22:00
31	08:23 16:38	08:56 (7) 09:13 (7)		06:51 19:53		04:28 22:01
Potential sun hours	227	262	365	429	515	539
Total, worst case	57	225	105			
Sun reduction	0.11	0.19	0.40			
Oper. time red.	1.00	1.00	1.00			
Wind dir. red.	1.00	1.00	1.00			
Total reduction	0.11	0.19	0.40			
Total, real	6	44	42			

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Zitari - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (776)
Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	July	August	September	October	November	December
1	04:20	05:09	06:15	07:19	07:28	08:33
	22:20	21:35	20:18	18:54	16:32	15:37
2	04:21	05:11	06:17	07:21	07:30	08:35
	22:20	21:33	20:15	18:51	16:30	15:36
3	04:22	05:13	06:19	07:23	07:32	08:37
	22:19	21:31	20:12	18:48	16:27	15:35
4	04:23	05:15	06:21	07:25	07:35	08:30 (7)
	22:18	21:29	20:09	18:45	16:25	8 08:38 (7) 15:34
5	04:24	05:18	06:24	07:27	07:37	08:29 (7) 08:40
	22:18	21:27	20:06	18:42	16:23	12 08:41 (7) 15:34
6	04:25	05:20	06:26	07:29	07:39	08:27 (7) 08:42
	22:17	21:24	20:04	18:40	16:21	14 08:41 (7) 15:33
7	04:26	05:22	06:28	07:32	07:42	08:27 (7) 08:43
	22:16	21:22	20:01	18:37	16:18	15 08:42 (7) 15:32
8	04:27	05:24	06:30	07:34	07:44	08:27 (7) 08:45
	22:15	21:20	19:58	18:34	16:16	16 08:43 (7) 15:31
9	04:29	05:26	06:32	07:36	07:46	08:26 (7) 08:46
	22:14	21:17	19:55	18:31	16:14	17 08:43 (7) 15:31
10	04:30	05:28	06:34	07:38	07:48	08:26 (7) 08:48
	22:13	21:15	19:53	18:29	16:12	18 08:44 (7) 15:30
11	04:32	05:30	06:36	07:40	08:35 (6)	07:51 08:27 (7) 08:49
	22:12	21:12	19:50	18:26	3 08:38 (6)	16:10 16 08:43 (7) 15:30
12	04:33	05:32	06:38	07:42	08:31 (6)	07:53 08:30 (7) 08:50
	22:10	21:10	19:47	18:23	10 08:41 (6)	16:08 14 08:44 (7) 15:30
13	04:34	05:34	06:40	07:45	08:28 (6)	07:55 08:32 (7) 08:51
	22:09	21:07	19:44	18:21	14 08:42 (6)	16:06 11 08:43 (7) 15:29
14	04:36	05:37	06:43	07:47	08:28 (6)	07:58 08:35 (7) 08:53
	22:08	21:05	19:41	18:18	16 08:44 (6)	16:04 8 08:43 (7) 15:29
15	04:38	05:39	06:45	07:49	08:27 (6)	08:00 08:38 (7) 08:54
	22:06	21:02	19:39	18:15	17 08:44 (6)	16:02 5 08:43 (7) 15:29
16	04:39	05:41	06:47	07:51	08:26 (6)	08:02 08:40 (7) 08:55
	22:05	21:00	19:36	18:13	18 08:44 (6)	16:00 2 08:42 (7) 15:29
17	04:41	05:43	06:49	07:54	08:26 (6)	08:04 08:56
	22:04	20:57	19:33	18:10	18 08:44 (6)	15:58 15:29
18	04:43	05:45	06:51	07:56	08:27 (6)	08:06 08:57
	22:02	20:55	19:30	18:07	17 08:44 (6)	15:56 15:29
19	04:44	05:47	06:53	07:58	08:29 (6)	08:09 08:57
	22:00	20:52	19:27	18:05	14 08:43 (6)	15:55 15:29
20	04:46	05:49	06:55	08:00	08:32 (6)	08:11 08:58
	21:59	20:50	19:24	18:02	10 08:42 (6)	15:53 15:30
21	04:48	05:52	06:57	07:42 (5)	08:03 08:34 (6)	08:13 08:59
	21:57	20:47	19:22	3 07:45 (5)	17:59 7 08:41 (6)	15:51 15:30
22	04:50	05:54	06:59	07:38 (5)	08:05 08:37 (6)	08:15 08:59
	21:55	20:44	19:19	10 07:48 (5)	17:57 3 08:40 (6)	15:50 15:31
23	04:52	05:56	07:02	07:36 (5)	08:07 08:17	09:00
	21:53	20:42	19:16	13 07:49 (5)	17:54 15:48	15:31
24	04:53	05:58	07:04	07:35 (5)	08:09 08:19	09:00
	21:52	20:39	19:13	14 07:49 (5)	17:52 15:46	15:32
25	04:55	06:00	07:06	07:35 (5)	07:12 08:21	09:00
	21:50	20:36	19:10	14 07:49 (5)	16:49 15:45	15:32
26	04:57	06:02	07:08	07:37 (5)	07:14 08:23	09:01
	21:48	20:34	19:08	12 07:49 (5)	16:47 15:44	15:33
27	04:59	06:04	07:10	07:40 (5)	07:16 08:25	09:01
	21:46	20:31	19:05	9 07:49 (5)	16:44 15:42	15:34
28	05:01	06:06	07:12	07:42 (5)	07:18 08:27	09:01
