

Project:

Flickering_Valka_Vestas162

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 15:10/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Astras - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (444)
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
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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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Vilandes 3-6

LV-1010 Riga

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Calculated:

15/01/2026 15:10/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Ausekli - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (770)
Sunshine probability S (Average daily sunshine hours) []

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

No operational time reduction. It 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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31	08:23 16:38		05:51 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		0.19							0.46		0.28	
Oper. time red.		1.00							1.00		1.00	
Wind dir. red.		1.00							1.00		1.00	
Total reduction		0.19							0.46		0.28	
Total, real		38							83		55	

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_Vestas162

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 15:10/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Avoti - Shadow Receptor: 1.0×1.0 Azimuth: 3.1° Slope: 90.0° (483)
 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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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	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	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	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 22:22	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 22:21	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	07:14 16:46	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	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	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 16:37	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	06:12 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_Vestas162

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 15:10/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 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.

	January		February		March		April		May		June	
1	09:00		14:46 (4)	08:21		07:13		16:31 (2)	06:48	05:27	04:27	
	15:39	7	14:53 (4)	16:40		17:46	8	16:39 (2)	19:55	21:01	22:02	
2	09:00		14:46 (4)	08:19		07:11			06:45	05:25	04:25	
	15:41	8	14:54 (4)	16:42		17:48			19:57	21:03	22:04	
3	09:00		14:46 (4)	08:17		07:08			06:42	05:23	04:24	
	15:42	10	14:56 (4)	16:44		17:50			19:59	21:06	22:05	
4	08:59		14:46 (4)	08:15		07:05			06:39	05:20	04:23	
	15:43	12	14:58 (4)	16:47		17:53			20:01	21:08	22:07	
5	08:59		14:46 (4)	08:12		07:03			06:36	05:18	04:22	
	15:45	13	14:59 (4)	16:49		17:55			20:04	21:10	22:08	
6	08:58		14:46 (4)	08:10		07:00			06:34	05:15	04:21	
	15:46	15	15:01 (4)	16:52		17:57			20:06	21:12	22:09	
7	08:57		14:46 (4)	08:08		06:57			06:31	05:13	04:20	
	15:48	17	15:03 (4)	16:54		17:59			20:08	21:14	22:11	
8	08:57		14:47 (4)	08:06		06:54			06:28	05:11	04:19	
	15:49	18	15:05 (4)	16:56		18:02			20:10	21:16	22:12	
9	08:56		14:47 (4)	08:03		06:52			06:25	05:09	04:18	
	15:51	20	15:07 (4)	16:59		18:04			20:12	21:19	22:13	
10	08:55		14:47 (4)	08:01		06:49			06:23	05:06	04:18	
	15:53	22	15:09 (4)	17:01		18:06			20:15	21:21	22:14	
11	08:54		14:47 (4)	07:59		06:46			06:20	05:04	04:17	
	15:55	22	15:09 (4)	17:03		18:08			20:17	21:23	22:15	
12	08:53		14:48 (4)	07:56		06:43			06:17	05:02	04:17	
	15:57	22	15:10 (4)	17:06		18:11			20:19	21:25	22:16	
13	08:52		14:47 (4)	07:54		06:41			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		16:28 (2)	06:38		06:12	04:58	04:16	
	16:00	23	15:11 (4)	17:11	10	16:38 (2)	18:15		20:24	21:29	22:18	
15	08:49		14:48 (4)	07:49		16:26 (2)	06:35		06:09	04:56	04:15	
	16:02	23	15:11 (4)	17:13	14	16:40 (2)	18:17		20:26	21:31	22:18	
16	08:48		14:49 (4)	07:47		16:26 (2)	06:32		06:06	04:53	04:15	
	16:04	23	15:12 (4)	17:15	17	16:43 (2)	18:20		20:28	21:33	22:19	
17	08:47		14:49 (4)	07:44		16:24 (2)	06:29		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		14:50 (4)	07:42		16:24 (2)	06:27		06:01	04:50	04:15	
	16:08	22	15:12 (4)	17:20	24	16:48 (2)	18:24		20:32	21:37	22:20	
19	08:44		14:50 (4)	07:39		16:23 (2)	06:24		05:58	04:48	04:15	
	16:10	22	15:12 (4)	17:22	26	16:49 (2)	18:26		20:35	21:39	22:21	
20	08:42		14:51 (4)	07:37		16:23 (2)	06:21		05:56	04:46	04:15	
	16:13	21	15:12 (4)	17:25	25	16:48 (2)	18:28		20:37	21:41	22:21	
21	08:41		14:52 (4)	07:34		16:22 (2)	06:18		05:53	04:44	04:15	
	16:15	20	15:12 (4)	17:27	26	16:48 (2)	18:31		20:39	21:43	22:21	
22	08:39		14:53 (4)	07:32		16:23 (2)	06:16		05:50	04:42	04:15	
	16:17	19	15:12 (4)	17:29	26	16:49 (2)	18:33		20:41	21:45	22:21	
23	08:38		14:54 (4)	07:29		16:23 (2)	06:13		05:48	04:40	04:15	
	16:19	17	15:11 (4)	17:32	25	16:48 (2)	18:35		20:43	21:47	22:22	
24	08:36		14:55 (4)	07:26		16:23 (2)	06:10		05:45	04:39	04:15	
	16:21	16	15:11 (4)	17:34	24	16:47 (2)	18:37		20:46	21:49	22:22	
25	08:34		14:57 (4)	07:24		16:24 (2)	06:07		05:43	04:37	04:16	
	16:24	13	15:10 (4)	17:36	23	16:47 (2)	18:39		20:48	21:51	22:22	
26	08:32		14:59 (4)	07:21		16:25 (2)	06:04		05:40	04:35	04:16	
	16:26	9	15:08 (4)	17:39	21	16:46 (2)	18:42		20:50	21:53	22:21	
27	08:31			07:19		16:26 (2)	06:02		05:37	04:34	04:17	
	16:28			17:41	18	16:44 (2)	18:44		20:52	21:54	22:21	
28	08:29			07:16		16:27 (2)	05:59		05:35	04:32	04:17	
	16:30			17:43	15	16:42 (2)	18:46		20:55	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		460		320		8						
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		50		62		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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SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 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 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	08:36 15:35 20
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 18
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 16
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 15
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 14
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 12
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 10
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 8
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 7
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 6
13	04:34 22:09	05:34 21:07	06:40 19:44	07:44 18:20	17:03 (2) 07:55	08:51 15:29 4
14	04:36 22:08	05:36 21:05	06:42 19:41	07:47 18:18	17:14 (2) 07:57	08:52 15:29 4
15	04:37 22:06	05:38 21:02	06:44 19:38	07:49 18:15	17:16 (2) 07:59	08:53 15:29 2
16	04:39 22:05	05:40 21:00	06:46 19:35	07:51 18:12	16:57 (2) 08:02	14:32 (4) 08:54
17	04:40 22:03	05:43 20:57	06:48 19:33	07:53 18:10	17:18 (2) 08:04	14:41 (4) 15:29 1
18	04:42 22:02	05:45 20:54	06:51 19:30	07:55 18:07	16:55 (2) 08:06	14:30 (4) 08:55
19	04:44 22:00	05:47 20:52	06:53 19:27	07:58 18:04	17:19 (2) 08:08	14:29 (4) 08:56
20	04:46 21:58	05:49 20:49	06:55 19:24	08:00 18:02	16:54 (2) 08:10	14:45 (4) 15:29
21	04:47 21:57	05:51 20:47	06:57 19:21	08:02 17:59	17:19 (2) 08:13	14:28 (4) 08:58
22	04:49 21:55	05:53 20:44	06:59 19:18	08:04 17:57	17:19 (2) 08:15	14:27 (4) 08:59
23	04:51 21:53	05:55 20:41	07:01 19:16	08:07 17:54	16:54 (2) 08:17	14:48 (4) 15:30
24	04:53 21:51	05:58 20:39	07:03 19:13	08:09 17:51	17:19 (2) 08:19	14:27 (4) 08:59
25	04:55 21:49	06:00 20:36	07:05 19:10	07:11 16:49	15:55 (2) 08:21	14:49 (4) 15:31
26	04:57 21:47	06:02 20:33	07:08 19:07	07:14 16:46	16:15 (2) 08:23	14:27 (4) 09:00
27	04:59 21:45	06:04 20:31	07:10 19:04	07:16 16:44	15:57 (2) 08:25	14:27 (4) 09:01
28	05:01 21:43	06:06 20:28	07:12 19:02	07:18 16:41	16:10 (2) 08:27	14:50 (4) 15:32
29	05:03 21:41	06:08 20:25	07:14 18:59	07:20 16:39	15:58 (2) 08:29	14:28 (4) 09:01
30	05:05 21:39	06:10 20:23	07:16 18:56	07:23 16:37	16:06 (2) 08:31	14:51 (4) 15:35
31	05:07 21:37	06:13 20:20		07:25 16:34	16:00 (2) 08:33	14:28 (4) 09:01
Potential sun hours	538	474	386	321	241	207
Total, worst case				327	296	198
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				92	23	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_Vestas162

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 15:10/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 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_Vestas162

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 15:10/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 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_Vestas162

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 15:10/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 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
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	07:16 20:22	07:23 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												
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_Vestas162

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 15:10/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Cimzesa 1 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (698)
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	21:26	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	21:20	19:58	18:34	16:16	15:31
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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
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
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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
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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SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Cimzesa 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	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	16:08	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	04:51	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
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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)	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_Vestas162

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 15:10/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Cimzesa iela 11 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (521)
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
	15:40	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_Vestas162

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 15:10/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Cimzesa 12 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (537)
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
	15:40	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	16:08	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	17:49	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	17:46	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	17:44	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	17:41	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	17:39	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	17:37	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		

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Cimzesa 14 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (514)
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
	15:40	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	16:08	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	15:34
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_Vestas162

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 15:10/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Cimzesa iela 16 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (543)
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
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_Vestas162

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 15:10/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Cimzesa iela 18 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (533)
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
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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SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Cimzesa 19 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (518)
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
	15:40	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
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	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
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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		21:37	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)	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_Vestas162

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 15:10/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Cimzesa 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
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_Vestas162

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 15:10/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Cimzesa 2 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (729)
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	21:26	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	21:20	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	19:35	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	22:03	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	17:30	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	15:34
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_Vestas162

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 15:10/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Cimzesa iela 20 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (559)
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		21:37	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)	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		

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Cimzesa iela 21 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (517)
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 22:08	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	04:52 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 21:37	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_Vestas162

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 15:10/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Cimzes iela 21A - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (542)
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 22:08	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	04:52 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)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Vestas162

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 15:10/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Cimzesa iela 22 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (592)
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	17:30	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
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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)	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_Vestas162

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 15:10/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Cimzesa iela 23 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (550)
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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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
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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 18:08	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	04:52 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)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Vestas162

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 15:10/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Cimzesa iela 24 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (591)
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	07:44 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 16:10	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 15:36
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	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_Vestas162

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 15:10/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Cimzesa iela 25 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (520)
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
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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
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
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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
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
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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_Vestas162

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 15:10/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Cimzesa iela 26 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (554)
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	07:44 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
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 15:36
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_Vestas162

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 15:10/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Cimzesa 27 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (558)
 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 18:08	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 21:31	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	04:40 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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SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Cimzesa iela 28 - Shadow Receptor: 1.0×1.0 Azimuth: 3.1° Slope: 90.0° (549)
 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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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
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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 21:51	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	05:38 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 15:36
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_Vestas162

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 15:10/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Cimzesa iela 29 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (553)
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 21:10	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 21:31	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	04:40 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 21:51	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	05:38 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		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)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Vestas162

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 15:10/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Cimzesa 3 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (714)
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	07:34	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
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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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	15:57	17:06	18:11	20:19	21:25	22:16	22:10	21:10	19:47	18:23	16:07	15:29
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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
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	17:49	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	17:46	15:43	15:33
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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	17:39	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	17:37	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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SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Cimzesa 30 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (572)
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	16:45	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	21:32	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		21:37	20:20		16:34		15:38
Potential sun hours	227	262	365	429	515	539	539	475	386	321	241	207
Total, worst case												
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_Vestas162

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 15:10/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Cimzesa 5 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (728)
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	07:34	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_Vestas162

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 15:10/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Cimzesa 7 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (718)
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	07:34	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
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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	18:09	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	17:49	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	17:46	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	17:44	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	17:41	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	17:39	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	17:37	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_Vestas162

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 15:10/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Cimzes iela 7a - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (736)
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
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_Vestas162

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 15:10/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Cimzesa 9 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (762)
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	07:34	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
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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
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	17:49	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	17:46	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	17:44	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	17:41	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	17:39	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	17:37	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_Vestas162

Licensed user:

SIA Estonian, Latvian & Lithuanian environment
Vilandes 3-6
LV-1010 Riga
0037167242411
Baiba / baiba.ozolina@environment.lv
Calculated:
15/01/2026 15:10/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 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	July	August	September	October	November	December
1	09:00	14:11 (4)	08:21	15:51 (2)	07:13	06:48	05:27	04:27	04:20	05:09	06:15	07:18
2	09:00	14:11 (4)	08:19	15:50 (2)	07:11	06:45	05:25	04:25	04:21	05:11	06:17	07:20
3	09:00	14:13 (4)	08:17	15:50 (2)	07:08	06:42	05:23	04:24	04:21	05:13	06:19	07:23
4	08:59	14:13 (4)	08:15	15:48 (2)	07:05	06:39	05:20	04:23	04:22	05:15	06:21	07:25
5	08:59	14:13 (4)	08:12	15:48 (2)	07:03	06:36	05:18	04:22	04:24	05:17	06:23	07:27
6	08:58	14:14 (4)	08:10	15:47 (2)	07:00	06:34	05:15	04:21	04:25	05:19	06:25	07:29
7	08:57	14:15 (4)	08:08	15:48 (2)	06:57	06:31	05:13	04:20	04:26	05:21	06:27	07:31
8	08:57	14:16 (4)	08:06	15:47 (2)	06:54	06:28	05:11	04:19	04:27	05:23	06:29	07:33
9	08:56	14:17 (4)	08:03	15:47 (2)	06:52	06:25	05:09	04:18	04:28	05:26	06:32	07:36
10	08:55	14:18 (4)	08:01	15:47 (2)	06:49	06:23	05:06	04:18	04:30	05:28	06:34	07:38
11	08:54	14:18 (4)	07:59	15:48 (2)	06:46	06:20	05:04	04:17	04:31	05:30	06:36	07:40
12	08:53	14:20 (4)	07:56	15:48 (2)	06:43	06:17	05:02	04:17	04:33	05:32	06:38	07:42
13	08:52	14:21 (4)	07:54	15:49 (2)	06:41	06:14	05:00	04:16	04:34	05:34	06:40	07:44
14	08:51	14:23 (4)	07:52	15:49 (2)	06:38	06:12	04:58	04:16	04:36	05:36	06:42	07:47
15	08:49	14:25 (4)	07:49	15:50 (2)	06:35	06:09	04:56	04:15	04:37	05:38	06:44	07:49
16	08:48	14:27 (4)	07:47	15:52 (2)	06:32	06:06	04:54	04:15	04:39	05:40	06:46	07:51
17	08:47	14:29 (4)	07:44	15:53 (2)	06:29	06:04	04:51	04:15	04:40	05:43	06:48	07:53
18	08:45	14:31 (4)	07:42	15:56 (2)	06:27	06:01	04:50	04:15	04:42	05:45	06:51	07:55
19	08:44	14:33 (4)	07:40	15:58 (2)	06:24	05:58	04:48	04:15	04:44	05:47	06:53	07:58
20	08:42	14:35 (4)	07:37	16:01 (2)	06:21	05:55	04:46	04:15	04:46	05:49	06:55	08:00
21	08:41	14:37 (4)	07:34	16:04 (2)	06:18	05:53	04:44	04:15	04:47	05:51	06:57	08:02
22	08:39	14:39 (4)	07:32	16:07 (2)	06:16	05:50	04:42	04:15	04:49	05:53	06:59	08:04
23	08:38	14:41 (4)	07:29	16:10 (2)	06:13	05:48	04:40	04:15	04:51	05:55	07:01	08:07
24	08:36	14:43 (4)	07:26	16:13 (2)	06:10	05:45	04:39	04:15	04:53	05:58	07:03	08:09
25	08:34	14:45 (4)	07:24	16:16 (2)	06:07	05:43	04:37	04:16	04:55	06:00	07:05	08:11
26	08:32	14:47 (4)	07:21	16:19 (2)	06:04	05:40	04:35	04:16	04:57	06:02	07:08	08:14
27	08:31	14:49 (4)	07:19	16:22 (2)	06:02	05:37	04:34	04:17	04:59	06:04	07:10	08:16
28	08:29	14:51 (4)	07:16	16:25 (2)	05:59	05:35	04:32	04:17	05:01	06:06	07:12	08:18
29	08:27	14:53 (4)	07:14	16:28 (2)	05:57	05:33	04:30	04:17	05:03	06:08	07:14	08:20
30	08:25	14:55 (2)	07:12	16:31 (2)	05:55	05:31	04:28	04:17	05:05	06:10	07:16	08:22
31	08:23	14:57 (2)	07:10	16:34 (2)	05:53	05:29	04:26	04:17	05:07	06:13	07:22	08:28
Potential sun hours	227	267	397	429	515	539	538	474	386	321	241	207
Total, worst case	0.11	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19
Sun reduction	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Oper. time red.	0.11	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19
Wind dir. red.	0.11	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19
Total reduction	0.11	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19
Total, real	29	77	77	77	77	77	77	77	77	77	77	77

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_Vestas162

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 15:10/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 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) []

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 15:40	08:21 16:40	07:14 17:46		06:48 19:55	07:53 (7) 21:01	05:28 20:19 (9)	04:27 22:03	05:09 (5) 49 06:15 (6)	
2	09:00 15:41	08:19 16:42	07:11 17:48		06:45 19:57	07:52 (7) 21:04	05:25 20:19 (9)	04:26 22:04	05:09 (5) 49 06:15 (6)	
3	09:00 15:42	08:17 16:45	07:08 17:51		06:42 20:00	07:52 (7) 21:06	05:23 20:18 (9)	04:25 22:06	05:10 (5) 47 06:15 (6)	
4	08:59 15:44	08:15 16:47	07:06 17:53		06:40 20:02	07:53 (7) 21:08	05:21 20:18 (9)	04:24 22:07	05:10 (5) 47 06:15 (6)	
5	08:59 15:45	08:13 16:50	07:03 17:55		06:37 20:04	07:53 (7) 21:10	05:18 20:18 (9)	04:22 22:08	05:10 (5) 47 06:15 (6)	
6	08:58 15:47	08:10 16:52	07:00 17:57		06:34 20:06	07:04 (8) 21:12	05:16 20:17 (9)	04:21 22:10	05:10 (5) 45 06:14 (6)	
7	08:57 15:48	08:08 16:54	06:57 18:00		06:31 20:08	06:58 (8) 21:15	05:14 20:16 (9)	04:21 22:11	05:10 (5) 45 06:14 (6)	
8	08:57 15:50	08:06 16:57	06:55 18:02		06:28 20:11	06:56 (8) 21:17	05:11 20:15 (9)	04:20 22:12	05:11 (5) 43 06:14 (6)	
9	08:56 15:52	08:04 16:59	06:52 18:04		06:26 20:13	06:54 (8) 21:19	05:09 20:13 (6)	04:19 22:13	05:11 (5) 42 06:13 (6)	
10	08:55 15:53	08:01 17:01	06:49 18:06		06:23 20:15	06:52 (8) 21:21	05:07 20:13 (6)	04:18 22:14	05:12 (5) 41 06:14 (6)	
11	08:54 15:55	07:59 17:04	06:46 18:09		06:20 20:17	06:52 (8) 21:23	05:04 20:14 (6)	04:18 22:15	05:12 (5) 39 06:13 (6)	
12	08:53 15:57	07:57 17:06	06:44 18:11		06:17 20:19	06:51 (8) 21:25	05:02 20:15 (6)	04:17 22:16	05:13 (5) 38 06:13 (6)	
13	08:52 15:59	07:54 17:09	06:41 18:13		06:15 20:22	06:50 (8) 21:27	05:00 20:15 (6)	04:16 22:17	05:13 (5) 38 06:13 (6)	
14	08:51 16:01	07:52 17:11	06:38 18:15		06:12 20:24	06:50 (8) 21:29	04:58 20:16 (6)	04:16 22:18	05:13 (5) 36 06:12 (6)	
15	08:50 16:03	07:49 17:13	06:35 18:18		06:09 20:26	06:49 (8) 21:31	04:56 20:16 (6)	04:16 22:19	05:14 (5) 34 06:12 (6)	
16	08:48 16:05	07:47 17:16	06:33 18:20		06:07 20:28	06:49 (8) 21:34	04:54 20:16 (6)	04:15 22:19	05:14 (5) 34 06:12 (6)	
17	08:47 16:07	07:45 17:18	06:30 18:22		06:04 20:30	06:49 (8) 21:36	04:52 20:16 (6)	04:15 22:20	05:14 (5) 34 06:12 (6)	
18	08:46 16:09	07:42 17:20	06:27 18:24	8	07:14 (7) 20:33	06:49 (8) 21:38	04:50 20:17 (6)	04:15 22:20	05:15 (5) 33 06:12 (6)	
19	08:44 16:11	07:40 17:23	06:24 18:27	18	07:09 (7) 20:35	06:50 (8) 21:40	04:48 20:17 (6)	04:15 22:21	05:15 (5) 32 06:12 (6)	
20	08:43 16:13	07:37 17:25	06:21 18:29	24	07:05 (7) 20:37	06:50 (8) 21:42	04:46 20:16 (6)	04:15 22:21	05:15 (5) 32 06:12 (6)	
21	08:41 16:15	07:34 17:27	06:19 18:31	28	07:04 (7) 20:39	06:52 (8) 21:43	04:44 20:17 (6)	04:15 22:21	05:15 (5) 32 06:12 (6)	
22	08:40 16:17	07:32 17:30	06:16 18:33	31	07:02 (7) 20:42	06:53 (8) 21:45	04:42 20:17 (6)	04:15 22:22	05:15 (5) 32 06:12 (6)	
23	08:38 16:20	07:29 17:32	06:13 18:35	34	07:00 (7) 20:44	06:56 (8) 21:47	04:41 20:17 (6)	04:16 22:22	05:16 (5) 32 06:13 (6)	
24	08:36 16:22	07:27 17:34	06:10 18:38	36	06:58 (7) 20:46	06:58 (7) 21:49	04:39 20:16 (6)	04:16 22:22	05:16 (5) 32 06:13 (6)	
25	08:34 16:24	07:24 17:37	06:07 18:40	37	06:57 (7) 20:48	06:11 (9) 21:51	04:37 20:16 (9)	04:16 22:22	05:16 (5) 33 06:13 (6)	
26	08:33 16:26	07:22 17:39	06:05 18:42	39	06:57 (7) 20:50	06:08 (9) 21:53	04:36 20:17 (6)	04:17 22:22	05:16 (5) 34 06:14 (6)	
27	08:31 16:29	07:19 17:41	06:02 18:44	41	06:55 (7) 20:53	06:06 (9) 21:54	04:34 20:16 (6)	04:17 22:21	05:16 (5) 34 06:14 (6)	
28	08:29 16:31	07:16 17:44	05:59 18:46	42	06:54 (7) 20:55	06:04 (9) 21:56	04:33 20:16 (6)	04:18 22:21	05:16 (5) 35 06:15 (6)	
29	08:27 16:33		06:56 19:49	41	07:54 (7) 20:57	06:01 (9) 21:58	04:31 20:16 (6)	04:19 22:21	05:17 (5) 36 06:16 (6)	
30	08:25 16:35		06:53 19:51	42	07:53 (7) 20:59	05:59 (9) 22:00	04:30 20:16 (6)	04:19 22:21	05:16 (5) 38 06:16 (6)	
31	08:23 16:38		06:51 19:53	43	07:53 (7) 08:36 (7)	04:28 22:01	05:09 (5) 06:15 (6)			
Potential sun hours	227	262	365		429		515	539		
Total, worst case			464		866		1078		1143	
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			187		368		627		639	

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_Vestas162

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 15:10/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 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) []

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	05:16 (5) 06:17 (6)	05:09 21:35	05:57 (6) 06:25 (6)	06:15 20:17	06:51 (8) 08:22 (7)	07:19 18:54	07:28 16:32	08:33 15:37
2	04:21 22:20	05:17 (5) 06:18 (6)	05:11 21:33	05:57 (6) 06:24 (6)	06:17 20:15	06:51 (8) 08:24 (7)	07:21 18:51	07:30 16:30	08:35 15:36
3	04:22 22:19	05:17 (5) 06:18 (6)	05:13 21:31	05:57 (6) 06:23 (6)	06:19 20:12	06:52 (8) 08:25 (7)	07:23 18:48	07:32 16:27	08:37 15:35
4	04:23 22:18	05:17 (5) 06:19 (6)	05:15 21:29	05:58 (6) 06:23 (9)	06:21 20:09	06:53 (8) 08:26 (7)	07:25 18:45	07:35 16:25	08:38 15:34
5	04:24 22:17	05:17 (5) 06:20 (6)	05:18 21:26	06:00 (6) 06:25 (9)	06:23 20:06	06:55 (8) 08:26 (7)	07:27 18:42	07:37 16:23	15:40 15:34
6	04:25 22:17	05:17 (5) 06:20 (6)	05:20 21:24	06:01 (6) 06:26 (9)	06:26 20:04	06:59 (8) 08:27 (7)	07:29 18:40	07:39 16:21	08:42 15:33
7	04:26 22:16	05:17 (5) 06:21 (6)	05:22 21:22	06:04 (6) 06:26 (9)	06:28 20:01	07:48 (7) 08:27 (7)	07:31 18:37	07:41 16:18	08:43 15:32
8	04:28 22:15	05:17 (5) 06:21 (6)	05:24 21:19	06:08 (6) 06:27 (9)	06:30 19:58	07:47 (7) 08:27 (7)	07:34 18:34	07:44 16:16	08:45 15:31
9	04:29 22:14	05:17 (5) 06:22 (6)	05:26 21:17	06:08 (9) 06:27 (9)	06:32 19:55	07:46 (7) 08:27 (7)	07:36 18:31	07:46 16:14	08:46 15:31
10	04:30 22:13	05:17 (5) 06:22 (6)	05:28 21:15	06:08 (9) 06:28 (9)	06:34 19:52	07:46 (7) 08:27 (7)	07:38 18:29	07:48 16:12	08:47 15:30
11	04:32 22:12	05:17 (5) 06:23 (6)	05:30 21:12	06:08 (9) 06:28 (9)	06:36 19:50	07:45 (7) 08:27 (7)	07:40 18:26	07:51 16:10	08:49 15:30
12	04:33 22:10	05:17 (5) 06:24 (6)	05:32 21:10	06:08 (9) 06:28 (9)	06:38 19:47	07:45 (7) 08:27 (7)	07:42 18:23	07:53 16:08	08:50 15:30
13	04:35 22:09	05:17 (5) 06:24 (6)	05:34 21:07	06:08 (9) 06:27 (9)	06:40 19:44	07:44 (7) 08:26 (7)	07:45 18:21	07:55 16:06	08:51 15:29
14	04:36 22:08	05:18 (5) 06:25 (6)	05:37 21:05	06:10 (9) 06:27 (9)	06:42 19:41	07:44 (7) 08:26 (7)	07:47 18:18	07:57 16:04	08:52 15:29
15	04:38 22:06	05:18 (5) 06:25 (6)	05:39 21:02	06:12 (9) 06:26 (9)	06:45 19:38	07:44 (7) 08:25 (7)	07:49 18:15	08:00 16:02	08:54 15:29
16	04:39 22:05	05:18 (5) 06:26 (6)	05:41 21:00	06:14 (9) 06:25 (9)	06:47 19:36	07:44 (7) 08:24 (7)	07:51 18:13	08:02 16:00	08:55 15:29
17	04:41 22:03	05:19 (5) 06:26 (6)	05:43 20:57	06:16 (9) 06:24 (9)	06:49 19:33	07:44 (7) 08:23 (7)	07:53 18:10	08:04 15:58	08:55 15:29
18	04:43 22:02	05:21 (5) 06:26 (6)	05:45 20:55	06:18 (9) 06:22 (9)	06:51 19:30	07:44 (7) 08:22 (7)	07:56 18:07	08:06 15:56	08:56 15:29
19	04:44 22:00	05:22 (5) 06:26 (6)	05:47 20:52		06:53 19:27	07:46 (7) 08:22 (7)	07:58 18:05	08:09 15:55	08:57 15:29
20	04:46 21:59	05:24 (5) 06:27 (6)	05:49 20:50	07:01 (8) 07:11 (8)	06:55 19:24	07:46 (7) 08:20 (7)	08:00 18:02	08:11 15:53	08:58 15:30
21	04:48 21:57	05:25 (5) 06:26 (6)	05:52 20:47	06:58 (8) 07:13 (8)	06:57 19:22	07:47 (7) 08:19 (7)	08:02 17:59	08:13 15:51	08:59 15:30
22	04:50 21:55	05:27 (5) 06:27 (6)	05:54 20:44	06:56 (8) 07:15 (8)	06:59 19:19	07:48 (7) 08:17 (7)	08:05 17:57	08:15 15:50	08:59 15:31
23	04:52 21:53	05:29 (5) 06:27 (6)	05:56 20:42	06:55 (8) 07:16 (8)	07:01 19:16	07:49 (7) 08:14 (7)	08:07 17:54	08:17 15:48	09:00 15:31
24	04:53 21:51	05:30 (5) 06:27 (6)	05:58 20:39	06:54 (8) 07:16 (8)	07:04 19:13	07:51 (7) 08:11 (7)	08:09 17:52	08:19 15:46	09:00 15:32
25	04:55 21:50	05:32 (5) 06:27 (6)	06:00 20:36	06:53 (8) 07:17 (8)	07:06 19:10	07:55 (7) 08:07 (7)	07:12 16:49	08:21 15:45	09:00 15:32
26	04:57 21:48	05:54 (6) 06:27 (6)	06:02 20:34	06:52 (8) 07:17 (8)	07:08 19:07		07:14 16:47	08:23 15:44	09:01 15:33
27	04:59 21:46	05:55 (6) 06:27 (6)	06:04 20:31	06:52 (8) 07:17 (8)	07:10 19:05		07:16 16:44	08:25 15:42	09:01 15:34
28	05:01 21:44	05:54 (6) 06:26 (6)	06:06 20:28	06:51 (8) 07:17 (8)	07:12 19:02		07:18 16:42	08:27 15:41	09:01 15:35
29	05:03 21:42	05:55 (6) 06:26 (6)	06:09 20:26	06:51 (8) 07:16 (8)	07:14 18:59		07:21 16:39	08:29 15:40	09:01 15:36
30	05:05 21:40	05:55 (6) 06:26 (6)	06:11 20:23	06:51 (8) 08:17 (7)	07:16 18:56		07:23 16:37	08:31 15:39	09:01 15:37
31	05:07 21:37	05:56 (6) 06:25 (6)	06:13 20:20	06:51 (8) 08:20 (7)			07:25 16:34	09:01 15:38	
Potential sun hours	538		474		386		321	241	207
Total, worst case	1328		646		967				
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	624		326		447				

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_Vestas162

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 15:10/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 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.