	21:44	20:28	19:02	6 07:48 (5)	16:42 15:41	15:35
29	05:03	06:09	07:14	07:44 (5)	07:21 08:29	09:01
	21:42	20:26	18:59	3 07:47 (5)	16:39 15:40	15:36
30	05:05	06:11	07:16	07:23 16:37	08:31 15:39	09:01 15:37
	21:40	20:23	18:56	07:25		09:01
31	05:07	06:13		16:35		15:38
	21:38	20:20				
Potential sun hours	538	474	386	321	241	207
Total, worst case			84	147	156	
Sun reduction			0.46	0.28	0.08	
Oper. time red.			1.00	1.00	1.00	
Wind dir. red.			1.00	1.00	1.00	
Total reduction			0.46	0.28	0.08	
Total, real			39	42	12	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Ares - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (506)
Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June
1	09:00 15:39	08:21 16:40	07:13 17:46	06:47 19:55	19:12 (2) 21:01	04:27 22:02
2	09:00 15:40	08:19 16:47	07:11 17:48	06:45 19:57	19:12 (2) 21:03	04:25 22:04
3	08:59 15:42	08:17 16:44	07:08 17:50	06:42 19:59	19:13 (2) 21:05	04:24 22:05
4	08:59 15:43	08:14 16:47	07:05 17:52	17:21 (4) 20:01	19:13 (2) 21:08	04:23 22:07
5	08:58 15:45	08:12 16:49	07:02 17:55	17:19 (4) 20:04	19:15 (2) 21:10	04:22 22:08
6	08:58 15:46	08:10 16:52	16:14 (11) 17:57	17:19 (4) 20:06	05:15 21:12	04:21 22:09
7	08:57 15:48	08:08 16:54	16:14 (11) 17:59	17:18 (4) 20:08	05:13 21:14	04:20 22:11
8	08:56 15:49	08:06 16:56	16:13 (11) 18:02	17:17 (4) 20:10	05:11 21:16	04:19 22:12
9	08:56 15:51	08:03 16:59	16:14 (11) 18:04	17:17 (4) 20:12	05:09 21:18	04:18 22:13
10	08:55 15:53	08:01 17:01	16:14 (11) 18:06	17:17 (4) 20:15	05:06 21:21	04:18 22:14
11	08:54 15:55	07:59 17:03	16:14 (11) 18:08	17:17 (4) 20:17	05:04 21:23	04:17 22:15
12	08:53 15:56	07:56 17:06	16:15 (11) 18:11	17:19 (4) 20:19	05:02 21:25	04:17 22:16
13	08:52 15:58	07:54 17:08	16:16 (11) 18:13	17:21 (4) 20:21	05:00 21:27	04:16 22:17
14	08:50 16:00	07:52 17:11	16:17 (11) 18:15	06:12 20:23	04:58 21:29	04:16 22:17
15	08:49 16:02	07:49 17:13	16:20 (11) 18:17	06:09 20:26	04:56 21:31	04:15 22:18
16	08:48 16:04	07:47 17:15	06:32 18:19	06:06 20:28	04:53 21:33	04:15 22:19
17	08:47 16:06	07:44 17:18	06:29 18:22	06:04 20:30	04:51 21:35	04:15 22:19
18	08:45 16:08	07:42 17:20	06:27 18:24	06:01 20:32	04:49 21:37	04:15 22:20
19	08:44 16:10	07:39 17:22	06:24 18:26	05:58 20:35	04:48 21:39	04:15 22:20
20	08:42 16:13	07:37 17:25	06:21 18:28	05:56 20:37	04:46 21:41	04:15 22:21
21	08:41 16:15	07:34 17:27	06:18 18:31	05:53 20:39	04:44 21:43	04:15 22:21
22	08:39 16:17	07:32 17:29	06:15 18:33	05:50 20:41	04:42 21:45	04:15 22:21
23	08:38 16:19	07:29 17:32	06:13 18:35	05:48 20:43	04:40 21:47	04:15 22:21
24	08:36 16:21	07:26 17:34	06:10 18:37	05:45 20:46	04:39 21:49	04:15 22:21
25	08:34 16:24	07:24 17:36	06:07 18:39	05:43 20:48	04:37 21:51	04:16 22:21
26	08:32 16:26	07:21 17:39	06:04 18:42	05:40 20:50	04:35 21:52	04:16 22:21
27	08:30 16:28	07:19 17:41	06:01 18:44	05:37 20:52	04:34 21:54	04:17 22:21
28	08:29 16:30	07:16 17:43	05:59 18:46	18:15 (2) 20:54	04:32 21:56	04:17 22:21
29	08:27 16:33		06:56 19:48	19:14 (2) 20:57	04:31 21:58	04:18 22:21
30	08:25 16:35		06:53 19:50	19:13 (2) 20:59	04:29 21:59	04:19 22:20
31	08:23 16:37		06:50 19:53	19:12 (2) 19:23 (2)	04:28 22:01	
Potential sun hours	227	262	365	429	515	539
Total, worst case		97	140	62		
Sun reduction		0.19	0.40	0.43		
Oper. time red.		1.00	1.00	1.00		
Wind dir. red.		1.00	1.00	1.00		
Total reduction		0.19	0.40	0.43		
Total, real		19	56	26		

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

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Vilandes 3-6

LV-1010 Riga

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Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Ares - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (506)
Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	July	August	September	October	November	December
1	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	17:59 (4) 18:10 (4)	07:27 16:32
2	04:21 22:19	05:11 21:33	06:17 20:14	07:20 18:50	17:57 (4) 18:11 (4)	13 16:29
3	04:21 22:19	05:13 21:31	06:19 20:12	07:22 18:48	17:55 (4) 18:12 (4)	11 16:27
4	04:22 22:18	05:15 21:28	06:21 20:09	07:25 18:45	17:54 (4) 18:12 (4)	8 16:25
5	04:24 22:17	05:17 21:26	06:23 20:06	07:27 18:42	17:55 (4) 18:11 (4)	5 16:22
6	04:25 22:16	05:19 21:24	06:25 20:03	07:29 18:39	17:54 (4) 18:07 (4)	2 16:20
7	04:26 22:15	05:21 21:21	06:27 20:00	19:11 (2) 19:18 (2)	07:31 18:04 (4)	17:54 (4) 16:18
8	04:27 22:14	05:23 21:19	06:29 19:58	19:09 (2) 19:20 (2)	07:33 18:01 (4)	10 16:16
9	04:28 22:13	05:26 21:17	06:32 19:55	19:07 (2) 19:21 (2)	07:35 18:31	7 16:14
10	04:30 22:12	05:28 21:14	06:34 19:52	19:06 (2) 19:21 (2)	07:38 18:28	4 16:12
11	04:31 22:11	05:30 21:12	06:36 19:49	19:05 (2) 19:19 (2)	07:40 18:26	17:59 (4) 16:09
12	04:33 22:10	05:32 21:09	06:38 19:46	19:04 (2) 19:16 (2)	07:42 18:23	16:07
13	04:34 22:09	05:34 21:07	06:40 19:44	19:04 (2) 19:13 (2)	07:44 18:20	07:55 16:05
14	04:36 22:07	05:36 21:05	06:42 19:41	19:04 (2) 19:10 (2)	07:46 18:17	16:03
15	04:37 22:06	05:38 21:02	06:44 19:38	19:05 (2) 19:07 (2)	07:49 18:15	07:59 16:02
16	04:39 22:05	05:40 21:00	06:46 19:35	07:51 18:12	16:02	08:02 16:00
17	04:40 22:03	05:43 20:57	06:48 19:32	07:53 18:09	08:04 15:58	16:00 15:29
18	04:42 22:01	05:45 20:54	06:51 19:30	07:55 18:07	08:06 15:56	15:29 15:29
19	04:44 22:00	05:47 20:52	06:53 19:27	07:58 18:04	08:08 15:54	08:57 15:29
20	04:46 21:58	05:49 20:49	06:55 19:24	08:00 18:02	08:10 15:52	15:29 15:29
21	04:47 21:57	05:51 20:47	06:57 19:21	08:02 17:59	08:13 15:51	15:29 15:30
22	04:49 21:55	05:53 20:44	06:59 19:18	08:04 17:56	08:15 15:49	15:30 15:30
23	04:51 21:53	05:55 20:41	07:01 19:16	08:07 17:54	08:17 15:48	08:59 15:31
24	04:53 21:51	05:58 20:39	07:03 19:13	08:09 17:51	08:19 15:46	09:00 15:31
25	04:55 21:49	06:00 20:36	07:05 19:10	07:11 16:49	08:21 15:45	09:00 15:32
26	04:57 21:47	06:02 20:33	07:07 19:07	07:13 16:46	08:23 15:43	09:00 15:33
27	04:59 21:45	06:04 20:31	07:10 19:04	07:16 16:44	15:49 (11) 15:55 (11)	08:25 15:42
28	05:01 21:43	06:06 20:28	07:12 19:01	07:18 16:41	15:46 (11) 15:57 (11)	08:27 15:41
29	05:03 21:41	06:08 20:25	07:14 18:59	07:20 16:39	15:45 (11) 15:59 (11)	08:29 15:39
30	05:05 21:39	06:10 20:23	07:16 18:56	18:02 (4) 18:08 (4)	07:23 16:36	15:44 (11) 15:59 (11)
31	05:07 21:37	06:12 20:20		07:25 16:34	15:44 (11) 15:59 (11)	09:00 15:38
Potential sun hours	538	474	386	321	241	207
Total, worst case			96	171	39	
Sun reduction			0.46	0.28	0.08	
Oper. time red.			1.00	1.00	1.00	
Wind dir. red.			1.00	1.00	1.00	
Total reduction			0.46	0.28	0.08	
Total, real			44	48	3	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Corzemnieki - Shadow Receptor: 1.0×1.0 Azimuth: 3.1° Slope: 90.0° (689)
 Sunshine probability S (Average daily sunshine hours) []