	January	February	March	April	May	June
1	09:00	08:21	07:13	16:34 (2)	06:48	05:27
	15:39	16:40	17:46	17	16:51 (2)	19:55
2	09:00	08:19	07:11	16:36 (2)	06:45	05:25
	15:41	16:42	17:48	13	16:49 (2)	19:57
3	09:00	08:17	07:08	16:39 (2)	06:42	05:23
	15:42	16:44	17:50	6	16:45 (2)	19:59
4	08:59	08:15	07:05		06:39	05:20
	15:43	16:47	17:53		20:01	21:08
5	08:59	08:12	07:03		06:36	05:18
	15:45	16:49	17:55		20:04	21:10
6	08:58	14:58 (4)	08:10		06:34	05:15
	15:46	3 15:01 (4)	16:52		20:06	21:12
7	08:57	14:58 (4)	08:08		06:31	05:13
	15:48	5 15:03 (4)	16:54		20:08	21:14
8	08:57	14:58 (4)	08:06		06:28	05:11
	15:49	7 15:05 (4)	16:56		20:10	21:16
9	08:56	14:58 (4)	08:03		06:25	05:09
	15:51	9 15:07 (4)	16:59		20:12	21:19
10	08:55	14:58 (4)	08:01		06:23	05:06
	15:53	11 15:09 (4)	17:01		20:15	21:21
11	08:54	14:58 (4)	07:59		06:20	05:04
	15:55	13 15:11 (4)	17:03		20:17	21:23
12	08:53	14:58 (4)	07:56		06:17	05:02
	15:57	15 15:13 (4)	17:06		20:19	21:25
13	08:52	14:57 (4)	07:54		06:14	05:00
	15:58	18 15:15 (4)	17:08		20:21	21:27
14	08:51	14:58 (4)	07:52		06:12	04:58
	16:00	20 15:18 (4)	17:11		20:24	21:29
15	08:49	14:58 (4)	07:49	16:39 (2)	06:09	04:56
	16:02	21 15:19 (4)	17:13	1 16:40 (2)	20:26	21:31
16	08:48	14:59 (4)	07:47	16:37 (2)	06:06	04:53
	16:04	22 15:21 (4)	17:15	6 16:43 (2)	20:28	21:33
17	08:47	14:58 (4)	07:44	16:35 (2)	06:04	04:51
	16:06	23 15:21 (4)	17:18	10 16:45 (2)	20:30	21:35
18	08:45	14:58 (4)	07:42	16:33 (2)	06:01	04:50
	16:08	23 15:21 (4)	17:20	14 16:47 (2)	20:32	21:37
19	08:44	14:59 (4)	07:39	16:33 (2)	05:58	04:48
	16:10	22 15:21 (4)	17:22	18 16:51 (2)	20:35	21:39
20	08:42	15:00 (4)	07:37	16:32 (2)	05:56	04:46
	16:13	22 15:22 (4)	17:25	21 16:53 (2)	20:37	21:41
21	08:41	15:00 (4)	07:34	16:31 (2)	05:53	04:44
	16:15	22 15:22 (4)	17:27	24 16:55 (2)	20:39	21:43
22	08:39	15:01 (4)	07:32	16:31 (2)	05:50	04:42
	16:17	21 15:22 (4)	17:29	25 16:56 (2)	20:41	21:45
23	08:38	15:01 (4)	07:29	16:31 (2)	05:48	04:40
	16:19	21 15:22 (4)	17:32	24 16:55 (2)	20:43	21:47
24	08:36	15:02 (4)	07:26	16:30 (2)	05:45	04:39
	16:21	20 15:22 (4)	17:34	25 16:55 (2)	20:46	21:49
25	08:34	15:03 (4)	07:24	16:31 (2)	05:43	04:37
	16:24	18 15:21 (4)	17:36	24 16:55 (2)	20:48	21:51
26	08:32	15:04 (4)	07:21	16:31 (2)	05:40	04:35
	16:26	17 15:21 (4)	17:39	23 16:54 (2)	20:50	21:53
27	08:31	15:05 (4)	07:19	16:32 (2)	05:37	04:34
	16:28	14 15:19 (4)	17:41	21 16:53 (2)	20:52	21:54
28	08:29	15:07 (4)	07:16	16:32 (2)	05:35	04:32
	16:30	11 15:18 (4)	17:43	20 16:52 (2)	20:55	21:56
29	08:27	15:10 (4)		06:56	05:32	04:31
	16:33	6 15:16 (4)		19:48	20:57	21:58
30	08:25			06:53	05:30	04:29
	16:35			19:50	20:59	21:59
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	384	256	36			
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	42	50	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)	Last time (hh:mm) with flicker	(WTG causing flicker last time)

Project:

Flickering_Valka_Vestas162

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 15:10/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 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
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
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
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 16:23	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 22:16	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	07:36 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	17:11 (2) 17:21 (2)	07:50 16:10
12	04:33 22:10	05:32 21:10	06:38 19:47	07:42 18:23	17:08 (2) 17:23 (2)	07:53 16:07
13	04:34 22:09	05:34 21:07	06:40 19:44	07:44 18:20	17:06 (2) 17:25 (2)	07:55 16:05
14	04:36 22:07	05:36 21:05	06:42 19:41	07:47 18:18	17:05 (2) 17:25 (2)	07:57 16:03
15	04:37 22:06	05:38 21:02	06:44 19:38	07:49 18:15	17:03 (2) 17:26 (2)	07:59 16:02
16	04:39 22:05	05:40 21:00	06:46 19:35	07:51 18:12	17:03 (2) 17:27 (2)	08:02 16:00
17	04:40 22:03	05:43 20:57	06:48 19:33	07:53 18:10	17:02 (2) 17:26 (2)	08:04 15:58
18	04:42 22:02	05:45 20:54	06:51 19:30	07:55 18:07	17:02 (2) 17:27 (2)	08:06 15:56
19	04:44 22:00	05:47 20:52	06:53 19:27	07:58 18:04	17:02 (2) 17:26 (2)	08:08 15:54
20	04:46 21:58	05:49 20:49	06:55 19:24	08:00 18:02	17:01 (2) 17:26 (2)	08:10 15:52
21	04:47 21:57	05:51 20:47	06:57 19:21	08:02 17:59	17:02 (2) 17:26 (2)	08:13 15:51
22	04:49 21:55	05:53 20:44	06:59 19:18	08:04 17:56	17:02 (2) 17:22 (2)	08:15 15:49
23	04:51 21:53	05:55 20:41	07:01 19:16	08:07 17:54	17:03 (2) 17:20 (2)	08:17 15:48
24	04:53 21:51	05:58 20:39	07:03 19:13	08:09 17:51	17:04 (2) 17:17 (2)	08:19 15:46
25	04:55 21:49	06:00 20:36	07:05 19:10	07:11 16:49	16:05 (2) 16:15 (2)	08:21 15:45
26	04:57 21:47	06:02 20:33	07:08 19:07	07:14 16:46	16:07 (2) 16:12 (2)	08:23 15:43
27	04:59 21:45	06:04 20:31	07:10 19:04	07:16 16:44	15:43 15:42	08:25 14:58
28	05:01 21:43	06:06 20:28	07:12 19:02	07:18 16:41	08:27 15:41	14:38 (4) 14:58 (4)
29	05:03 21:41	06:08 20:25	07:14 18:59	07:20 16:39	08:29 15:39	14:39 (4) 14:56 (4)
30	05:05 21:39	06:10 20:23	07:16 18:56	07:23 16:37	08:31 15:38	14:39 (4) 14:55 (4)
31	05:07 21:37	06:13 20:20	07:25 16:34	07:25 16:34		09:00 15:38
Potential sun hours	538	474	386	321	241	207
Total, worst case				298	334	50
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				84	26	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_Vestas162

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 15:10/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Darza jela 1 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (519)
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	07:44 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		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_Vestas162

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 15:10/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Darza iela 10 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (545)
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 16:11	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 16:41	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 15:36
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_Vestas162

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 15:10/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 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
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 21:10	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
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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 16:11	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
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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
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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 21:37	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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SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Darza iela 11 (94010030201005) - Shadow Receptor: 1.0 × 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
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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
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
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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)	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_Vestas162

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 15:10/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Darza iela 12 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (547)
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
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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 16:11	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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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
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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_Vestas162

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 15:10/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Darza iela 13 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (516)
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 15:36
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)	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		

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Darza iela 14 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (566)
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	16:45	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_Vestas162

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 15:10/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Darza iela 15 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (525)
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	16:45	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	04:19	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		21:37	20:20		16:34		15:38
Potential sun hours	227	262	365	429	515	539	539	475	386	321	241	207
Total, worst case												
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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SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Darza iela 16 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (515)
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 16:11	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
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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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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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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_Vestas162

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 15:10/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Darza iela 17 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (528)
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
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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
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
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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
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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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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)	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_Vestas162

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 15:10/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Darza iela 18 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (527)
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
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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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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
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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	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_Vestas162

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 15:10/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Darza iela 18A - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (567)
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 15:49	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	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_Vestas162

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 15:10/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Darza iela 19 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (530)
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	16:30	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	04:23	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
	15:50	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	04:19	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	17:52	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		21:37	20:20		16:34		15:38
Potential sun hours	227	262	365	429	515	539	539	475	386	321	241	207
Total, worst case												
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_Vestas162

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 15:10/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Darza iela 20 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (546)
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
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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
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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)	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_Vestas162

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 15:10/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Darza iela 20A - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (538)
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
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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 17:52	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
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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_Vestas162

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 15:10/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Darza iela 22 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (565)
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
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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
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	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_Vestas162

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 15:10/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Darza jela 3 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (544)
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 21:10	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		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_Vestas162

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 15:10/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Darza jela 4 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (564)
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
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
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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												
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Table layout: For each day in each month the following matrix apply

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Project:

Flickering_Valka_Vestas162

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 15:10/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Darza jela 5 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (548)
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	05:24	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
	16:10	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		21:38	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_Vestas162

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 15:10/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Darza jela 6 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (511)
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	05:24	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
	16:10	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	17:37	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	15:35
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)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Vestas162

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 15:10/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Darza jela 7 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (526)
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 16:11	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 16:41	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 15:36
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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SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Darza jela 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
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 16:41	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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SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Darza jela 9 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (552)
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	16:45	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_Vestas162

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 15:10/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Dumini - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (455)
 Sunshine probability S (Average daily sunshine hours) []

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

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		14:35 (12)	08:21		14:37 (4)	07:13			06:48		18:15 (2)	05:28		04:27			
	15:39	18	14:53 (12)	16:40	60	15:55 (13)	17:46			19:55	45	19:00 (2)	21:01		22:02			
2	09:00		14:34 (12)	08:19		14:37 (4)	07:11			06:45		18:14 (2)	05:25		04:25			
	15:41	20	14:54 (12)	16:42	61	15:55 (13)	17:48			19:57	46	19:00 (2)	21:03		22:04			
3	09:00		14:35 (12)	08:17		14:38 (4)	07:08			06:42		18:14 (2)	05:23		04:24			
	15:42	21	14:56 (12)	16:44	59	15:55 (13)	17:50			19:59	45	18:59 (2)	21:06		22:05			
4	08:59		14:35 (12)	08:15		14:37 (4)	07:05			06:39		18:13 (2)	05:20		04:23			
	15:43	22	14:57 (12)	16:47	57	15:54 (13)	17:53			20:01	46	18:59 (2)	21:08		22:07			
5	08:59		14:35 (12)	08:12		14:38 (4)	07:03			06:36		18:14 (2)	05:18		04:22			
	15:45	23	14:58 (12)	16:49	56	15:54 (13)	17:55			20:04	45	18:59 (2)	21:10		22:08			
6	08:58		14:35 (12)	08:10		14:38 (4)	07:00			06:34		18:13 (2)	05:16		04:21			
	15:46	24	14:59 (12)	16:52	55	16:16 (14)	17:57			20:06	45	18:58 (2)	21:12		22:09			
7	08:57		14:35 (12)	08:08		14:39 (4)	06:57			06:31		18:13 (2)	05:13		04:20			
	15:48	24	14:59 (12)	16:54	54	16:19 (14)	17:59			20:08	45	18:58 (2)	21:14		22:11			
8	08:57		14:36 (12)	08:06		14:39 (4)	06:54			06:28		18:13 (2)	05:11		04:19			
	15:50	24	15:00 (12)	16:56	50	16:22 (14)	18:02			20:10	44	18:57 (2)	21:16		22:12			
9	08:56		14:36 (12)	08:03		14:41 (4)	06:52			06:25		18:14 (2)	05:09		04:19			
	15:51	25	15:01 (12)	16:59	52	16:25 (14)	18:04			20:13	43	18:57 (2)	21:19		22:13			
10	08:55		14:37 (12)	08:01		14:41 (4)	06:49		17:30 (3)	06:23		18:14 (2)	05:06		04:18			
	15:53	25	15:02 (12)	17:01	54	16:27 (14)	18:06	6	17:36 (3)	20:15	41	18:55 (2)	21:21		22:14			
11	08:54		14:36 (12)	07:59		14:43 (4)	06:46		17:29 (3)	06:20		18:14 (2)	05:04		04:17			
	15:55	26	15:02 (12)	17:03	55	16:30 (14)	18:08	11	17:40 (3)	20:17	40	18:54 (2)	21:23		22:15			
12	08:53		14:37 (12)	07:56		14:44 (4)	06:43		17:27 (3)	06:17		18:15 (2)	05:02		04:17			
	15:57	26	15:03 (12)	17:06	54	16:30 (14)	18:11	15	17:42 (3)	20:19	41	19:49 (1)	21:25		22:16			
13	08:52		14:36 (12)	07:54		14:46 (4)	06:41		17:26 (3)	06:14		18:16 (2)	05:00		04:16			
	15:58	26	15:02 (12)	17:08	51	16:31 (14)	18:13	18	17:44 (3)	20:21	43	19:51 (1)	21:27		22:17			
14	08:51		14:37 (12)	07:52		14:47 (4)	06:38		17:25 (3)	06:12		18:16 (2)	04:58		04:16			
	16:00	26	15:03 (12)	17:11	49	16:31 (14)	18:15	21	17:46 (3)	20:24	43	19:52 (1)	21:29		22:18			
15	08:49		14:37 (12)	07:49		14:50 (4)	06:35		17:24 (3)	06:09		18:18 (2)	04:56		04:15			
	16:02	26	15:03 (4)	17:13	44	16:31 (14)	18:17	23	17:47 (3)	20:26	44	19:55 (1)	21:31		22:18			
16	08:48		14:38 (12)	07:47		14:55 (4)	06:32		17:23 (3)	06:06		18:19 (2)	04:54		04:15			
	16:04	27	15:05 (4)	17:15	34	16:31 (14)	18:20	23	17:46 (3)	20:28	44	19:57 (1)	21:33		22:19			
17	08:47		14:38 (12)	07:44		16:05 (14)	06:30		17:24 (3)	06:04		18:22 (2)	04:52		04:15			
	16:06	28	15:06 (4)	17:18	25	16:30 (14)	18:22	23	17:47 (3)	20:30	40	19:59 (1)	21:35		22:20			
18	08:45		14:39 (4)	07:42		16:06 (14)	06:27		17:24 (3)	06:01		18:24 (2)	04:50		04:15			
	16:08	28	15:07 (4)	17:20	25	16:31 (14)	18:24	22	17:46 (3)	20:32	37	20:00 (1)	21:37		22:20			
19	08:44		14:39 (4)	07:39		16:06 (14)	06:24		17:24 (3)	05:58		18:28 (2)	04:48		04:15			
	16:11	29	15:08 (4)	17:22	24	16:30 (14)	18:26	21	17:45 (3)	20:35	28	19:59 (1)	21:39		22:21			
20	08:42		14:39 (4)	07:37		16:06 (14)	06:21		17:24 (3)	05:56		19:41 (1)	04:46		04:15			
	16:13	31	15:10 (4)	17:25	23	16:29 (14)	18:28	20	17:44 (3)	20:37	18	19:59 (1)	21:41		22:21			
21	08:41		14:38 (4)	07:34		16:07 (14)	06:18		17:25 (3)	05:53		19:41 (1)	04:44		04:15			
	16:15	33	15:11 (4)	17:27	20	16:27 (14)	18:31	21	17:46 (2)	20:39	17	19:58 (1)	21:43		22:21			
22	08:39		14:38 (4)	07:32		16:09 (14)	06:16		17:27 (3)	05:50		19:43 (1)	04:42		04:15			
	16:17	34	15:12 (4)	17:29	17	16:26 (14)	18:33	24	17:51 (2)	20:41	14	19:57 (1)	21:45		22:21			
23	08:38		14:38 (4)	07:29		16:11 (14)	06:13		17:28 (2)	05:48		19:43 (1)	04:40		04:15			
	16:19	39	15:40 (13)	17:32	13	16:24 (14)	18:35	25	17:53 (2)	20:43	12	19:55 (1)	21:47		22:21			
24	08:36		14:37 (4)	07:26		16:14 (14)	06:10		17:25 (2)	05:45		19:47 (1)	04:39		04:16			
	16:21	44	15:43 (13)	17:34	6	16:20 (14)	18:37	29	17:54 (2)	20:46	5	19:52 (1)	21:49		22:22			
25	08:34		14:37 (4)	07:24			06:07		17:23 (2)	05:43			04:37		04:16			
	16:24	47	15:45 (13)	17:36			18:39	33	17:56 (2)	20:48			21:51		22:22			
26	08:32		14:37 (4)	07:21			06:04		17:21 (2)	05:40			04:35		04:16			
	16:26	51	15:48 (13)	17:39			18:42	35	17:56 (2)	20:50			21:53		22:21			
27	08:31		14:36 (4)	07:19			06:02		17:19 (2)	05:38			04:34		04:17			
	16:28	55	15:50 (13)	17:41			18:44	38	17:57 (2)	20:52			21:54		22:21			
28	08:29		14:36 (4)	07:16			05:59		17:19 (2)	05:35			04:32		04:18			
	16:30	58	15:52 (13)	17:43			18:46	40	17:59 (2)	20:55			21:56		22:21			
29	08:27		14:37 (4)				06:56		18:17 (2)	05:32			04:31		04:18			
	16:33	60	15:55 (13)				19:48	42	18:59 (2)	20:57			21:58		22:21			
30	08:25		14:37 (4)				06:53		18:16 (2)	05:30			04:29		04:19			
	16:35	61	15:55 (13)				19:50	43	18:59 (2)	20:59			21:59		22:20			
31	08:23		14:37 (4)				06:50		18:15 (2)				04:28					
	16:37	62	15:56 (13)				19:53	44	18:59 (2)				22:01					
Potential sun hours	227			262			365			429			515			539		
Total, worst case	1043			998			577			871								
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	114			194			232			371								