Assumptions for shadow calculations

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
 0.80 1.82 4.75 6.09 9.67 10.05 8.16 7.72 5.94 2.93 0.63 0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:01 15:39	08:21 16:40	07:14 17:46	06:48 19:55	05:28 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:28 16:32	08:33 15:37
2	09:00 15:41	08:19 16:42	07:11 17:48	06:45 19:57	05:25 21:04	04:25 22:04	04:21 22:20	05:11 21:33	06:17 20:15	07:21 18:51	07:30 16:30	08:35 15:36
3	09:00 15:42	08:17 16:45	07:08 17:50	06:42 19:59	05:23 21:06	04:24 22:06	04:21 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:37 15:35
4	08:59 15:43	08:15 16:47	07:05 17:53	06:39 20:02	05:20 21:08	04:23 22:07	04:22 22:18	05:15 21:29	06:21 20:09	07:25 18:45	07:35 16:25	08:38 15:34
5	08:59 15:45	08:13 16:49	07:03 17:55	06:37 20:04	05:18 21:10	04:22 22:09	04:24 22:18	05:17 21:27	06:23 20:06	07:27 18:42	07:37 16:23	08:40 15:33
6	08:58 15:46	08:10 16:52	07:00 17:57	06:34 20:06	05:16 21:12	04:21 22:10	04:25 22:17	05:19 21:24	06:25 20:04	07:29 18:39	07:39 16:20	08:42 15:32
7	08:58 15:48	08:08 16:54	06:57 18:00	06:31 20:08	05:13 21:15	04:20 22:11	04:26 22:16	05:21 21:22	06:28 20:01	07:31 18:37	07:41 16:18	08:43 15:32
8	08:57 15:49	08:06 16:56	06:55 18:02	06:28 20:11	05:11 21:17	04:19 22:12	04:27 22:15	05:24 21:20	06:30 19:58	07:34 18:34	07:44 16:16	08:45 15:31
9	08:56 15:51	08:04 16:59	06:52 18:04	06:25 20:13	05:09 21:19	04:18 22:13	04:28 22:14	05:26 21:17	06:32 19:55	07:36 18:31	07:46 16:14	08:46 15:31
10	08:55 15:53	08:01 17:01	06:49 18:06	06:23 20:15	05:06 21:21	04:18 22:14	04:30 22:13	05:28 21:15	06:34 19:52	07:38 18:29	07:48 16:12	08:48 15:30
11	08:54 15:55	07:59 17:04	06:46 18:09	06:20 20:17	05:04 21:23	04:17 22:15	04:31 22:12	05:30 21:12	06:36 19:50	07:40 18:26	07:51 16:10	08:49 15:30
12	08:53 15:57	07:57 17:06	06:44 18:11	06:17 20:19	05:02 21:25	04:17 22:16	04:33 22:10	05:32 21:10	06:38 19:47	07:42 18:23	07:53 16:08	08:50 15:29
13	08:52 15:58	07:54 17:08	06:41 18:13	06:15 20:22	05:00 21:27	04:16 22:17	04:34 22:09	05:34 21:07	06:40 19:44	07:45 18:20	07:55 16:06	08:51 15:29
14	08:51 16:00	07:52 17:11	06:38 18:15	06:12 20:24	04:58 21:30	04:16 22:18	04:36 22:08	05:36 21:05	06:42 19:41	07:47 18:18	07:57 16:04	08:53 15:29
15	08:50 16:02	07:49 17:13	06:35 18:18	06:09 20:26	04:56 21:32	04:15 22:19	04:37 22:06	05:38 21:02	06:44 19:38	07:49 18:15	08:00 16:02	08:54 15:29
16	08:48 16:04	07:47 17:15	06:32 18:20	06:06 20:28	04:54 21:34	04:15 22:19	04:39 22:05	05:41 21:00	06:47 19:36	07:51 18:12	08:02 16:00	08:55 15:29
17	08:47 16:06	07:45 17:18	06:30 18:22	06:04 20:30	04:52 21:36	04:15 22:20	04:41 22:04	05:43 20:57	06:49 19:33	07:53 18:10	08:04 15:58	08:56 15:29
18	08:46 16:08	07:42 17:20	06:27 18:24	06:01 20:33	04:50 21:38	04:15 22:20	04:42 22:02	05:45 20:55	06:51 19:30	07:56 18:07	08:06 15:56	08:57 15:29
19	08:44 16:11	07:40 17:22	06:24 18:26	05:58 20:35	04:48 21:40	04:15 22:21	04:44 22:00	05:47 20:52	06:53 19:27	07:58 18:04	08:09 15:54	08:57 15:29
20	08:43 16:13	07:37 17:25	06:21 18:29	05:56 20:37	04:46 21:42	04:15 22:21	04:46 21:59	05:49 20:50	06:55 19:24	08:00 18:02	08:11 15:53	08:58 15:29
21	08:41 16:15	07:34 17:27	06:18 18:31	05:53 20:39	04:44 21:44	04:15 22:22	04:48 21:57	05:51 20:47	06:57 19:21	08:02 17:59	08:13 15:51	08:59 15:30
22	08:40 16:17	07:32 17:30	06:16 18:33	05:50 20:42	04:42 21:46	04:15 22:22	04:49 21:55	05:53 20:44	06:59 19:19	08:05 17:57	08:15 15:49	08:59 15:30
23	08:38 16:19	07:29 17:32	06:13 18:35	05:48 20:44	04:40 21:47	04:15 22:22	04:51 21:53	05:56 20:42	07:01 19:16	08:07 17:54	08:17 15:48	09:00 15:31
24	08:36 16:21	07:27 17:34	06:10 18:37	05:45 20:46	04:39 21:49	04:15 22:22	04:53 21:52	05:58 20:39	07:03 19:13	08:09 17:52	08:19 15:46	09:00 15:31
25	08:35 16:24	07:24 17:37	06:07 18:40	05:43 20:48	04:37 21:51	04:16 22:22	04:55 21:50	06:00 20:36	07:06 19:10	07:12 16:49	08:21 15:45	09:00 15:32
26	08:33 16:26	07:21 17:39	06:04 18:42	05:40 20:50	04:35 21:53	04:16 22:22	04:57 21:48	06:02 20:34	07:08 19:07	07:14 16:46	08:23 15:43	09:01 15:33
27	08:31 16:28	07:19 17:41	06:02 18:44	05:38 20:53	04:34 21:55	04:17 22:22	04:59 21:46	06:04 20:31	07:10 19:05	07:16 16:44	08:25 15:42	09:01 15:34
28	08:29 16:30	07:16 17:43	05:59 18:46	05:35 20:55	04:32 21:56	04:17 22:21	05:01 21:44	06:06 20:28	07:12 19:02	07:18 16:42	08:27 15:41	09:01 15:35
29	08:27 16:33		06:56 19:48	05:33 20:57	04:31 21:58	04:18 22:21	05:03 21:42	06:08 20:26	07:14 18:59	07:21 16:39	08:29 15:39	09:01 15:36
30	08:25 16:35		06:53 19:51	05:30 20:59	04:29 22:00	04:19 22:21	05:05 21:40	06:11 20:23	07:16 18:56	07:23 16:37	08:31 15:38	09:01 15:37
31	08:23 16:37		06:50 19:53		04:28 22:01		05:07 21:38	06:13 20:20		07:25 16:34		09:01 15:38
Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Last time (hh:mm) with flicker	(WTG causing flicker last time)
	Minutes with flicker		

Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa
Assumptions for shadow calculationsShadow receptor: Gerki - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (786)
Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January		February		March		April		May		June	
1	09:00		08:21		09:26 (7)	07:14	07:43 (10)	06:48	07:18 (9)	05:28	06:19 (5)	04:27
	15:40		16:40	37	10:03 (7)	17:46	21	08:04 (8)	19:55	64	08:38 (6)	21:01
2	09:00		08:19		09:26 (7)	07:11		07:42 (8)	06:45		07:18 (9)	05:25
	15:41		16:42	38	10:04 (7)	17:48	22	08:04 (8)	19:57	61	08:37 (6)	21:04
3	09:00		08:17		09:27 (7)	07:08		07:40 (8)	06:42		07:17 (9)	05:23
	15:42		16:45	37	10:04 (7)	17:51	25	08:05 (8)	20:00	60	08:36 (6)	21:06
4	08:59		08:15		09:26 (7)	07:06		07:39 (8)	06:39		07:18 (9)	05:21
	15:44		16:47	38	10:04 (7)	17:53	26	08:05 (8)	20:02	57	08:35 (6)	21:08
5	08:59		08:13		09:27 (7)	07:03		07:39 (8)	06:37		07:18 (9)	05:18
	15:45		16:49	37	10:04 (7)	17:55	28	08:07 (8)	20:04	53	08:33 (6)	21:10
6	08:58		08:10		09:27 (7)	07:00		07:38 (8)	06:34		07:18 (9)	05:16
	15:47		16:52	38	10:05 (7)	17:57	28	08:06 (8)	20:06	49	08:31 (6)	21:12
7	08:58		08:08		09:27 (7)	06:57		07:38 (8)	06:31		07:19 (9)	05:13
	15:48		16:54	37	10:04 (7)	18:00	28	08:06 (8)	20:08	42	08:28 (6)	21:15
8	08:57		08:06		09:28 (7)	06:55		07:37 (8)	06:28		07:21 (9)	05:11
	15:50		16:57	36	10:04 (7)	18:02	29	08:06 (8)	20:11	34	08:26 (6)	21:17
9	08:56		08:04		09:28 (7)	06:52		07:37 (8)	06:26		07:23 (9)	05:09
	15:52		16:59	35	10:03 (7)	18:04	28	08:05 (8)	20:13	21	08:21 (6)	21:19
10	08:55		08:01		09:29 (7)	06:49		07:38 (8)	06:23			05:07
	15:53		17:01	34	10:03 (7)	18:06	27	08:05 (8)	20:15			21:21
11	08:54		07:59		09:30 (7)	06:46		07:38 (8)	06:20			05:04
	15:55		17:04	32	10:02 (7)	18:09	26	08:04 (8)	20:17			21:23
12	08:53		07:57		09:30 (7)	06:44		07:38 (8)	06:17			05:02
	15:57		17:06	31	10:01 (7)	18:11	25	08:03 (8)	20:19			21:25
13	08:52		07:54		09:32 (7)	06:41		07:39 (8)	06:15			05:00
	15:59		17:09	28	10:00 (7)	18:13	22	08:01 (8)	20:22			21:27
14	08:51		07:52		09:33 (7)	06:38		07:20 (6)	06:12			04:58
	16:01		17:11	25	09:58 (7)	18:15	29	08:00 (8)	20:24			21:29
15	08:50		07:49		09:35 (7)	06:35		07:16 (6)	06:09			04:56
	16:03		17:13	22	09:57 (7)	18:18	34	07:58 (8)	20:26			21:32
16	08:48		07:47		09:37 (7)	06:33		07:12 (6)	06:07			04:54
	16:05		17:16	17	09:54 (7)	18:20	33	07:54 (8)	20:28			21:34
17	08:47		07:45		09:40 (7)	06:30		07:10 (6)	06:04		06:31 (5)	04:52
	16:07		17:18	10	09:50 (7)	18:22	28	07:38 (6)	20:30	9	06:40 (5)	21:36
18	08:46		07:42		06:27			07:08 (6)	06:01		06:28 (5)	04:50
	16:09	11	09:47 (7)	17:20		18:24	31	07:39 (6)	20:33	14	06:42 (5)	21:38
19	08:44		07:40		06:24			06:50 (3)	05:59		06:26 (5)	04:48
	16:11	16	09:50 (7)	17:23		18:27	36	07:40 (6)	20:35	18	06:44 (5)	21:40
20	08:43		07:37		06:21			06:47 (3)	05:56		06:23 (5)	04:46
	16:13	19	09:52 (7)	17:25		18:29	42	07:40 (6)	20:37	22	06:45 (5)	21:42
21	08:41		07:34		06:19			06:45 (3)	05:53		06:21 (1)	04:44
	16:15	22	09:53 (7)	17:27		18:31	47	07:42 (6)	20:39	25	06:46 (5)	21:44
22	08:40		07:32		06:16			06:42 (3)	05:51		06:18 (1)	04:42
	16:17	25	09:55 (7)	17:30		18:33	51	07:42 (6)	20:42	28	06:46 (5)	21:45
23	08:38		07:29		06:13			06:39 (3)	05:48		06:17 (1)	04:41
	16:19	26	09:56 (7)	17:32		18:35	55	07:42 (6)	20:44	30	06:47 (5)	21:47
24	08:36		07:27		07:55 (10)	06:10		06:37 (3)	05:45		06:17 (1)	04:39
	16:22	28	09:57 (7)	17:34	5	08:00 (10)	57	07:42 (6)	20:46	29	06:46 (5)	21:49
25	08:34		07:24		07:52 (10)	06:07		06:37 (3)	05:43		06:17 (1)	04:37
	16:24	31	09:59 (7)	17:37	8	08:00 (10)	57	07:42 (6)	20:48	30	06:47 (5)	21:51
26	08:33		07:22		07:49 (10)	06:05		06:31 (9)	05:40		06:17 (1)	04:36
	16:26	32	10:00 (7)	17:39	12	08:01 (10)	62	07:42 (6)	20:50	29	06:46 (5)	21:53
27	08:31		07:19		07:46 (10)	06:02		06:28 (9)	05:38		06:18 (5)	04:34
	16:28	33	10:01 (7)	17:41	15	08:01 (10)	63	07:42 (6)	20:53	28	06:46 (5)	21:55
28	08:29		07:16		07:44 (10)	05:59		06:25 (9)	05:35		06:19 (5)	04:32
	16:31	34	10:02 (7)	17:44	18	08:02 (10)	61	07:41 (6)	20:55	27	06:46 (5)	21:56
29	08:27		07:14		06:56			07:22 (9)	05:33		06:18 (5)	04:31
	16:33	34	10:01 (7)		19:49		61	08:40 (6)	20:57	27	06:45 (5)	21:58
30	08:25		07:11		06:53			07:19 (9)	05:30		06:19 (5)	04:30
	16:35	35	10:02 (7)		19:51		64	08:40 (6)	20:59	26	06:45 (5)	22:00
31	08:23		07:07		06:51			07:19 (9)				04:28
	16:38	36	10:03 (7)		19:53		64	08:40 (6)				22:01
Potential sun hours	227		262		365		429		515		539	
Total, worst case		382		590	1210		783		134			
Sun reduction		0.11		0.19	0.40		0.43		0.58			
Oper. time red.		1.00		1.00	1.00		1.00		1.00			
Wind dir. red.		1.00		1.00	1.00		1.00		1.00			
Total reduction		0.11		0.19	0.40		0.43		0.58			
Total, real		42		115	488		333		78			