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		

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 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	05:09			06:15	18:13 (2)	07:18		18:06 (3)	07:27	14:10 (4)	08:33
	22:20	21:35			20:17	40 18:53 (2)	18:53	16	18:22 (3)	16:32	54 15:56 (14)	15:37
2	04:21	05:11			06:17	18:12 (2)	07:20		18:06 (3)	07:30	14:10 (4)	08:35
	22:19	21:33			20:14	41 18:53 (2)	18:50	13	18:19 (3)	16:29	52 15:54 (14)	15:36
3	04:22	05:13			06:19	18:12 (2)	07:23		18:08 (3)	07:32	14:09 (4)	08:36
	22:19	21:31			20:12	43 18:55 (2)	18:48	8	18:16 (3)	16:27	49 15:51 (14)	15:35
4	04:23	05:15			06:21	18:11 (2)	07:25		18:10 (3)	07:34	14:09 (4)	08:38
	22:18	21:28			20:09	44 18:55 (2)	18:45	3	18:13 (3)	16:25	55 15:49 (14)	15:34
5	04:24	05:17			06:23	18:10 (2)	07:27			07:37	14:08 (4)	08:40
	22:17	21:26			20:06	45 18:55 (2)	18:42			16:23	55 15:46 (14)	15:33
6	04:25	05:19			06:25	18:09 (2)	07:29			07:39	14:08 (4)	08:41
	22:16	21:24			20:03	45 18:54 (2)	18:39			16:20	54 15:23 (13)	15:33
7	04:26	05:21			06:27	18:09 (2)	07:31			07:41	14:08 (4)	08:43
	22:16	21:22			20:01	45 18:54 (2)	18:37			16:18	58 15:25 (13)	15:32
8	04:27	05:24			06:30	18:08 (2)	07:33			07:43	14:07 (4)	08:44
	22:15	21:19			19:58	46 18:54 (2)	18:34			16:16	60 15:25 (13)	15:31
9	04:28	05:26			06:32	18:08 (2)	07:36			07:46	14:08 (4)	08:46
	22:14	21:17			19:55	45 18:53 (2)	18:31			16:14	60 15:26 (13)	15:31
10	04:30	05:28			06:34	18:08 (2)	07:38			07:48	14:07 (4)	08:47
	22:12	21:14			19:52	45 18:53 (2)	18:28			16:12	62 15:26 (13)	15:30
11	04:31	05:30			06:36	18:08 (2)	07:40			07:50	14:08 (4)	08:49
	22:11	21:12			19:49	44 18:52 (2)	18:26			16:10	60 15:26 (13)	15:30
12	04:33	05:32			06:38	18:08 (2)	07:42			07:53	14:08 (4)	08:50
	22:10	21:10			19:47	43 18:51 (2)	18:23			16:08	61 15:26 (13)	15:29
13	04:34	05:34			06:40	18:08 (2)	07:44			07:55	14:08 (4)	08:51
	22:09	21:07			19:44	42 18:50 (2)	18:20			16:06	61 15:27 (13)	15:29
14	04:36	05:36			06:42	18:08 (2)	07:47			07:57	14:09 (4)	08:52
	22:07	21:05			19:41	41 18:49 (2)	18:18			16:04	58 15:25 (13)	15:29
15	04:37	05:38			06:44	18:08 (2)	07:49			07:59	14:09 (4)	08:53
	22:06	21:02			19:38	40 18:48 (2)	18:15			16:02	55 15:23 (13)	15:29
16	04:39	05:41			06:46	18:09 (2)	07:51			08:02	14:10 (4)	08:54
	22:05	21:00			19:35	38 18:47 (2)	18:12			16:00	51 15:21 (13)	15:29
17	04:41	05:43			06:49	18:09 (2)	07:53			08:04	14:10 (4)	08:55
	22:03	20:57			19:33	36 18:45 (2)	18:10			15:58	47 15:18 (13)	15:29
18	04:42	05:45			06:51	18:10 (2)	07:55		16:45 (14)	08:06	14:11 (4)	08:56
	22:02	20:55			19:30	34 18:44 (2)	18:07	9	16:54 (14)	15:56	44 15:17 (13)	15:29
19	04:44	05:47		19:51 (1)	06:53	18:11 (2)	07:58		16:41 (14)	08:08	14:12 (4)	08:57
	22:00	20:52	7	19:58 (1)	19:27	30 18:41 (2)	18:04	15	16:56 (14)	15:54	39 15:14 (13)	15:29
20	04:46	05:49		19:49 (1)	06:55	18:13 (2)	08:00		16:39 (14)	08:10	14:13 (4)	08:58
	21:58	20:49	11	20:00 (1)	19:24	26 18:39 (2)	18:02	18	16:57 (14)	15:53	34 14:47 (4)	15:29
21	04:48	05:51		19:47 (1)	06:57	18:13 (3)	08:02		16:38 (14)	08:13	14:13 (4)	08:58
	21:57	20:47	15	20:02 (1)	19:21	23 18:36 (2)	17:59	21	16:59 (14)	15:51	33 14:46 (4)	15:30
22	04:49	05:53		19:46 (1)	06:59	18:11 (3)	08:04		16:36 (14)	08:15	14:15 (4)	08:59
	21:55	20:44	16	20:02 (1)	19:18	22 18:33 (2)	17:57	23	16:59 (14)	15:49	31 14:46 (4)	15:30
23	04:51	05:55		19:45 (1)	07:01	18:09 (3)	08:07		16:36 (14)	08:17	14:16 (4)	08:59
	21:53	20:41	18	20:03 (1)	19:16	19 18:28 (3)	17:54	24	17:00 (14)	15:48	29 14:45 (4)	15:31
24	04:53	05:58		18:31 (2)	07:03	18:08 (3)	08:09		16:35 (14)	08:19	14:16 (4)	09:00
	21:51	20:39	29	20:03 (1)	19:13	20 18:28 (3)	17:51	25	17:00 (14)	15:46	28 14:44 (4)	15:31
25	04:55	06:00		18:26 (2)	07:05	18:07 (3)	07:11		15:35 (14)	08:21	14:16 (12)	09:00
	21:49	20:36	38	20:03 (1)	19:10	22 18:29 (3)	16:49	26	16:01 (14)	15:45	28 14:44 (4)	15:32
26	04:57	06:02		18:23 (2)	07:08	18:06 (3)	07:14		14:23 (4)	08:23	14:16 (12)	09:00
	21:47	20:33	42	20:01 (1)	19:07	22 18:28 (3)	16:46	37	16:00 (14)	15:43	27 14:43 (4)	15:33
27	04:59	06:04		18:21 (2)	07:10	18:05 (3)	07:16		14:19 (4)	08:25	14:16 (12)	09:01
	21:45	20:31	43	19:58 (1)	19:04	23 18:28 (3)	16:44	45	16:01 (14)	15:42	27 14:43 (12)	15:34
28	05:01	06:06		18:19 (2)	07:12	18:05 (3)	07:18		14:16 (4)	08:27	14:17 (12)	09:01
	21:43	20:28	44	19:56 (1)	19:02	23 18:28 (3)	16:41	49	16:00 (14)	15:41	27 14:44 (12)	15:35
29	05:03	06:08		18:17 (2)	07:14	18:05 (3)	07:20		14:15 (4)	08:29	14:18 (12)	09:01
	21:41	20:25	43	19:53 (1)	18:59	22 18:27 (3)	16:39	52	16:00 (14)	15:39	26 14:44 (12)	15:36
30	05:05	06:10		18:16 (2)	07:16	18:06 (3)	07:23		14:13 (4)	08:31	14:18 (12)	09:01
	21:39	20:23	43	19:51 (1)	18:56	19 18:25 (3)	16:37	53	15:59 (14)	15:38	26 14:44 (12)	15:37
31	05:07	06:13		18:14 (2)			07:25		14:12 (4)			09:00
	21:37	20:20	41	19:48 (1)			16:34	55	15:59 (14)			15:38
Potential sun hours	538	474			386		321		241		207	
Total, worst case			390		1028		492		1351		743	
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			197		475		139		106		46	

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

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

Flickering_Valka_Vestas162

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 15:10/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Gailenes - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (788)
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	11:13 (5) 11:33 (5)	08:21 16:40	09:34 (1) 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	11:14 (5) 11:34 (5)	08:19 16:42	09:35 (1) 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	11:15 (5) 11:33 (5)	08:17 16:45	09:37 (1) 17:50	06:42 19:57	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	11:16 (5) 11:33 (5)	08:15 16:47	09:41 (1) 17:53	06:39 19:57	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	11:17 (5) 11:32 (5)	08:13 16:49	09:41 (1) 17:55	06:37 19:55	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	11:18 (5) 11:32 (5)	08:10 16:52	09:41 (1) 17:57	06:34 19:55	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	11:20 (5) 11:31 (5)	08:08 16:54	09:41 (1) 18:00	06:31 19:55	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	11:21 (5) 11:30 (5)	08:06 16:56	09:41 (1) 18:02	06:28 19:55	05:11 21:17	04:19 22:12	04:27 22:15	05:24 21:20	06:30 20:01	07:34 18:34	07:44 16:16
9	08:56 15:51	11:22 (5) 09:42 (1)	08:04 16:59	09:41 (1) 18:04	06:26 19:55	05:09 21:19	04:19 22:13	04:29 22:14	05:26 21:17	06:32 20:01	07:36 18:31	07:46 16:14
10	08:55 15:53	11:23 (5) 09:44 (1)	08:01 17:01	09:41 (1) 18:06	06:23 19:55	05:06 21:21	04:18 22:14	04:30 22:13	05:28 21:15	06:34 20:01	07:38 18:29	07:48 16:12
11	08:54 15:55	11:24 (5) 09:45 (1)	07:59 17:04	09:41 (1) 18:09	06:20 19:55	05:04 21:23	04:17 22:15	04:31 22:12	05:30 21:12	06:36 20:01	07:40 18:26	07:51 16:10
12	08:53 15:57	11:25 (5) 09:46 (1)	07:57 17:06	09:41 (1) 18:11	06:17 19:55	05:02 21:25	04:17 22:16	04:33 22:10	05:32 21:10	06:38 20:01	07:42 18:23	07:53 16:08
13	08:52 15:59	11:26 (5) 09:47 (1)	07:54 17:08	09:41 (1) 18:13	06:15 19:55	05:00 21:27	04:16 22:17	04:34 22:09	05:34 21:07	06:40 20:01	07:45 18:20	07:55 16:06
14	08:51 16:00	11:27 (5) 09:48 (1)	07:52 17:11	09:41 (1) 18:15	06:12 19:55	04:58 21:29	04:16 22:18	04:36 22:08	05:36 21:05	06:42 20:01	07:47 18:18	07:57 16:04
15	08:50 16:02	11:28 (5) 09:49 (1)	07:49 17:13	09:41 (1) 18:16	06:09 19:55	04:56 21:32	04:15 22:19	04:37 22:06	05:39 21:02	06:44 20:01	07:49 18:15	08:00 16:02
16	08:48 16:04	11:29 (5) 09:50 (1)	07:47 17:15	09:41 (1) 18:18	06:06 19:55	04:54 21:34	04:15 22:19	04:39 22:05	05:41 21:00	06:47 20:01	07:51 18:12	08:02 16:00
17	08:47 16:06	11:30 (5) 09:51 (1)	07:45 17:18	09:41 (1) 18:20	06:04 19:55	04:52 21:36	04:15 22:20	04:41 22:03	05:43 20:57	06:49 20:01	07:53 18:10	08:04 15:58
18	08:46 16:09	11:31 (5) 09:52 (1)	07:42 17:20	09:41 (1) 18:22	06:01 19:55	04:50 21:38	04:15 22:20	04:42 22:02	05:45 20:55	06:51 20:01	07:56 18:07	08:06 15:56
19	08:44 16:11	11:32 (5) 09:53 (1)	07:40 17:23	09:41 (1) 18:24	05:58 19:55	04:48 21:40	04:15 22:21	04:44 22:00	05:47 20:52	06:53 20:01	07:58 18:04	08:09 15:54
20	08:43 16:13	11:33 (5) 09:54 (1)	07:37 17:25	09:41 (1) 18:26	05:56 19:55	04:46 21:42	04:15 22:21	04:46 22:00	05:49 20:52	06:55 20:01	08:00 18:04	08:11 15:54
21	08:41 16:15	11:34 (5) 09:55 (1)	07:34 17:27	09:41 (1) 18:29	05:53 19:55	04:44 21:44	04:15 22:21	04:48 22:00	05:51 20:52	06:57 20:01	08:02 18:02	08:13 15:53
22	08:40 16:17	11:35 (5) 09:56 (1)	07:32 17:30	09:41 (1) 18:31	05:51 19:55	04:42 21:44	04:15 22:21	04:49 22:00	05:53 20:52	06:59 20:01	08:05 18:04	08:15 15:54
23	08:38 16:19	11:36 (5) 09:57 (1)	07:29 17:32	09:41 (1) 18:33	05:48 19:55	04:40 21:45	04:15 22:22	04:51 22:00	05:56 20:44	07:01 20:01	08:07 18:04	08:17 15:54
24	08:36 16:22	11:37 (5) 09:58 (1)	07:27 17:34	09:41 (1) 18:35	05:45 19:55	04:39 21:47	04:16 22:22	04:53 22:00	05:58 20:42	07:03 20:01	08:09 18:04	08:19 15:54
25	08:34 16:24	11:38 (5) 09:59 (1)	07:24 17:37	09:41 (1) 18:37	05:43 19:55	04:37 21:49	04:16 22:22	04:55 22:00	06:00 20:39	07:06 20:01	07:12 18:04	08:21 15:54
26	08:33 16:26	11:39 (5) 10:00 (1)	07:21 17:39	09:41 (1) 18:40	05:40 19:55	04:35 21:51	04:16 22:22	04:57 22:00	06:02 20:36	07:08 20:01	07:14 18:04	08:23 15:54
27	08:31 16:28	11:40 (5) 10:01 (1)	07:19 17:41	09:41 (1) 18:42	05:38 19:55	04:34 21:53	04:17 22:22	04:59 22:00	06:04 20:34	07:10 20:01	07:16 18:04	08:25 15:54
28	08:29 16:31	11:41 (5) 10:02 (1)	07:16 17:44	09:41 (1) 18:44	05:35 19:55	04:32 21:55	04:18 22:22	05:01 22:00	06:06 20:31	07:12 20:01	07:18 18:04	08:27 15:54
29	08:27 16:33	11:42 (5) 10:03 (1)	07:14 17:46	09:41 (1) 18:46	05:33 19:55	04:31 21:56	04:18 22:21	05:03 22:00	06:08 20:28	07:14 20:01	07:21 18:04	08:29 15:54
30	08:25 16:35	11:43 (5) 10:04 (1)	07:13 17:48	09:41 (1) 18:48	05:30 19:55	04:29 21:58	04:19 22:21	05:05 22:00	06:11 20:26	07:16 20:01	07:23 18:04	08:31 15:54
31	08:23 16:38	11:44 (5) 10:05 (1)	07:11 17:50	09:41 (1) 18:51	05:27 19:55	04:28 22:00	04:18 22:21	05:07 22:00	06:13 20:23	07:25 20:01	07:25 18:04	08:31 15:54
Potential sun hours	227	262	365	429	515	539	538	475	386	321	241	207
Total, worst case	622	51										600
Sun reduction	0.11	0.19									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	0.11	0.19									0.08	0.06
Total, real	68	10									41	37

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_Vestas162

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 15:10/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 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.