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Last time (hh:mm) with flicker	(WTG causing flicker last time)

Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Gerki - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (786)
 Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	July	August	September	October	November	December
1	04:20	05:09	06:15	07:19	08:18 (8)	07:28
	22:20	21:35	20:17	18:53	24	08:42 (8)
2	04:21	05:11	06:17	07:21	08:16 (8)	07:30
	22:20	21:33	20:15	18:51	26	08:42 (8)
3	04:22	05:13	06:19	07:23	08:15 (8)	07:32
	22:19	21:31	20:12	18:48	27	08:42 (8)
4	04:23	05:15	06:21	07:25	08:15 (8)	07:35
	22:18	21:29	20:09	18:45	28	08:43 (8)
5	04:24	05:17	06:23	07:27	08:15 (8)	07:37
	22:18	21:26	20:06	18:42	28	08:43 (8)
6	04:25	05:20	06:26	07:29	08:14 (8)	07:39
	22:17	21:24	20:04	18:40	28	08:42 (8)
7	04:26	05:22	06:28	07:31	08:13 (8)	07:41
	22:16	21:22	20:01	18:37	29	08:42 (8)
8	04:27	05:24	06:30	07:34	08:14 (8)	07:44
	22:15	21:20	19:58	18:34	28	08:42 (8)
9	04:29	05:26	06:32	07:36	08:14 (8)	07:46
	22:14	21:17	19:55	18:31	27	08:41 (8)
10	04:30	05:28	06:34	07:38	08:14 (8)	07:48
	22:13	21:15	19:52	18:29	26	08:40 (8)
11	04:32	05:30	06:36	07:40	08:14 (8)	07:51
	22:12	21:12	19:50	18:26	24	08:38 (8)
12	04:33	05:32	06:38	07:42	08:16 (8)	07:53
	22:10	21:10	19:47	18:23	22	08:38 (8)
13	04:34	05:34	06:40	07:45	08:16 (10)	07:55
	22:09	21:07	19:44	18:21	20	08:36 (8)
14	04:36	05:37	06:42	07:47	08:17 (10)	07:57
	22:08	21:05	19:41	18:18	17	08:34 (10)
15	04:38	05:39	06:45	07:49	08:20 (10)	08:00
	22:06	21:02	19:38	18:15	14	08:34 (10)
16	04:39	05:41	06:47	07:51	08:22 (10)	08:02
	22:05	21:00	19:36	18:13	11	08:33 (10)
17	04:41	05:43	06:49	07:53	08:24 (10)	08:04
	22:03	20:57	19:33	18:10	7	08:31 (10)
18	04:43	05:45	06:51	07:56	08:27 (10)	08:06
	22:02	20:55	19:30	18:07	3	08:30 (10)
19	04:44	05:47	06:53	07:58	08:29	08:09
	22:00	20:52	19:27	18:05	15:55	26
20	04:46	05:49	06:55	08:00	08:11	09:05
	21:59	20:50	19:24	18:02	15:53	25
21	04:48	05:51	06:57	08:02	08:13	09:06
	21:57	20:47	19:22	17:59	15:51	22
22	04:50	05:54	06:59	08:05	08:15	09:09
	21:55	20:44	19:19	17:57	15:50	19
23	04:52	05:56	07:01	08:07	08:17	09:10
	21:53	20:42	19:16	17:54	15:48	16
24	04:53	05:58	07:04	08:09	08:19	09:13
	21:52	20:39	19:13	17:52	15:46	12
25	04:55	06:00	07:06	07:12	09:09 (7)	08:21
	21:50	20:36	19:10	16:49	09:22 (7)	15:45
26	04:57	06:02	07:08	07:14	09:05 (7)	08:23
	21:48	20:34	19:07	16:47	09:24 (7)	15:44
27	04:59	06:04	07:10	07:16	09:04 (7)	08:25
	21:46	20:31	19:05	16:44	09:27 (7)	15:42
28	05:01	06:06	07:12	07:18	09:02 (7)	08:27
	21:44	20:28	19:02	16:42	09:28 (7)	15:41
29	05:03	06:09	07:14	07:21	09:01 (7)	08:29
	21:42	20:26	18:59	16:39	09:30 (7)	15:40
30	05:05	06:11	07:16	07:23	08:59 (7)	08:31
	21:40	20:23	18:56	16:37	09:30 (7)	15:38
31	05:07	06:13		07:25	08:59 (7)	09:01
	21:38	20:20		16:34	09:32 (7)	15:38
Potential sun hours	538	474	386	321	241	207
Total, worst case		485	1346	563	749	
Sun reduction		0.50	0.46	0.28	0.08	
Oper. time red.		1.00	1.00	1.00	1.00	
Wind dir. red.		1.00	1.00	1.00	1.00	
Total reduction		0.50	0.46	0.28	0.08	
Total, real		245	622	159	59	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Flickering_Valka_Siemens_Gamesa

SIA Estonian, Latvian & Lithuanian environment
Vilandes 3-6
LV-1010 Riga
0037167242411
Baiba / baiba.ozolina@environment.lv
Calculated:
15/01/2026 18:42/4.1.254

Calculation: Flickering_Valka_Siemens_Gamesa
Assumptions for shadow calculations

Shadow receptor: Kirš i - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (504)
Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January		February		March		April		May		June		July		August		September		October		November		December	
1	09:00		08:21		15:53 (4)	07:13		17:10 (2)	06:47	05:27	04:27	04:20	05:09	06:15	07:18			07:27			15:24 (4)	08:33		
	15:39		16:40	10	16:03 (4)	17:46	6	17:16 (2)	19:55	21:01	22:02	22:20	21:35	20:17	18:53					16:32	15	15:39 (4)	15:37	
2	09:00		08:19		15:52 (4)	07:11		17:08 (2)	06:45	05:25	04:25	04:21	05:11	06:17	07:20			17:49 (2)	07:30		15:24 (4)	08:35		
	15:40		16:42	14	16:06 (4)	17:48	10	17:18 (2)	19:57	21:03	22:04	22:19	21:33	20:14	18:50	8	17:57 (2)	16:29	17	15:41 (4)	15:36			
3	09:00		08:17		15:52 (4)	07:08		17:07 (2)	06:42	05:23	04:24	04:21	05:13	06:19	07:22			17:46 (2)	07:32		15:23 (4)	08:36		
	15:42		16:44	16	16:08 (4)	17:50	13	17:20 (2)	19:59	21:06	22:05	22:19	21:31	20:12	18:48	13	17:59 (2)	16:27	18	15:41 (4)	15:35			
4	08:59		08:15		15:52 (4)	07:05		17:06 (2)	06:39	05:20	04:23	04:22	05:15	06:21	07:25			17:44 (2)	07:34		15:23 (4)	08:38		
	15:43		16:47	19	16:11 (4)	17:52	16	17:22 (2)	20:01	21:08	22:07	22:18	21:28	20:09	18:45	16	18:00 (2)	16:25	19	15:42 (4)	15:34			
5	08:59		08:12		15:52 (4)	07:02		17:05 (2)	06:36	05:18	04:22	04:24	05:17	06:23	07:27			17:44 (2)	07:37		15:22 (4)	08:40		
	15:45		16:49	21	16:13 (4)	17:55		20:17 (2)	20:04	21:10	22:08	22:17	21:26	20:06	18:42	18	18:02 (2)	16:22	20	15:42 (4)	15:33			
6	08:58		08:10		15:52 (4)	07:00		17:06 (2)	06:34	05:15	04:21	04:25	05:19	06:25	07:29			17:42 (2)	07:39		15:22 (4)	08:41		
	15:46		16:52	20	16:12 (4)	17:57	20	17:26 (2)	20:06	21:12	22:09	22:16	21:24	20:03	18:39	20	18:02 (2)	16:20	20	15:42 (4)	15:32			
7	08:57		08:08		15:53 (4)	06:57		17:06 (2)	06:31	05:13	04:20	04:26	05:21	06:27	07:31			17:41 (2)	07:41		15:23 (4)	08:43		
	15:48		16:54	19	16:12 (4)	17:59	20	17:26 (2)	20:08	21:14	22:11	22:16	21:22	20:01	18:37	21	18:02 (2)	16:18	19	15:42 (4)	15:32			
8	08:56		08:06		15:53 (4)	06:54		17:06 (2)	06:28	05:11	04:19	04:27	05:23	06:29	07:33			17:41 (2)	07:43		15:22 (4)	08:44		
	15:49		16:56	18	16:11 (4)	18:02	19	17:25 (2)	20:10	21:16	22:12	22:15	21:19	19:58	18:34	20	18:01 (2)	16:16	17	15:39 (4)	15:31			
9	08:56		08:03		15:54 (4)	06:52		17:06 (2)	06:25	05:09	04:18	04:28	05:26	06:32	07:36			17:41 (2)	07:46		15:23 (4)	08:46		
	15:51		16:59	17	16:11 (4)	18:04	18	17:24 (2)	20:12	21:19	22:13	22:14	21:17	19:55	18:31	18	17:59 (2)	16:14	14	15:37 (4)	15:31			
10	08:55		08:01		15:55 (4)	06:49		17:07 (2)	06:23	05:06	04:18	04:30	05:28	06:34	07:38			17:41 (2)	07:48		15:23 (4)	08:47		
	15:53		17:01	15	16:10 (4)	18:06	15	17:22 (2)	20:15	21:21	22:14	22:12	21:14	19:52	18:28	15	17:56 (2)	16:12	11	15:34 (4)	15:30			
11	08:54		07:59		15:57 (4)	06:46		17:10 (2)	06:20	05:04	04:17	04:31	05:30	06:36	07:40			17:41 (2)	07:50		15:25 (4)	08:49		
	15:55		17:03	12	16:09 (4)	18:08	11	17:21 (2)	20:17	21:23	22:15	22:11	21:12	19:49	18:26	12	17:53 (2)	16:09	7	15:32 (4)	15:30			
12	08:53		07:56		16:00 (4)	06:43		06:17	05:02	04:17	04:33	05:32	06:38	07:42	17:41 (2)	07:53								
	15:56		17:06	5	16:05 (4)	18:11		20:19	21:25	22:16	22:10	21:10	19:47	18:23	9	17:50 (2)	16:07	4	15:29 (4)	15:29				
13	08:52		07:54		16:04 (4)	18:11		05:00	04:14	05:04	04:14	05:34	06:34	07:34	17:43 (2)	16:05								
	15:58		17:08		18:13			20:21	21:27	22:17	22:09	21:07	19:44	18:20	5	17:48 (2)	16:05							
14	08:51		07:52		06:38			06:12	04:58	04:16	04:36	05:36	06:42	07:46										
	16:00		17:11		18:15			20:23	21:29	22:18	22:07	21:05	19:41	18:18										
15	08:49		07:49		06:35			06:09	04:56	04:15	04:37	05:38	06:44	07:49										
	16:02		17:13		18:17			20:26	21:31	22:18	22:06	21:02	19:38	18:15										
16	08:48		07:47		06:32			06:06	04:53	04:15	04:39	05:40	06:46	07:51										
	16:04		17:15		18:20			20:28	21:33	22:19	22:05	21:00	19:35	18:12										
17	08:47		07:44		06:29			06:04	04:51	04:15	04:40	05:43	06:48	07:53										
	16:06		17:18		18:22			20:30	21:35	22:20	22:03	20:57	19:32	18:10										
18	08:45		07:42		06:27			06:01	04:49	04:15	04:42	05:45	06:51	07:55										
	16:08		17:20		18:24			20:32	21:37	22:20	22:02	20:54	19:30	18:07										
19	08:44		07:39		06:24			05:58	04:44	04:15	04:48	05:47	06:53	07:58										
	16:10		17:22		18:26			20:35	21:39	22:20	22:00	20:52	19:27	18:04										
20	08:42		07:37		06:21			05:56	04:46	04:15	04:46	05:49	06:55	08:00										
	16:13		17:25		18:28			20:37	21:41	22:21	21:58	20:49	19:24	18:02										
21	08:41		07:34		06:18			05:53	04:44	04:15	04:47	05:51	06:57	08:02										
	16:15		17:27		18:31			20:39	21:43	22:21	21:57	20:47	19:21	17:59										
22	08:39		07:32		06:15			05:50	04:42	04:15	04:49	05:53	06:59	08:04										
	16:17		17:29		18:33			20:41	21:45	22:21	21:55	20:44	19:18	17:56										
23	08:38		07:29		06:13			05:48	04:40	04:15	04:51	05:55	07:01	08:07										
	16:19		17:32		18:35			20:43	21:47	22:21	21:53	20:41	19:16	17:54										
24	08:36		07:26		06:10			05:45	04:38	04:15	04:53	05:58	07:03	08:09										
	16:21		17:34		18:37			20:46	21:49	22:22	21:51	20:39	19:13	17:51										
25	08:34		07:24		06:07			05:43	04:37	04:16	04:55	06:00	07:05	07:11										
	16:24		17:36		18:39			20:48	21:51	22:21	21:49	20:36	19:10	16:49										
26	08:32		07:21		06:04			05:40	04:35	04:16	04:57	06:02	07:07	08:13										
	16:26		17:39		18:42			20:50	21:52	22:21	21:47	20:33	19:07	16:46										
27	08:31		07:19		06:01			05:37	04:34	04:17	04:59	06:04	07:10	07:16										
	16:28		17:41		18:44			20:52	21:54	22:21	21:45	20:31	19:04	16:44										
28	08:29		07:16		17:11 (2)	05:59		05:35	04:32	04:17	05:01	06:06	07:12	07:18										
	16:30		17:43	2	17:13 (2)	18:46		20:54	21:56	22:21	21:43	20:28	19:02	16:41										
29	08:27				06:56			05:32	04:31	04:18	05:03	06:08	07:14	07:20										
	16:33				19:48			20:57	21:58	22:21	21:41	20:25	18:59	16:39										
30	08:25		15:54 (4)		06:53			05:30	04:29	04:19	05:05	06:10	07:16	07:23										
	16:35	4	15:58 (4)		19:50			20:59	21:59	22:20	21:39	20:23	18:56	16:37	8	15:36 (4)	15:38							
31	08:23		15:53 (4)		06:50				04:28		05:07	06:12		07:25										
	16:37	7	16:00 (4)		19:53				22:01		21:37	20:20		16:34	13	15:39 (4)								
Potential sun hours	227		262		365			429	515	539	538	474	386	321		241								
Total, worst case	11		188		168				168							196		181						
Sun reduction	0.11		0.19		0.40				0.40							0.28		0.08						
Oper. time red.	1.00		1.00		1.00				1.00							1.00		1.00						
Wind dir. red.	1.00		1.00		1.00				1.00							1.00		1.00						
Total reduction	0.11		0.19		0.40											0.28		0.08						
Total, real	1		37		68											55		14						

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Minutes with flicker	Last time (hh:mm) with flicker
			(WTG causing flicker last time)

Project:

Flickering_Valka_Siemens_Gamesa

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 18:42/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Siemens_Gamesa Shadow receptor: Ž uldini 2 km dzvojama maja Nr.1 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (579)

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
0.80 1.82 4.75 6.09 9.67 10.05 8.16 7.72 5.94 2.93 0.63 0.41

No operational time reduction. It is assumed the WTGs are always running with worst case wind direction.