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

Project:

Flickering_Valka_Vestas162

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 15:10/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Gaujas iela 11 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (577)
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	08:40 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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Flickering_Valka_Vestas162

SIA Estonian, Latvian & Lithuanian environment
Vilandes 3-6
LV-1010 Riga
0037167242411
Baiba / baiba.ozolina@environment.lv
Calculated:
15/01/2026 15:10/4.1.254

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Gravas - Shadow Receptor: 1.0 x 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

Sunshine probability \$ (Average daily sunshine hours) []											
Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
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	14:19 (4)	08:21	07:13	06:48	05:27	04:27	04:20	05:09	06:15	07:18	07:27	08:33
	15:39	23 14:42 (4)	16:40	17:46	19:55	21:01	22:02	22:20	21:35	20:17	18:53	16:32	26 15:25 (2) 08:33 19 14:26 (4)
2	09:00	14:19 (4)	08:19	07:11	06:45	05:25	04:25	04:21	05:11	06:17	07:20	07:30	15:26 (2) 08:35 14:07 (4)
	15:41	23 14:42 (4)	16:42	17:48	19:57	21:03	22:04	22:19	21:33	20:14	18:50	16:29	25 15:51 (2) 15:36 20 14:27 (4)
3	09:00	14:20 (4)	08:17	07:08	06:42	05:23	04:24	04:21	05:13	06:19	07:23	07:32	15:26 (2) 08:36 14:07 (4)
	15:42	23 14:43 (4)	16:44	17:50	19:59	21:06	22:05	22:19	21:31	20:12	18:48	16:27	24 15:50 (2) 15:35 20 14:27 (4)
4	08:59	14:21 (4)	08:15	07:05	06:39	05:20	04:23	04:22	05:15	06:21	07:25	07:34	15:27 (2) 08:38 14:07 (4)
	15:43	22 14:43 (4)	16:47	17:53	20:01	21:08	22:07	22:18	21:29	20:09	18:45	16:25	22 15:49 (2) 15:34 21 14:28 (4)
5	08:59	14:21 (4)	08:12	07:03	06:36	05:18	04:22	04:24	05:17	06:23	07:27	07:37	15:27 (2) 08:40 14:07 (4)
	15:45	22 14:43 (4)	16:49	17:55	20:04	21:10	22:08	22:17	21:26	20:06	18:42	16:23	19 15:46 (2) 15:33 22 14:29 (4)
6	08:58	14:22 (4)	08:10	07:00	06:34	05:15	04:21	04:25	05:19	06:25	07:29	07:39	15:28 (2) 08:41 14:08 (4)
	15:46	21 14:43 (4)	16:52	17:57	20:06	21:12	22:09	22:16	21:24	20:03	18:39	16:20	16 15:44 (2) 15:32 21 14:29 (4)
7	08:57	14:22 (4)	08:08	06:57	06:31	05:13	04:20	04:26	05:21	06:27	07:31	07:41	15:30 (2) 08:43 14:08 (4)
	15:48	22 14:44 (4)	16:54	17:59	20:08	21:14	22:11	22:16	21:22	20:01	18:37	16:18	12 15:42 (2) 15:32 22 14:30 (4)
8	08:57	14:23 (4)	08:06	06:56	06:28	05:11	04:19	04:27	05:23	06:29	07:33	07:44	15:31 (2) 08:44 14:09 (4)
	15:49	21 14:44 (4)	16:56	18:02	20:10	21:16	22:12	22:15	21:19	19:58	18:34	16:16	8 15:39 (2) 15:31 22 14:31 (4)
9	08:56	14:24 (4)	08:03	06:52	06:25	05:09	04:18	04:28	05:26	06:32	07:36	07:46	15:34 (2) 08:46 14:09 (4)
	15:51	20 14:44 (4)	16:59	18:04	20:13	21:19	22:13	22:14	21:17	19:55	18:31	16:14	3 15:37 (2) 15:31 22 14:31 (4)
10	08:55	14:25 (4)	08:01	06:49	06:23	05:06	04:18	04:30	05:28	06:34	07:38	07:48	15:30 (2) 08:47 14:09 (4)
	15:53	20 14:45 (4)	17:01	18:06	20:15	21:21	22:14	22:13	21:14	19:52	18:28	16:12	15:30 23 14:32 (4)
11	08:54	14:25 (4)	07:59	06:46	06:20	05:04	04:17	04:31	05:30	06:36	07:40	07:50	15:30 23 14:32 (4)
	15:55	19 14:44 (4)	17:03	18:08	20:17	21:23	22:15	22:11	21:12	19:49	18:26	16:10	15:30 23 14:32 (4)
12	08:53	14:26 (4)	07:56	06:43	06:17	05:02	04:17	04:33	05:32	06:38	07:42	07:53	15:30 23 14:32 (4)
	15:57	18 14:44 (4)	17:06	18:11	20:19	21:25	22:16	22:10	21:10	19:47	18:23	16:07	15:29 23 14:33 (4)
13	08:52	14:26 (4)	07:54	06:41	06:15	05:00	04:16	04:30	05:29	06:35	07:39	07:55	15:30 23 14:33 (4)
	15:58	18 14:44 (4)	17:08	18:13	20:21	21:27	22:17	22:09	21:07	19:44	18:20	16:05	15:29 23 14:33 (4)
14	08:51	14:28 (4)	07:52	06:38	06:12	04:58	04:16	04:36	05:36	06:42	07:47	07:57	15:30 23 14:33 (4)
	16:00	16 14:44 (4)	17:11	18:15	20:24	21:29	22:18	22:08	21:05	19:41	18:18	16:03	15:29 22 14:33 (4)
15	08:49	14:29 (4)	07:49	06:35	06:09	04:56	04:15	04:37	05:38	06:44	07:49	07:59	15:30 23 14:33 (4)
	16:02	14 14:43 (4)	17:13	18:17	20:26	21:31	22:18	22:06	21:02	19:38	18:15	16:02	15:29 22 14:33 (4)
16	08:48	14:31 (4)	07:47	06:32	06:06	04:53	04:15	04:39	05:40	06:46	07:51	08:02	15:30 23 14:33 (4)
	16:04	12 14:43 (4)	17:15	18:20	20:28	21:33	22:19	22:05	21:00	19:35	18:12	16:00	15:29 23 14:34 (4)
17	08:47	14:33 (4)	07:44	06:29	06:04	04:51	04:15	04:40	05:43	06:48	07:53	08:04	15:30 23 14:34 (4)
	16:06	8 14:41 (4)	17:18	18:22	20:30	21:35	22:20	22:03	20:57	19:33	18:10	15:58	15:29 22 14:34 (4)
18	08:45	07:42	16:00 (2)	06:27	06:01	04:50	04:15	04:42	05:45	06:51	07:55	08:06	15:30 23 14:34 (4)
	16:08	17:20	19 16:19 (2)	18:24	20:32	21:37	22:20	22:02	20:55	19:30	18:07	15:56	15:29 22 14:35 (4)
19	08:44	07:39	16:01 (2)	18:24	20:35	21:40	22:23	22:05	20:58	19:33	18:10	15:57	15:29 22 14:35 (4)
	16:10	17:22	16 16:04 (2)	18:25	20:35	21:39	22:21	22:00	20:52	19:27	18:04	15:54	15:29 22 14:35 (4)
20	08:42	07:37	16:04 (2)	18:26	20:36	21:41	22:24	22:06	20:59	19:34	18:11	15:58	15:29 22 14:36 (4)
	16:13	17:25	10 16:14 (2)	18:28	20:37	21:41	22:21	21:58	20:49	19:24	18:02	15:52	15:29 22 14:36 (4)
21	08:41	07:34	16:05 (2)	18:29	20:38	21:42	22:25	22:07	20:60	19:35	18:12	15:59	15:29 22 14:36 (4)
	16:15	17:27	16 16:05 (2)	18:31	20:39	21:43	22:21	21:57	20:47	19:21	17:59	1 16:40 (2) 15:51	15:30 22 14:36 (4)
22	08:39	07:32	16:06 (2)	18:32	20:40	21:44	22:26	22:08	20:61	19:36	18:13	15:60	15:30 22 14:36 (4)
	16:17	17:29	16 16:06 (2)	18:33	20:41	21:45	22:21	21:55	20:44	19:18	17:57	12 16:41 (2) 15:49	15:30 22 14:37 (4)
23	08:38	07:29	16:07 (2)	18:34	20:42	21:46	22:28	22:10	20:64	19:39	18:16	15:61 (2) 15:49	15:30 22 14:37 (4)
	16:19	17:32	16 16:07 (2)	18:35	20:43	21:47	22:22	21:53	20:41	19:16	17:54	16 16:42 (2) 15:48	15:31 22 14:37 (4)
24	08:36	07:26	16:08 (2)	18:36	20:44	21:48	22:30	22:12	20:65	19:40	18:17	15:62	15:31 22 14:37 (4)
	16:21	17:34	16 16:08 (2)	18:37	20:46	21:49	22:22	21:51	20:39	19:13	17:51	19 16:48 (2) 15:46	15:31 22 14:37 (4)
25	08:34	07:24	16:09 (2)	18:38	20:47	21:50	22:32	22:14	20:70	19:45	18:22	15:63	15:31 22 14:37 (4)
	16:24	17:36	16 16:09 (2)	18:39	20:48	21:51	22:22	21:49	20:36	19:10	16:49	22 15:50 (2) 15:45	8 14:19 (4) 15:32 23 14:39 (4)
26	08:32	07:21	16:10 (2)	18:40	20:49	21:52	22:34	22:16	20:73	19:48	18:25	15:64	15:31 22 14:39 (4)
	16:26	17:39	16 16:10 (2)	18:42	20:50	21:53	22:21	21:47	20:33	19:07	16:46	23 15:50 (2) 15:43	12 14:21 (4) 15:33 22 14:39 (4)
27	08:31	07:19	16:11 (2)	18:43	20:51	21:54	22:23	21:48	20:34	19:08	16:47	15:65	15:31 22 14:39 (4)
	16:28	17:41	16 16:11 (2)	18:44	20:52	21:55	22:21	21:46	20:31	19:04	16:44	24 15:51 (2) 15:42	14 14:22 (4) 15:34 22 14:39 (4)
28	08:29	07:16	16:12 (2)	18:45	20:53	21:56	22:25	22:06	20:37	19:11	16:49	15:66	15:31 22 14:39 (4)
	16:30	17:43	16 16:12 (2)	18:46	20:55	21:56	22:21	21:43	20:28	19:02	16:41	25 15:51 (2) 15:41	16 14:24 (4) 15:35 22 14:40 (4)
29	08:27	07:13	16:13 (2)	18:47	20:56	21:59	22:27	22:08	20:38	19:12	16:50	15:67	15:31 22 14:40 (4)
	16:33	17:46	16 16:13 (2)	18:48	20:57	21:58	22:21	21:41	20:25	18:59	16:39	26 15:52 (2) 15:39	17 14:25 (4) 15:35 23 14:40 (4)
30	08:25	07:11	16:14 (2)	18:49	20:58	22:00	22:29	22:10	20:39	19:13	16:51	15:68	15:31 22 14:40 (4)
	16:35	17:49	16 16:14 (2)	18:50	20:59	22:01	22:30	22:11	20:40	19:14	16:52	27 15:52 (2)	18 14:25 (4) 15:37 23 14:41 (4)
31	08:23	07:09	16:15 (2)	18:51	21:00	22:03	22:32	22:13	20:41	19:15	16:53	15:69	15:31 22 14:41 (4)
	16:37	17:53	16 16:15 (2)	18:53	21:02	22:05	22:34	22:15	20:42	19:16	16:54	27 15:52 (2)	18 14:25 (4) 15:37 23 14:41 (4)
Potential sun hours	227		262	365	429	515	539	538	474	386	321	241	207
Total, worst case		322	374									221	681
Sun reduction		0.11	0.19									0.28	0.06
Oper. time dir. red.		1.00	1.00									1.00	1.00
Wind, diff. red.		1.00	1.00									1.00	1.00
Total reduction		0.11	0.19									0.28	0.06
Total, real		35	73									19	42

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		

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 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	08:21	07:14	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	04:26	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	04:24	04:22	05:13	06:19	07:23	07:32	08:37	
	15:42	16:45	17:50	20:00	21:06	22:06	22:19	21:31	20:12	18:48	16:27	15:35	
4	08:59	08:15	07:06	06:39	05:20	04:23	04:23	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	18:40	16:20	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	16:56	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	06:26	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	
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	18:29	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	
	15:59	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	10:35 (5)
	16:00	17:11	18:15	20:24	21:30	22:18	22:08	21:05	19:41	18:18	16:04	15:29	4 10:39 (5)
15	08:50	07:50	06:35	06:09	04:56	04:15	04:37	05:39	06:44	07:49	08:00	08:54	10:34 (5)
	16:02	17:13	18:18	20:26	21:32	22:19	22:06	21:02	19:38	18:15	16:02	15:29	6 10:40 (5)
16	08:48	07:47	06:33	06:07	04:54	04:15	04:39	05:41	06:47	07:51	08:02	08:55	10:34 (5)
	16:04	17:16	18:20	20:28	21:34	22:19	22:05	21:00	19:36	18:12	16:00	15:29	7 10:41 (5)
17	08:47	07:45	06:30	06:04	04:52	04:15	04:41	05:43	06:49	07:53	08:04	08:56	10:34 (5)
	16:06	17:18	18:22	20:30	21:36	22:20	22:04	20:57	19:33	18:10	15:58	15:29	8 10:42 (5)
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	10:34 (5)
	16:09	17:20	18:24	20:33	21:38	22:20	22:02	20:55	19:30	18:07	15:56	15:29	9 10:43 (5)
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	10:34 (5)
	16:11	17:23	18:26	20:35	21:40	22:21	22:00	20:52	19:27	18:05	15:54	15:29	9 10:43 (5)
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	10:34 (5)
	16:13	17:25	18:29	20:37	21:42	22:21	21:59	20:50	19:24	18:02	15:53	15:30	10 10:44 (5)
21	08:41	07:34	06:19	05:53	04:44	04:15	04:48	05:51	06:57	08:02	08:13	08:59	10:35 (5)
	16:15	17:27	18:31	20:39	21:44	22:22	21:57	20:47	19:21	17:59	15:51	15:30	10 10:45 (5)
22	08:40	07:32	06:16	05:51	04:42	04:15	04:49	05:54	06:59	08:05	08:15	08:59	10:35 (5)
	16:17	17:30	18:33	20:42	21:46	22:22	21:55	20:44	19:19	17:57	15:49	15:30	10 10:45 (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	10:36 (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	10 10:46 (5)
24	08:36	07:27	06:10	05:45	04:39	04:16	04:53	05:58	07:04	08:09	08:19	09:00	10:37 (5)
	16:22	17:34	18:38	20:46	21:49	22:22	21:52	20:39	19:13	17:52	15:46	15:31	9 10:46 (5)
25	08:35	07:24	06:07	05:43	04:37	04:16	04:55	06:00	07:06	07:12	08:21	09:00	10:37 (5)
	16:24	17:37	18:40	20:48	21:51	22:22	21:50	20:36	19:10	16:49	15:45	15:32	9 10:46 (5)
26	08:33	07:22	06:05	05:40	04:35	04:16	04:57	06:02	07:08	07:14	08:23	09:01	10:38 (5)
	16:26	17:39	18:42	20:50	21:53	22:22	21:48	20:34	19:07	16:47	15:43	15:33	8 10:46 (5)
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	10:39 (5)
	16:28	17:41	18:44	20:53	21:55	22:22	21:46	20:31	19:05	16:44	15:42	15:34	7 10:46 (5)
28	08:29	07:16	05:59	05:35	04:32	04:18	05:01	06:06	07:12	07:18	08:27	09:01	10:40 (5)
	16:31	17:44	18:46	20:55	21:56	22:21	21:44	20:28	19:02	16:42	15:41	15:35	6 10:46 (5)
29	08:27		06:56	05:33	04:31	04:18	05:03	06:08	07:14	07:21	08:29	09:01	10:41 (5)
	16:33		19:49	20:57	21:58	22:21	21:42	20:26	18:59	16:39	15:39	15:36	5 10:46 (5)
30	08:25		06:53	05:30	04:29	04:19	05:05	06:11	07:16	07:23	08:31	09:01	10:43 (5)
	16:35		19:51	20:59	22:00	22:21	21:40	20:23	18:56	16:37	15:38	15:37	1 10:44 (5)
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		16:34		15:38	
Potential sun hours	227	262	365	429	515	539	539	475	386	321	241	207	128
Total, worst case													0.06
Sun reduction													1.00
Oper. time red.													1.00
Wind dir. red.													0.06
Total reduction													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)
	Minutes with flicker		

Project:

Flickering_Valka_Vestas162

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 15:10/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 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	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	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
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	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 21:12	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	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	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	08:01 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 15:59	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	07:50 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	08:54 15:29
16	08:48 16:04	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	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 16:09	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 17:23	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	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	07:34 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	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	04:49 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 21:47	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 16:22	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 15:31
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	07:22 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	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 17:44	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	09:01 15:35
29	08:27 16:33	07:14 17:49	05:56 18:49	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	09:01 15:36
30	08:25 16:35	07:12 17:51	05:53 18:51	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	07:10 17:53	05:51 18:53	05:28 22:01	04:28 22:01	04:28 22:21	05:07 21:38	06:13 20:20	07:25 16:34	07:25 16:34	09:01 15:38	09:01 15:38
Potential sun hours	227	262	365	429	515	539	539	475	386	321	241	207
Total, worst case												138
Sun reduction												0.06
Oper. time red.												1.00
Wind dir. red.												1.00
Total reduction												0.06
Total, real												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)
	Minutes with flicker		

Project:

Flickering_Valka_Vestas162

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 15:10/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 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	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
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	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 21:12	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	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	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	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	08:01 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 15:59	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	07:50 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	08:54 15:29
16	08:48 16:04	07:47 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	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 16:09	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 17:23	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 15:30
21	08:41 16:15	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	08:13 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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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 16:31	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	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	06:08 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 16:38		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_Vestas162

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 15:10/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Jasmini - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (800)
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 16:09	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
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
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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_Vestas162

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 15:10/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 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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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
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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	08:55 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	08:08 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	05:55 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.												
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_Vestas162