	January	February	March	April	May	June	July	August	September	October	November	December
1	09:00 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:27 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:18 18:53	07:27 16:32	08:33 15:37
2	09:00 15:40	08:19 16:42	07:11 17:48	06:45 19:57	05:25 21:04	04:25 22:04	04:20 22:20	05:11 21:33	06:17 20:15	07:20 18:50	07:30 16:29	08:35 15:36
3	09:00 15:42	08:17 16:44	07:08 17:50	06:42 19:59	05:23 21:06	04:24 22:06	04:21 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:37 15:35
4	08:59 15:43	08:15 16:47	07:05 17:53	06:39 20:02	05:20 21:08	04:23 22:07	04:22 22:18	05:15 21:29	06:21 20:09	07:25 18:45	07:34 16:25	08:38 15:34
5	08:59 15:45	08:13 16:49	07:03 17:55	06:36 20:04	05:18 21:10	04:22 22:08	04:23 22:18	05:17 21:26	06:23 20:06	07:27 18:42	07:37 16:23	08:40 15:33
6	08:58 15:46	08:10 16:52	07:00 17:57	06:34 20:06	05:15 21:12	04:21 22:10	04:25 22:17	05:19 21:24	06:25 20:03	07:29 18:39	07:39 16:20	08:42 15:32
7	08:57 15:48	08:08 16:54	06:57 17:59	06:31 20:08	05:13 21:14	04:20 22:11	04:26 22:16	05:21 21:22	06:27 20:01	07:31 18:37	07:41 16:18	08:43 15:32
8	08:57 15:49	08:06 16:56	06:54 18:02	06:28 20:10	05:11 21:17	04:19 22:12	04:27 22:15	05:23 21:19	06:30 19:58	07:33 18:34	07:44 16:16	08:45 15:31
9	08:56 15:51	08:04 16:59	06:52 18:04	06:25 20:13	05:09 21:19	04:18 22:13	04:28 22:14	05:26 21:17	06:32 19:55	07:36 18:31	07:46 16:14	08:46 15:30
10	08:55 15:53	08:01 17:01	06:49 18:06	06:23 20:15	05:06 21:21	04:18 22:14	04:30 22:13	05:28 21:15	06:34 19:52	07:38 18:28	07:48 16:12	08:48 15:30
11	08:54 15:55	07:59 17:03	06:46 18:08	06:20 20:17	05:04 21:23	04:17 22:15	04:31 22:12	05:30 21:12	06:36 19:49	07:40 18:26	07:51 16:10	08:49 15:30
12	08:53 15:56	07:57 17:06	06:43 18:11	06:17 20:19	05:02 21:25	04:16 22:16	04:33 22:10	05:32 21:10	06:38 19:47	07:42 18:23	07:53 16:07	08:50 15:29
13	08:52 15:58	07:54 17:08	06:41 18:13	06:14 20:21	05:00 21:27	04:16 22:17	04:34 22:09	05:34 21:07	06:40 19:44	07:44 18:20	07:55 16:05	08:51 15:29
14	08:51 16:00	07:52 17:11	06:38 18:15	06:12 20:24	04:58 21:29	04:16 22:18	04:36 22:08	05:36 21:05	06:42 19:41	07:47 18:18	07:57 16:03	08:52 15:29
15	08:50 16:02	07:49 17:13	06:35 18:17	06:09 20:26	04:56 21:31	04:15 22:19	04:37 22:06	05:38 21:02	06:44 19:38	07:49 18:15	08:00 16:02	08:54 15:29
16	08:48 16:04	07:47 17:15	06:32 18:20	06:06 20:28	04:53 21:34	04:15 22:19	04:39 22:05	05:40 21:00	06:46 19:35	07:51 18:12	08:02 16:00	08:55 15:29
17	08:47 16:06	07:44 17:18	06:30 18:22	06:04 20:30	04:51 21:36	04:15 22:20	04:40 22:03	05:43 20:57	06:49 19:33	07:53 18:10	08:04 15:58	08:56 15:29
18	08:46 16:08	07:42 17:20	06:27 18:24	06:01 20:33	04:49 21:38	04:15 22:20	04:42 22:02	05:45 20:55	06:51 19:30	07:56 18:07	08:06 15:56	08:56 15:29
19	08:44 16:10	07:39 17:22	06:24 18:26	05:58 20:35	04:48 21:40	04:15 22:21	04:44 22:00	05:47 20:52	06:53 19:27	07:58 18:04	08:08 15:54	08:57 15:29
20	08:43 16:13	07:37 17:25	06:21 18:29	05:56 20:37	04:46 21:42	04:15 22:21	04:46 21:59	05:49 20:49	06:55 19:24	08:00 18:02	08:11 15:52	08:58 15:29
21	08:41 16:15	07:34 17:27	06:18 18:31	05:53 20:39	04:44 21:43	04:15 22:21	04:47 21:57	05:51 20:47	06:57 19:21	08:02 17:59	08:13 15:51	08:59 15:30
22	08:39 16:17	07:32 17:29	06:16 18:33	05:50 20:41	04:42 21:45	04:15 22:22	04:49 21:55	05:53 20:44	06:59 19:19	08:05 17:57	08:15 15:49	08:59 15:30
23	08:38 16:19	07:29 17:32	06:13 18:35	05:48 20:44	04:40 21:47	04:15 22:22	04:51 21:53	05:55 20:42	07:01 19:16	08:07 17:54	08:17 15:48	09:00 15:31
24	08:36 16:21	07:27 17:34	06:10 18:37	05:45 20:46	04:38 21:49	04:15 22:22	04:53 21:51	05:58 20:39	07:03 19:13	08:09 17:51	08:19 15:46	09:00 15:31
25	08:34 16:24	07:24 17:36	06:07 18:40	05:43 20:48	04:37 21:51	04:16 22:22	04:55 21:50	06:00 20:36	07:05 19:10	07:11 16:49	08:21 15:45	09:00 15:32
26	08:33 16:26	07:21 17:39	06:04 18:42	05:40 20:50	04:35 21:53	04:16 22:22	04:57 21:48	06:02 20:34	07:08 19:07	07:14 16:46	08:23 15:43	09:01 15:33
27	08:31 16:28	07:19 17:41	06:02 18:44	05:37 20:52	04:34 21:54	04:17 22:22	04:59 21:46	06:04 20:31	07:10 19:04	07:16 16:44	08:25 15:42	09:01 15:34
28	08:29 16:30	07:16 17:43	05:59 18:46	05:35 20:55	04:32 21:56	04:17 22:21	05:01 21:44	06:06 20:28	07:12 19:02	07:18 16:41	08:27 15:41	09:01 15:34
29	08:27 16:33		06:56 19:48	05:32 20:57	04:31 21:58	04:18 22:21	05:03 21:42	06:08 20:25	07:14 18:59	07:21 16:39	08:29 15:39	09:01 15:35
30	08:25 16:35		06:53 19:51	05:30 20:59	04:29 22:00	04:19 22:21	05:05 21:40	06:10 20:23	07:16 18:56	07:23 16:37	08:31 15:38	09:01 15:36
31	08:23 16:37		06:50 19:53		04:28 22:01		05:07 21:37	06:13 20:20		07:25 16:34		09:01 15:38
Potential sun hours	227	262	365	429	516	539	539	475	386	321	241	207
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Last time (hh:mm) with flicker	(WTG causing flicker last time)
	Minutes with flicker		