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 15:10/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 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	11:28 (5) 11:48 (5)	08:21 16:40	09:41 (1) 09:59 (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	08:33 15:37	09:16 (1) 09:38 (1)
2	09:00 15:41	11:29 (5) 11:49 (5)	08:19 16:42	09:43 (1) 09:58 (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	08:35 15:36	09:18 (1) 09:37 (1)
3	09:00 15:42	09:42 (1) 11:49 (5)	08:17 16:45	09:45 (1) 09:56 (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	08:37 15:35	09:20 (1) 09:37 (1)
4	08:59 15:43	09:41 (1) 11:48 (5)	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	09:22 (1) 11:30 (5)
5	08:59 15:45	09:40 (1) 11:48 (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	08:40 15:33	09:24 (1) 11:33 (5)
6	08:58 15:46	09:39 (1) 11:47 (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	08:42 15:33	09:25 (1) 11:33 (5)
7	08:58 15:48	09:38 (1) 11:47 (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 21:22	06:28 20:01	07:31 18:37	07:41 16:18	08:43 15:32	09:27 (1) 11:35 (5)
8	08:57 15:50	09:37 (1) 11:45 (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	07:34 18:34	07:44 16:16	08:45 15:31	09:29 (1) 11:36 (5)
9	08:56 15:51	09:36 (1) 11:43 (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	08:46 15:31	09:30 (1) 11:37 (5)
10	08:55 15:53	09:35 (1) 09:54 (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	08:48 15:30	09:31 (1) 11:38 (5)
11	08:54 15:55	09:34 (1) 09:55 (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	08:49 15:30	09:11 (1) 11:39 (5)
12	08:53 15:57	09:34 (1) 09:56 (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	08:50 15:29	09:10 (1) 11:40 (5)
13	08:52 15:59	09:34 (1) 09:57 (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	08:51 15:29	09:09 (1) 11:40 (5)
14	08:51 16:00	09:33 (1) 09:58 (1)	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	09:09 (1) 11:41 (5)
15	08:50 16:02	09:34 (1) 09:59 (1)	07:49 17:13		06:35 18:18	06:09 20:26	04:56 21:32	04:15 22:19	04:37 22:06	05:39 21:02	06:44 19:38	07:49 18:15	08:00 16:02	08:54 15:29	09:08 (1) 11:42 (5)
16	08:48 16:04	09:33 (1) 09:59 (1)	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	09:09 (1) 11:43 (5)
17	08:47 16:06	09:33 (1) 10:00 (1)	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	09:07 (1) 11:44 (5)
18	08:46 16:09	09:34 (1) 10:01 (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	08:56 15:29	09:07 (1) 11:44 (5)
19	08:44 16:11	09:34 (1) 10:01 (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 18:04	08:09 15:54	08:57 15:29	09:09 (1) 11:44 (5)
20	08:43 16:13	09:34 (1) 10:02 (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	08:58 15:30	09:09 (1) 11:45 (5)
21	08:41 16:15	09:34 (1) 10:02 (1)	07:34 17:27		06:19 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	09:10 (1) 11:46 (5)
22	08:40 16:17	09:34 (1) 10:02 (1)	07:32 17:30		06:16 18:33	05:51 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	09:10 (1) 11:46 (5)
23	08:38 16:19	09:34 (1) 10:03 (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	09:00 15:31	11:22 (5) 11:46 (5)
24	08:36 16:22	09:35 (1) 10:03 (1)	07:27 17:34		06:10 18:37	05:45 20:46	04:39 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	09:00 15:31	11:23 (5) 11:47 (5)
25	08:34 16:24	09:35 (1) 10:03 (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	08:06 17:12	08:21 15:45	09:00 15:32	11:24 (5) 11:47 (5)
26	08:33 16:26	09:36 (1) 10:03 (1)	07:21 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	08:07 16:47	08:23 15:43	09:01 15:33	11:24 (5) 11:47 (5)
27	08:31 16:28	09:37 (1) 10:03 (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	09:01 15:34	11:24 (5) 11:48 (5)
28	08:29 16:31	09:37 (1) 10:03 (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	09:01 15:35	11:25 (5) 11:48 (5)
29	08:27 16:33	09:37 (1) 10:02 (1)			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	11:26 (5) 11:49 (5)
30	08:25 16:35	09:39 (1) 10:02 (1)			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	11:26 (5) 11:48 (5)
31	08:23 16:38	09:40 (1) 10:01 (1)			06:51 19:53		04:28 22:01		05:07 21:38	06:13 20:20		07:25 16:34		09:01 15:38	11:27 (5) 11:49 (5)
Potential sun hours	227	756	44		365	429	515	539	538	475	386	321	241	566	706
Total, worst case		0.11	0.19											0.08	0.06
Sun reduction		1.00	1.00											1.00	1.00
Oper. time red.		1.00	1.00											1.00	1.00
Wind dir. red.		0.11	0.19											0.08	0.06
Total reduction		83	9											44	43

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_Vestas162

Licensed user:

SIA Estonian, Latvian & Lithuanian environment
Vilandes 3-6
LV-1010 Riga
0037167242411
Baiba / baiba.ozolina@environment.lv
Calculated:
15/01/2026 15:10/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 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	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 20:17	07:19 18:53	07:28 16:32	08:33 15:37
2	09:00 15:41	09:43 (6) 16:42	08:19 17:48	08:19 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	09:42 (6) 16:45	08:17 17:51	08:17 19:57	06:42 21:06	05:23 22:06	04:24 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	09:41 (6) 16:47	08:15 17:53	08:15 19:57	06:39 21:08	05:20 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	09:40 (6) 16:49	08:13 17:55	08:13 19:57	06:37 21:10	05:18 22:09	04:22 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	09:40 (6) 16:52	08:11 17:57	08:11 19:57	06:34 21:12	05:16 22:10	04:21 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	09:39 (6) 16:54	08:08 17:57	08:08 19:57	06:31 21:15	05:13 22:11	04:20 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	09:37 (6) 16:57	08:06 17:58	08:06 19:58	06:28 21:17	05:11 22:12	04:20 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	09:36 (6) 16:59	08:04 17:59	08:04 19:59	06:26 21:19	05:09 22:13	04:19 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	09:35 (6) 17:01	08:01 17:59	08:01 19:59	06:23 21:21	05:07 22:14	04:18 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 (6) 17:04	07:59 18:00	07:59 19:59	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	08:49 15:30
12	08:53 15:57	09:33 (6) 17:06	07:57 18:01	07:57 19:59	06:17 21:25	05:02 22:16	04:17 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	09:34 (6) 17:08	07:54 18:02	07:54 19:59	06:15 21:27	05:00 22:17	04:16 22:09	05:34 21:07	06:40 19:44	07:45 18:21	07:55 16:06	08:51 15:29
14	08:51 16:01	09:33 (6) 17:11	07:52 18:03	07:52 19:59	06:12 21:28	04:58 22:18	04:16 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	09:34 (6) 17:13	07:50 18:04	07:50 19:59	06:10 21:28	04:56 22:19	04:16 22:06	05:39 21:02	06:45 19:38	07:49 18:15	07:59 16:02	08:54 15:29
16	08:48 16:05	09:34 (6) 17:16	07:47 18:05	07:47 19:59	06:07 21:29	04:54 22:19	04:15 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 16:07	09:35 (6) 17:18	07:45 18:06	07:45 19:59	06:04 21:30	04:52 22:20	04:15 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	09:35 (6) 17:20	07:42 18:07	07:42 19:59	06:01 21:32	04:50 22:20	04:15 22:02	05:45 20:55	06:51 19:30	08:06 18:07	08:16 15:56	08:57 15:29
19	08:44 16:11	09:35 (6) 17:23	07:40 18:08	07:40 19:59	05:59 21:33	04:48 22:21	04:15 22:00	05:47 20:52	06:53 19:27	08:08 18:05	08:18 15:54	08:57 15:29
20	08:43 16:13	09:36 (6) 17:25	07:37 18:09	07:37 19:59	05:56 21:34	04:46 22:21	04:15 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 (6) 17:27	07:35 18:11	07:35 19:59	05:53 21:35	04:44 22:22	04:15 22:00	05:51 20:47	06:57 19:22	08:03 18:04	08:13 15:51	08:59 15:30
22	08:40 16:17	09:37 (6) 17:30	07:32 18:13	07:32 19:59	05:51 21:36	04:42 22:22	04:15 22:00	05:54 20:44	06:59 19:19	08:05 18:05	08:15 15:49	08:59 15:30
23	08:38 16:19	09:38 (6) 17:32	07:29 18:15	07:29 19:59	05:48 21:37	04:41 22:22	04:15 22:00	05:56 20:42	07:01 19:16	08:07 18:04	08:17 15:48	09:00 15:31
24	08:36 16:22	09:39 (6) 17:34	07:27 18:17	07:27 19:59	05:45 21:38	04:39 22:22	04:16 22:00	05:58 20:39	07:04 19:13	08:09 18:04	08:19 15:46	09:00 15:32
25	08:35 16:24	09:40 (6) 17:37	07:24 18:19	07:24 19:59	05:43 21:39	04:37 22:22	04:16 22:00	05:56 20:36	07:06 19:10	08:12 18:04	08:21 15:45	09:00 15:32
26	08:33 16:26	09:42 (6) 17:39	07:22 18:21	07:22 19:59	05:40 21:40	04:36 22:22	04:17 22:00	05:57 20:34	07:08 19:07	08:14 18:04	08:23 15:44	09:01 15:33
27	08:31 16:28	09:45 (6) 17:41	07:19 18:23	07:19 19:59	05:38 21:41	04:34 22:22	04:17 22:00	05:59 20:31	07:10 19:05	08:16 18:04	08:25 15:42	09:01 15:34
28	08:29 16:31	09:50 (6) 17:44	07:16 18:25	07:16 19:59	05:35 21:42	04:32 22:21	04:18 22:00	06:06 20:28	07:12 19:02	08:18 18:04	08:27 15:41	09:01 15:35
29	08:27 16:33		07:14 18:27	07:14 19:59	05:33 21:43	04:31 22:21	04:18 22:00	06:09 20:26	07:14 18:59	08:19 18:04	08:29 15:40	09:01 15:36
30	08:25 16:35		07:12 18:29	07:12 19:59	05:30 21:44	04:30 22:21	04:19 22:00	06:11 20:23	07:16 18:56	08:23 18:00	08:31 15:38	09:01 15:37
31	08:23 16:38		07:10 18:31	07:10 19:59	05:28 21:45	04:28 22:21	05:07 21:38	06:13 20:20	07:25 18:54			09:01 15:38
Potential sun hours	227	262	365	429	515	539	538	474	386	321	241	207
Total, worst case	387	189								191	286	101
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	42	37								54	22	6

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)

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 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_Vestas162

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 15:10/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Jauna iela 1 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (676)
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	06:46 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_Vestas162

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 15:10/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 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.

	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	20:10	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
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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
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	21:45	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	08:35	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_Vestas162

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 15:10/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 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
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 21:46	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_Vestas162

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 15:10/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 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
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed 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 16:07	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
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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 20:41	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
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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_Vestas162

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 15:10/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 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
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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
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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 20:11	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
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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_Vestas162

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 15:10/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 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 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_Vestas162

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 15:10/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Jauna iela 7 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (656)
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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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_Vestas162

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 15:10/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Kalngulbj - 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	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	05:13 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	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 17:20	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	08:06 15:56	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	05:49 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	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	05:40 20:50	04:36 21:53	04:17 22:22	04:57 21:48	06:02 20:34	07:08 19:08	07:14 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)	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		

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Kalnieši - 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	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	07:11 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	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	05:09 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	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	07:53 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	08:50 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	07:16 20:23	07:23 18:56	07:31 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												
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_Vestas162

Licensed user:

SIA Estonian, Latvian & Lithuanian environment
Vilandes 3-6
LV-1010 Riga
0037167242411
Baiba / baiba.ozolina@environment.lv
Calculated:
15/01/2026 15:10/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 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	July	August	September	October	November	December
1	09:01 15:40	08:21 16:40	09:01 (6) 17:46	07:41 (5) 19:55	05:28 21:01	04:27 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:19 18:54		
2	09:00 15:41	08:19 16:42	09:00 (6) 17:48	07:38 (5) 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	5 16:30	08:45 (6) 15:37
3	09:00 15:42	08:17 16:45	09:01 (6) 17:51	07:38 (5) 19:57	05:23 21:06	04:25 22:06	04:22 22:19	05:13 21:31	06:19 20:12	07:23 18:48	11 16:27	08:47 (6) 15:36
4	08:59 15:44	08:15 16:47	09:01 (6) 17:53	07:39 (5) 19:58	05:21 21:08	04:23 22:07	04:23 22:18	05:15 21:29	06:21 20:09	07:25 18:45	14 16:25	08:49 (6) 15:35
5	08:59 15:45	08:13 16:49	09:02 (6) 17:55	07:39 (5) 19:58	05:18 21:10	04:22 22:09	04:24 22:18	05:17 21:27	06:23 20:06	07:27 18:42	7 16:23	08:50 (6) 15:34
6	08:58 15:47	08:11 16:52	09:03 (6) 17:57	07:39 (5) 19:58	05:16 21:12	04:21 22:10	04:25 22:17	05:20 21:24	06:26 20:04	07:29 18:40	18 16:25	08:51 (6) 15:34
7	08:58 15:48	08:08 16:54	09:03 (6) 18:00	07:40 (5) 19:59	05:13 21:15	04:20 22:11	04:26 22:17	05:22 21:22	06:28 20:01	07:32 18:37	12 16:25	08:51 (6) 15:33
8	08:57 15:50	08:06 16:57	09:05 (6) 18:02	07:41 (5) 19:59	05:11 21:17	04:20 22:12	04:27 22:15	05:24 21:20	06:30 20:00	07:34 18:34	15 16:25	08:52 (6) 15:32
9	08:56 15:51	08:04 16:59	09:07 (6) 18:04	07:41 (5) 19:59	05:09 21:19	04:19 22:13	04:29 22:14	05:26 21:17	06:32 20:00	07:36 18:31	18 16:25	08:53 (6) 15:31
10	08:55 15:53	08:01 17:01	09:11 (6) 18:06	07:41 (5) 19:59	05:07 21:21	04:18 22:14	04:30 22:13	05:28 21:15	06:34 20:00	07:38 18:29	19 16:25	08:53 (6) 15:30
11	08:54 15:55	07:59 17:04	09:14 (6) 18:06	07:41 (5) 19:59	05:04 21:23	04:17 22:15	04:31 22:12	05:30 21:12	06:36 20:00	07:40 18:26	20 16:25	08:53 (6) 15:30
12	08:53 15:57	07:57 17:06	09:14 (6) 18:06	07:41 (5) 19:59	05:02 21:25	04:17 22:16	04:33 22:10	05:32 21:10	06:38 20:00	07:42 18:23	18 16:25	08:53 (6) 15:30
13	08:52 15:59	07:54 17:09	09:14 (6) 18:06	07:41 (5) 19:59	05:00 21:27	04:16 22:19	04:34 22:09	05:34 21:07	06:40 20:00	07:45 18:21	16 16:25	08:53 (6) 15:29
14	08:51 16:01	07:52 17:11	09:14 (6) 18:06	07:41 (5) 19:59	04:58 21:30	04:16 22:18	04:36 22:08	05:37 21:05	06:42 20:00	07:47 18:18	12 16:25	08:53 (6) 15:29
15	08:50 16:03	07:50 17:13	09:14 (6) 18:06	07:41 (5) 19:59	04:56 21:32	04:16 22:06	04:38 22:02	05:39 21:02	06:45 20:00	07:49 18:15	9 16:25	08:53 (6) 15:29
16	08:48 16:05	07:47 17:16	09:14 (6) 18:06	07:41 (5) 19:59	04:54 21:34	04:15 22:19	04:39 22:05	05:41 21:00	06:47 20:00	07:51 18:13	5 16:25	08:53 (6) 15:29
17	08:47 16:07	07:45 17:18	09:14 (6) 18:06	07:41 (5) 19:59	04:52 21:36	04:15 22:20	04:41 22:04	05:43 20:57	06:49 20:00	07:54 18:10	11 16:25	08:53 (6) 15:29
18	08:46 16:09	07:42 17:20	09:14 (6) 18:06	07:41 (5) 19:59	04:50 21:38	04:15 22:20	04:42 22:02	05:45 20:55	06:51 20:00	07:56 18:07	15 16:25	08:53 (6) 15:29
19	08:44 16:11	07:40 17:23	09:14 (6) 18:06	07:41 (5) 19:59	04:48 21:40	04:15 22:21	04:44 22:00	05:47 20:52	06:53 20:00	07:58 18:05	18 16:25	08:53 (6) 15:29
20	08:43 16:13	07:37 17:25	09:14 (6) 18:06	07:41 (5) 19:59	04:46 21:42	04:15 22:21	04:46 21:59	05:49 20:50	06:55 20:00	07:59 18:02	20 16:25	08:53 (6) 15:29
21	08:41 16:15	07:35 17:27	09:14 (6) 18:06	07:41 (5) 19:59	04:44 21:44	04:15 22:22	04:48 21:57	05:51 20:47	06:57 20:00	08:03 17:59	22 16:25	08:53 (6) 15:29
22	08:40 16:17	07:32 17:30	09:14 (6) 18:06	07:41 (5) 19:59	04:42 21:46	04:15 22:22	04:50 21:55	05:54 20:44	06:59 20:00	08:05 17:57	24 16:25	08:53 (6) 15:29
23	08:38 16:19	07:29 17:32	09:14 (6) 18:06	07:41 (5) 19:59	04:41 21:47	04:15 22:22	04:51 21:53	05:56 20:42	07:01 20:00	08:07 17:54	26 16:25	08:53 (6) 15:29
24	08:36 16:22	07:27 17:34	09:14 (6) 18:06	07:41 (5) 19:59	04:40 21:49	04:16 22:22	04:53 21:52	05:58 20:39	07:04 20:00	08:09 17:52	28 16:25	08:53 (6) 15:29
25	08:35 16:24	07:24 17:37	09:14 (6) 18:06	07:41 (5) 19:59	04:37 21:51	04:16 22:22	04:55 21:50	06:00 20:36	07:06 20:00	08:10 17:49	30 16:25	08:53 (6) 15:29
26	08:33 16:26	07:22 17:39	09:14 (6) 18:06	07:41 (5) 19:59	04:36 21:53	04:17 22:22	04:57 21:48	06:02 20:34	07:08 20:00	08:14 17:47	32 16:25	08:53 (6) 15:29
27	08:31 16:28	07:19 17:41	09:14 (6) 18:06	07:41 (5) 19:59	04:34 21:55	04:17 22:22	04:59 21:46	06:04 20:31	07:10 20:00	08:16 17:44	34 16:25	08:53 (6) 15:29
28	08:29 16:31	07:16 17:44	09:14 (6) 18:06	07:41 (5) 19:59	04:32 21:56	04:18 22:21	05:01 21:44	06:06 20:28	07:12 20:00	08:18 17:42	36 16:25	08:53 (6) 15:29
29	08:27 16:33	07:11 17:49	09:14 (6) 18:06	07:41 (5) 19:59	04:31 21:58	04:18 22:21	05:03 21:42	06:09 20:26	07:14 20:00	08:19 17:41	38 16:25	08:53 (6) 15:29
30	08:25 16:35	07:00 17:51	09:14 (6) 18:06	07:41 (5) 19:59	04:30 22:00	04:19 22:21	05:05 21:40	06:11 20:23	07:16 20:00	08:21 17:37	40 16:25	08:53 (6) 15:29
31	08:23 16:38	06:51 17:53	09:14 (6) 18:06	07:41 (5) 19:59	04:28 22:01	04:20 22:21	05:07 21:38	06:13 20:20	07:25 20:00	08:23 17:34	42 16:25	08:53 (6) 15:29
Potential sun hours	227	262	365	429	515	539	538	474	386	321	241	207
Total, worst case	114	201	133							170	284	
Sun reduction	0.11	0.19	0.40							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	0.11	0.19	0.40							0.28	0.08	
Total, real	12	39	54							48	22	

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_Vestas162

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 15:10/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 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.

	January		February		March		April		May		June	
1	09:00		08:21		09:24 (7)	07:14	07:44 (8)	06:48	07:22 (9)	05:28	06:27 (5)	04:27
	15:40		16:40	35	09:59 (7)	17:46	08:05 (8)	19:55	08:36 (6)	21:01	06:45 (5)	22:03
2	09:00		08:19		09:25 (7)	07:11	07:42 (8)	06:45	07:22 (9)	05:25	06:29 (5)	04:26
	15:41		16:42	34	09:59 (7)	17:48	08:06 (8)	19:57	08:34 (6)	21:04	06:43 (5)	22:04
3	09:00		08:17		09:25 (7)	07:08	07:41 (8)	06:42	07:22 (9)	05:23	06:31 (5)	04:25
	15:42		16:45	35	10:00 (7)	17:51	08:06 (8)	20:00	08:32 (6)	21:06	06:40 (5)	22:06
4	08:59		08:15		09:25 (7)	07:06	07:40 (8)	06:39	07:23 (9)	05:21		04:23
	15:44		16:47	34	09:59 (7)	17:53	08:06 (8)	20:02	08:29 (6)	21:08		22:07
5	08:59		08:13		09:26 (7)	07:03	07:41 (8)	06:37	07:24 (9)	05:18		04:22
	15:45		16:49	34	10:00 (7)	17:55	08:07 (8)	20:04	08:25 (6)	21:10		22:08
6	08:58		08:10		09:26 (7)	07:00	07:40 (8)	06:34	07:25 (9)	05:16		04:21
	15:47		16:52	34	10:00 (7)	17:57	08:07 (8)	20:06	07:38 (9)	21:12		22:10
7	08:58		08:08		09:26 (7)	06:57	07:40 (8)	06:31	07:27 (9)	05:13		04:20
	15:48		16:54	33	09:59 (7)	18:00	08:06 (8)	20:08	07:34 (9)	21:15		22:11
8	08:57		08:06		09:27 (7)	06:55	07:40 (8)	06:28		05:11		04:20
	15:50		16:57	32	09:59 (7)	18:02	08:05 (8)	20:11		21:17		22:12
9	08:56		08:04		09:27 (7)	06:52	07:40 (8)	06:26		05:09		04:19
	15:52		16:59	31	09:58 (7)	18:04	08:04 (8)	20:13		21:19		22:13
10	08:55		08:01		09:29 (7)	06:49	07:41 (8)	06:23		05:07		04:18
	15:53		17:01	29	09:58 (7)	18:06	08:04 (8)	20:15		21:21		22:14
11	08:54		07:59		09:29 (7)	06:46	07:41 (8)	06:20		05:04		04:17
	15:55		17:04	28	09:57 (7)	18:09	08:03 (8)	20:17		21:23		22:15
12	08:53		07:57		09:30 (7)	06:44	07:42 (8)	06:17		05:02		04:17
	15:57		17:06	25	09:55 (7)	18:11	08:01 (8)	20:19		21:25		22:16
13	08:52		07:54		09:32 (7)	06:41	07:20 (6)	06:15		05:00		04:16
	15:59		17:09	22	09:54 (7)	18:13	07:59 (8)	20:22		21:27		22:17
14	08:51		07:52		09:34 (7)	06:38	07:16 (6)	06:12		04:58		04:16
	16:01		17:11	17	09:51 (7)	18:15	07:55 (8)	20:24		21:29		22:18
15	08:50		07:49		09:37 (7)	06:35	07:15 (6)	06:09	06:36 (5)	04:56		04:16
	16:03		17:13	12	09:49 (7)	18:18	07:40 (6)	20:26	06:45 (5)	21:32		22:19
16	08:48		07:47			06:33	07:13 (6)	06:07	06:33 (5)	04:54		04:15
	16:05		17:16			18:20	07:41 (6)	20:28	06:46 (5)	21:34		22:19
17	08:47		07:45			06:30	07:11 (6)	06:04	06:31 (5)	04:52		04:15
	16:07		17:18			18:22	07:42 (6)	20:30	06:48 (5)	21:36		22:20
18	08:46		07:42			06:27	07:09 (6)	06:01	06:28 (5)	04:50		04:15
	16:09	6	09:42 (7)	17:20		18:24	07:42 (6)	20:33	06:49 (5)	21:38		22:20
19	08:44		07:40			06:24	07:08 (6)	05:59	06:27 (5)	04:48		04:15
	16:11	13	09:46 (7)	17:23		18:27	07:43 (6)	20:35	06:50 (5)	21:40		22:21
20	08:43		07:37			06:21	07:07 (6)	05:56	06:26 (5)	04:46		04:15
	16:13	17	09:48 (7)	17:25		18:29	07:43 (6)	20:37	06:50 (5)	21:42		22:21
21	08:41		07:34			06:19	07:07 (6)	05:53	06:25 (5)	04:44		04:15
	16:15	19	09:49 (7)	17:27		18:31	07:44 (6)	20:39	06:51 (5)	21:44		22:21
22	08:40		07:32			06:16	07:06 (6)	05:51	06:24 (5)	04:42		04:15
	16:17	22	09:51 (7)	17:30		18:33	07:44 (6)	20:42	06:50 (5)	21:45		22:22
23	08:38		07:29			06:13	07:05 (6)	05:48	06:25 (5)	04:41		04:15
	16:19	24	09:52 (7)	17:32		18:35	07:44 (6)	20:44	06:51 (5)	21:47		22:22
24	08:36		07:27			06:10	06:36 (9)	05:45	06:24 (5)	04:39		04:16
	16:22	26	09:53 (7)	17:34		18:38	07:43 (6)	20:46	06:50 (5)	21:49		22:22
25	08:34		07:24			06:07	06:33 (9)	05:43	06:24 (5)	04:37		04:16
	16:24	28	09:55 (7)	17:37		18:40	07:43 (6)	20:48	06:50 (5)	21:51		22:22
26	08:33		07:22			06:05	06:31 (9)	05:40	06:24 (5)	04:36		04:17
	16:26	30	09:56 (7)	17:39	9	07:59 (8)	07:43 (6)	20:50	06:49 (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	15	08:02 (8)	07:42 (6)	20:53	06:49 (5)	21:55		22:22
28	08:29		07:16			05:59	06:25 (9)	05:35	06:25 (5)	04:32		04:18
	16:31	32	09:58 (7)	17:44	18	08:04 (8)	07:41 (6)	20:55	06:48 (5)	21:56		22:21
29	08:27		07:14			06:56	07:23 (9)	05:33	06:25 (5)	04:31		04:18
	16:33	32	09:57 (7)			19:49	08:40 (6)	20:57	06:47 (5)	21:58		22:21
30	08:25		07:12			06:53	07:22 (9)	05:30	06:26 (5)	04:30		04:19
	16:35	33	09:58 (7)			19:51	08:38 (6)	20:59	06:46 (5)	22:00		22:21
31	08:23		07:10			06:51	07:22 (9)			04:28		
	16:38	34	09:59 (7)			19:53	08:38 (6)			22:01		
Potential sun hours	227		262			365		429		515		539
Total, worst case		347		477		1064		578		41		
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		38		93		429		246		24		

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

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (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_Vestas162 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.

	July	August	September	October	November	December
1	04:20	05:09	06:15	07:19	08:02 (6)	07:28
	22:20	21:35	20:17	18:53	26	08:39 (8)
2	04:21	05:11	06:17	07:21	08:20 (8)	07:30
	22:20	21:33	20:15	18:51	20	08:40 (8)
3	04:22	05:13	06:19	07:23	08:18 (8)	07:32
	22:19	21:31	20:12	18:48	23	08:41 (8)
4	04:23	05:15	06:21	07:25	08:18 (8)	07:35
	22:18	21:29	20:09	18:45	24	08:42 (8)
5	04:24	05:17	06:23	07:27	08:17 (8)	07:37
	22:18	21:26	20:06	7	07:31 (9)	18:42
6	04:25	05:20	06:26	07:29	08:16 (8)	07:39
	22:17	21:24	20:04	13	07:34 (9)	18:40
7	04:26	05:22	06:28	07:31	08:15 (8)	07:41
	22:16	21:22	20:01	26	08:20 (6)	18:37
8	04:27	05:24	06:30	07:34	08:16 (8)	07:44
	22:15	21:20	19:58	36	08:23 (6)	18:34
9	04:29	05:26	06:32	07:36	08:16 (8)	07:46
	22:14	21:17	19:55	43	08:26 (6)	18:31
10	04:30	05:28	06:34	07:38	08:15 (8)	07:48
	22:13	21:15	11	06:50 (5)	19:52	48
11	04:32	05:30	06:37 (5)	06:36	07:14 (9)	07:40
	22:12	21:12	15	06:52 (5)	19:50	51
12	04:33	05:32	06:36 (5)	06:38	07:14 (9)	07:42
	22:10	21:10	18	06:54 (5)	19:47	54
13	04:34	05:34	06:34 (5)	06:40	07:13 (9)	07:45
	22:09	21:07	21	06:55 (5)	19:44	57
14	04:36	05:37	06:33 (5)	06:42	07:13 (9)	07:47
	22:08	21:05	22	06:55 (5)	19:41	57
15	04:38	05:39	06:32 (5)	06:45	07:14 (9)	07:49
	22:06	21:02	24	06:56 (5)	19:38	56
16	04:39	05:41	06:32 (5)	06:47	07:16 (9)	07:51
	22:05	21:00	24	06:56 (5)	19:36	54
17	04:41	05:43	06:31 (5)	06:49	07:18 (9)	07:53
	22:03	20:57	26	06:57 (5)	19:33	51
18	04:43	05:45	06:31 (5)	06:51	07:20 (9)	07:56
	22:02	20:55	26	06:57 (5)	19:30	47
19	04:44	05:47	06:30 (5)	06:53	07:23 (9)	07:58
	22:00	20:52	27	06:57 (5)	19:27	43
20	04:46	05:49	06:30 (5)	06:55	07:52 (6)	08:00
	21:59	20:50	26	06:56 (5)	19:24	38
21	04:48	05:51	06:30 (5)	06:57	07:52 (6)	08:02
	21:57	20:47	26	06:56 (5)	19:22	38
22	04:50	05:54	06:30 (5)	06:59	07:51 (6)	08:05
	21:55	20:44	25	06:55 (5)	19:19	38
23	04:52	05:56	06:30 (5)	07:01	07:51 (6)	08:07
	21:53	20:42	25	06:55 (5)	19:16	37
24	04:53	05:58	06:31 (5)	07:04	07:51 (6)	08:09
	21:52	20:39	23	06:54 (5)	19:13	36
25	04:55	06:00	06:32 (5)	07:06	07:52 (6)	07:12
	21:50	20:36	20	06:52 (5)	19:10	33
26	04:57	06:02	06:34 (5)	07:08	07:52 (6)	07:14
	21:48	20:34	17	06:51 (5)	19:07	32
27	04:59	06:04	06:36 (5)	07:10	07:53 (6)	07:16
	21:46	20:31	13	06:49 (5)	19:05	29
28	05:01	06:06	06:38 (5)	07:12	07:55 (6)	07:18
	21:44	20:28	8	06:46 (5)	19:02	26
29	05:03	06:09		07:14	07:56 (6)	07:21
	21:42	20:26		18:59	27	08:34 (8)
30	05:05	06:11		07:16	07:58 (6)	07:23
	21:40	20:23		18:56	31	08:38 (8)
31	05:07	06:13			07:25	08:59 (7)
	21:38	20:20			16:34	27
Potential sun hours	538	474	386	321	241	207
Total, worst case		397	1008	456	676	
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		200	466	129	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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Flickering_Valka_Vestas162

SIA Estonian, Latvian & Lithuanian environment
Vilandes 3-6
LV-1010 Riga
0037167242411
Baiba / baiba.ozolina@environment.lv
Calculated:
15/01/2026 15:10/4.1.254

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Kastanas - Shadow Receptor: 1.0 x 1.0 Azimuth: 3.1° Slope: 90.0° (478)
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	
09:00		14:50 (4)	08:21	07:13	06:48	05:27	04:27	04:20	05:09	06:15	07:18	07:27						07:27		08:33		14:33 (4)	
15:39	3	14:53 (4)	16:40	17:46	19:55	21:01	22:02	22:20	21:35	20:17	18:53	16:32						16:32		15:37	20	14:53 (4)	
09:00		14:49 (4)	08:19	07:11	06:45	05:25	04:25	04:21	05:11	06:17	07:20	07:30						07:30		08:35		14:33 (4)	
15:40	5	14:54 (4)	16:42	17:48	19:57	21:03	22:04	22:19	21:33	20:14	18:50	16:29						16:29		15:36	19	14:52 (4)	
09:00		14:50 (4)	08:17	07:08	06:42	05:23	04:24	04:21	05:13	06:19	07:23	07:32						07:32		08:36		14:34 (4)	
15:42	6	14:56 (4)	16:44	17:50	19:59	21:06	22:05	22:19	21:31	20:12	18:48	16:27						16:27		15:35	16	14:50 (4)	
08:59		14:50 (4)	08:15	07:05	06:39	05:20	04:23	04:22	05:15	06:21	07:25	07:34						07:34		08:38		14:35 (4)	
15:43	8	14:58 (4)	16:47	17:53	20:01	21:08	22:07	22:18	21:28	20:09	18:45	16:25						16:25		15:34	14	14:49 (4)	
08:59		14:50 (4)	08:12	07:03	06:36	05:18	04:22	04:24	05:17	06:23	07:27	07:37						07:37		08:40		14:35 (4)	
15:45	9	14:59 (4)	16:49	17:55	20:04	21:10	22:08	22:17	21:26	20:06	18:42	16:23						16:23		15:33	13	14:48 (4)	
08:58		14:50 (4)	08:10	07:00	06:34	05:15	04:21	04:25	05:19	06:25	07:29	07:39						07:39		08:41		14:36 (4)	
15:46	11	15:01 (4)	16:52	17:57	20:06	21:12	22:09	22:16	21:24	20:03	18:39	16:20						16:20		15:32	11	14:47 (4)	
08:57		14:50 (4)	08:08	06:57	06:31	05:13	04:20	04:26	05:21	06:27	07:31	07:41						07:41		08:43		14:37 (4)	
15:48	13	15:03 (4)	16:54	17:59	20:08	21:14	22:11	22:16	21:22	20:01	18:37	16:18						16:18		15:32	9	14:46 (4)	
08:57		14:50 (4)	08:06	06:54	06:28	05:11	04:19	04:27	05:23	06:29	07:33	07:43						07:43		08:44		14:38 (4)	
15:49	15	15:05 (4)	16:56	18:02	20:10	21:16	22:12	22:15	21:19	19:58	18:34	16:16						16:16		15:31	8	14:46 (4)	
08:56		14:51 (4)	08:03	06:52	06:25	05:09	04:18	04:28	05:26	06:32	07:36	07:46						07:46		08:46		14:38 (4)	
15:51	16	15:07 (4)	16:59	18:04	20:12	21:19	22:13	22:14	21:17	19:55	18:31	16:14						16:14		15:31	6	14:44 (4)	
08:55		14:51 (4)	08:01	06:49	06:23	05:06	04:18	04:30	05:28	06:34	07:38	07:48						07:48		08:47		14:39 (4)	
15:53	18	15:09 (4)	17:01	18:06	20:15	21:21	22:14	22:12	21:14	19:52	18:28	16:12						16:12		15:30	5	14:44 (4)	
08:54		14:51 (4)	07:59	06:46	06:20	05:04	04:17	04:31	05:30	06:36	07:40	07:50											

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_Vestas162

SIA Estonian, Latvian & Lithuanian environment
Vilandes 3-6
LV-1010 Riga
0037167242411
Baiba / baiba.ozolina@environment.lv
Calculated:
15/01/2026 15:10/4.1.254

Calculation: Flickering_Valke_Vestas162 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

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
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		14:42 (4)	08:21	07:13	06:48	05:27	04:27	04:20	05:09	06:15	07:18	07:27	15:50 (2)	08:33	14:27 (4)			
15:39	11	14:53 (4)	16:40	17:46	19:55	21:01	22:02	22:20	21:35	20:17	18:53	16:32	6	15:56 (2)	15:37	21	14:48 (4)	
09:00		14:42 (4)	08:19	07:11	06:45	05:25	04:25	04:21	05:11	06:17	07:20	07:30		15:53 (2)	08:35		14:27 (4)	
15:40	12	14:54 (4)	16:42	17:48	19:57	21:03	22:04	22:19	21:33	20:14	18:50	16:29	1	15:54 (2)	15:36	22	14:49 (4)	
09:00		14:43 (4)	08:17	07:08	06:42	05:23	04:24	04:21	05:13	06:19	07:23	07:32			08:36		14:28 (4)	
15:42	13	14:56 (4)	16:44	17:50	19:59	21:06	22:05	22:19	21:31	20:12	18:48	16:27			15:35	21	14:49 (4)	
08:59		14:43 (4)	08:15	07:05	06:39	05:20	04:23	04:22	05:15	06:21	07:25	07:34			08:38		14:28 (4)	
15:43	15	14:58 (4)	16:47	17:53	20:01	21:08	22:07	22:18	21:28	20:09	18:45	16:25			15:34	21	14:49 (4)	
08:59		14:43 (4)	08:12	07:03	06:36	05:18	04:22	04:24	05:17	06:23	07:27	07:37			08:40		14:29 (4)	
15:45	16	14:59 (4)	16:49	17:55	20:04	21:10	22:08	22:17	21:26	20:06	18:42	16:23			15:33	19	14:48 (4)	
08:58		14:43 (4)	08:10	07:00	06:34	05:15	04:21	04:25	05:19	06:25	07:29	07:39			08:41		14:30 (4)	
15:46	18	15:01 (4)	16:52	17:57	20:06	21:12	22:09	22:16	21:24	20:03	18:39	16:20			15:32	17	14:47 (4)	
08:57		14:44 (4)	08:08	06:57	06:31	05:13	04:20	04:26	05:21	06:27	07:31	07:41			08:43		14:30 (4)	
15:48	19	15:03 (4)	16:54	17:59	20:08	21:14	22:11	22:16	21:22	20:01	18:37	16:18			15:32	16	14:46 (4)	
08:57		14:44 (4)	08:06	06:54	06:28	05:11	04:19	04:27	05:23	06:29	07:33	07:43			08:44		14:31 (4)	
15:49	21	15:05 (4)	16:56	18:02	20:10	21:16	22:12	22:15	21:19	19:58	18:34	16:16			15:31	15	14:46 (4)	
08:56		14:45 (4)	08:03	06:52	06:25	05:09	04:18	04:28	05:26	06:32	07:36	07:46			08:46		14:31 (4)	
15:51	21	15:06 (4)	16:59	2	16:25 (2)	18:04	20:12	21:19	22:13	22:14	21:17	19:55			15:31	13	14:44 (4)	
08:55		14:45 (4)	08:01	06:49	16:20 (2)	06:49	06:23	05:06	04:18	04:30	05:28	06:34			07:48		14:32 (4)	
15:53	22	15:07 (4)	17:01	7	16:27 (2)	18:06	20:15	21:21	22:14	22:12	21:14	19:52			16:12	15:30	12	14:44 (4)
08:54		14:45 (4)	07:59		16:19 (2)	06:46	06:20	05:04	04:17	04:31	05:30	06:36			07:50		14:33 (4)	
15:55	21	15:06 (4)	17:03	11	16:30 (2)	18:08	20:17	21:23	22:15	22:11	21:12	19:49			16:10	15:30	10	14:43 (4)
08:53		14:46 (4)	07:56		16:18 (2)	06:43	06:17	05:02	04:17	04:33	05:32	06:38			07:53		14:34 (4)	
15:57	21	15:07 (4)	17:06	14	16:32 (2)	18:11	20:19	21:25	22:16	22:10	21:10	19:47						

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		

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Kurmiš i - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (792)
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 21:02	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)	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		

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 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		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_Vestas162

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 15:10/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Karla Skalbes iela 11 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (642)
 Sunshine probability S (Average daily sunshine hours) []

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

No operational time reduction. It is assumed 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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SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 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	08:21	07:13	06:48	05:27	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	06:36	05:18	04:22	04:23	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	05:15	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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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	15:30
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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	17:03	18:08	20:17	21:23	22:15	22:12	21:12	19:50	18:26	16:10	15:30
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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	16:03	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	04:53	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	04:49	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	15:52	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	05:55	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	04:38	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
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	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	15:36
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_Vestas162

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 15:10/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Karla Skalbes iela 17 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (611)
 Sunshine probability S (Average daily sunshine hours) []

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

No operational time reduction. It is assumed 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	07:44 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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SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Karla Skalbes iela 19 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (631) 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	07:34 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)	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_Vestas162

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 15:10/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Lati - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (492)
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	08:21 16:40	07:13 17:46 (2)	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	08:19 16:42	07:11 17:48 (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	07:30 16:29	08:35 15:36
3	09:00 15:42 08:17 16:44	08:17 16:44	07:08 17:50 (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	07:32 16:27	08:36 15:35
4	08:59 15:43 08:15 16:47	08:15 16:47	07:05 17:52 (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	6 17:46 (2) 07:34 16:25	08:38 15:34
5	08:59 15:45 08:12 16:49	08:12 16:49	07:02 17:55 (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	11 17:55 (2) 07:37 16:22	08:40 15:33
6	08:58 15:46 08:10 16:52	08:10 16:52	07:00 17:57 (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	14 17:56 (2) 07:39 16:20	08:41 15:32
7	08:57 15:48 08:08 16:54	08:08 16:54	06:57 17:59 (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 17:57 (2) 07:41 16:18	08:43 15:32
8	08:56 15:49 08:06 16:56	08:06 16:56	06:54 18:02 (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	18 17:57 (2) 07:43 16:16	08:44 15:31
9	08:56 15:51 08:03 16:59	08:03 16:59	06:52 18:04 (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	19 17:58 (2) 07:46 16:14	08:46 15:30
10	08:55 15:53 08:01 17:01	08:01 17:01	06:49 18:06 (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	18 17:56 (2) 07:48 16:12	08:47 15:30
11	08:54 15:55 07:59 17:03	07:59 17:03	06:46 18:08 (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	15 17:53 (2) 07:50 16:09	08:49 15:30
12	08:53 15:56 07:56 17:06	07:56 17:06	06:43 18:11 (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	12 17:50 (2) 07:53 16:07	08:50 15:29
13	08:52 15:58 07:54 17:08	07:54 17:08	06:41 18:13 (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	9 17:48 (2) 07:55 16:05	08:51 15:29
14	08:51 16:00 07:52 17:11	07:52 17:11	06:38 18:15 (2)	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	6 17:45 (2) 07:57 16:03	08:52 15:29
15	08:49 16:02 07:49 17:13	07:49 17:13	06:35 18:17 (2)	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	1 17:41 (2) 07:59 16:02	08:53 15:29
16	08:48 16:04 07:47 17:15	07:47 17:15	06:32 18:20 (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	08:02 16:00	08:54 15:29
17	08:47 16:06 07:44 17:18	07:44 17:18	06:29 18:22 (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	08:04 15:58	08:55 15:29
18	08:45 16:08 07:42 17:20	07:42 17:20	06:27 18:24 (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 18:07	08:06 15:56	08:56 15:29
19	08:44 16:10 07:39 17:22	07:39 17:22	06:24 18:26 (2)	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	08:08 15:54	08:57 15:29
20	08:42 16:13 07:37 17:25	07:37 17:25	06:21 18:28 (2)	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	07:34 17:27	06:18 18:31 (2)	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	07:32 17:29	06:15 18:33 (2)	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	07:29 17:32	06:13 18:35 (2)	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	07:26 17:34	06:10 18:37 (2)	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	07:24 17:36	06:07 18:39 (2)	05:43 20:48	04:37 21:51	04:16 22:22	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	07:21 17:39	06:04 18:42 (2)	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	08:23 15:43	09:00 15:33
27	08:31 16:28 07:19 17:41	07:19 17:41	06:01 18:44 (2)	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	09:01 15:34
28	08:29 16:30 07:16 17:43	07:16 17:43	05:59 18:46 (2)	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	08:27 15:41	09:01 15:34
29	08:27 16:33 07:14 17:45	07:14 17:45	05:56 18:48 (2)	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 07:12 17:47	07:12 17:47	05:53 18:50 (2)	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	08:31 15:38	09:01 15:37
31	08:23 16:37 07:10 17:50	07:10 17:50	05:50 18:53 (2)	05:28 21:01	04:28 22:01	04:18 22:21	05:07 21:37	06:12 20:20	07:25 16:34	07:25 16:34	08:31 15:38	09:00 15:38
Potential sun hours	227	262	365	429	515	539	538	474	386	321	241	207
Total, worst case		9	134							146		
Sun reduction		0.19	0.40							0.28		
Oper. time red.		1.00	1.00							1.00		
Wind dir. red.		1.00	1.00							1.00		
Total reduction		0.19	0.40							0.28		
Total, real		2	54							41		

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

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (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_Vestas162

SIA Estonian, Latvian & Lithuanian environment
Vilandes 3-6
LV-1010 Riga
0037167242411
Baiba / baiba.ozolina@environment.lv
Calculated:
15/01/2026 15:10/4.1.254

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
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		14:29 (4)	08:21	07:13	06:48	05:27	04:27	04:20	05:09	06:15	07:18	08:33
15:39	22	14:51 (4)	16:40	17:46	19:55	21:01	22:02	22:20	21:35	20:17	18:53	17:37 (4)
09:00		14:29 (4)	08:19	07:11	06:45	05:25	04:25	04:21	05:11	06:17	07:20	08:35
15:40	22	14:51 (4)	16:42	17:48	19:57	21:03	22:04	22:19	21:33	20:14	18:50	17:37 (4)
09:00		14:30 (4)	08:17	07:08	06:42	05:23	04:24	04:21	05:13	06:19	07:23	08:36
15:42	22	14:52 (4)	16:44	17:50	19:59	21:06	22:05	22:19	21:31	20:12	18:48	17:37 (4)
08:59		14:30 (4)	08:15	07:05	06:39	05:20	04:23	04:22	05:15	06:21	07:25	08:38
15:43	22	14:52 (4)	16:47	17:53	20:01	21:08	22:07	22:18	21:28	20:09	18:45	17:37 (4)
08:59		14:31 (4)	08:12	07:03	06:36	05:18	04:22	04:24	05:17	06:23	07:27	08:40
15:45	22	14:53 (4)	16:49	17:55	20:04	21:10	22:08	22:17	21:26	20:06	18:42	17:37 (4)
08:58		14:31 (4)	08:10	6 16:10 (2)	07:00	06:34	05:15	04:21	04:25	05:19	06:25	07:29
15:46	22	14:53 (4)	16:52	16:16 (2)	17:57	20:06	21:12	22:09	22:16	21:24	20:03	18:39
08:57		14:31 (4)	08:08	16:09 (2)	06:57	06:31	05:13	04:20	04:26	05:21	06:27	07:31
15:48	22	14:53 (4)	16:54	16:19 (2)	17:59	20:08	21:14	22:11	22:16	21:22	20:01	18:37
08:57		14:32 (4)	08:06	16:07 (2)	06:54	06:28	05:11	04:19	04:27	05:23	06:29	07:33
15:49	22	14:54 (4)	16:56	16:22 (2)	18:02	20:10	21:16	22:12	22:15	21:19	19:58	18:34
08:56		14:33 (4)	08:03	16:07 (2)	06:52	06:25	05:09	04:18	04:28	05:26	06:32	07:36
15:51	21	14:54 (4)	16:59	16:25 (2)	18:04	20:13	21:19	22:13	22:14	21:17	19:55	18:31
08:55		14:33 (4)	08:01	16:06 (2)	06:49	06:23	05:06	04:18	04:30	05:28	06:34	07:38
15:53	22	14:55 (4)	17:01	21 16:27 (2)	18:06	20:15	21:21	22:14	22:12	21:14	19:52	18:28
08:54		14:33 (4)	07:59	16:06 (2)	06:46	06:20	05:04	04:17	04:31	05:30	06:36	07:40
15:55	21	14:54 (4)	17:03	24 16:30 (2)	18:08	20:17	21:23	22:15	22:11	21:12	19:49	18:26
08:53		14:34 (4)	07:56	16:05 (2)	06:43	06:17	05:02	04:17	04:33	05:32	06:38	07:42
15:57	21	14:55 (4)	17:06	25 16:30 (2)	18:11	20:19	21:25	22:16	22:10	21:10	19:47	18:23
08:52		14:34 (4)	07:54	16:05 (2)	06:41	06:14	05:01	04:16	04:32	05:31	06:37	07:41
15:58	21	14:55 (4)	17:08	26 16:31 (2)	18:13	20:21	21:27	22:17	22:09	21:07	19:44	18:20
08:51		14:36 (4)	07:52	16:05 (2)	06:38	06:12	04:58	04:16	04:36	05:36	06:42	07:47
16:00	19	14:55 (4)	17:11	25 16:30 (2)	18:15	20:24	21:29	22:18	22:08	21:05	19:41	18:18
08:49		14:36 (4)	07:49	16:05 (2)	06:35	06:09	04:56	04:15	04:37	05:38	06:44	07:49
16:02	19	14:55 (4)	17:13	25 16:30 (2)	18:17	20:26	21:31	22:18	22:06	21:02	19:38	18:15

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Lauku iela 2 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (541)
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	04:22 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_Vestas162

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 15:10/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Ledini - Shadow Receptor: 1.0×1.0 Azimuth: 3.1° Slope: 90.0° (580)
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 20:14	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_Vestas162

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 15:10/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Lejas Gerki - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (783)
Sunshine probability S (Average daily sunshine hours) []

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

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	05:17 (5)				
	15:40	16:40	17:46				19:55	34	08:56 (7)	21:01	23	06:30 (6)	22:03	41	06:28 (6)				
2	09:00	08:19	07:11				06:45	07:14 (8)	05:25				06:06 (6)	04:26	05:17 (5)				
	15:41	16:42	17:48				19:57	29	08:51 (7)	21:04	26	06:32 (6)	22:04	39	06:27 (6)				
3	09:00	08:17	07:08				06:42	07:12 (8)	05:23				06:04 (6)	04:25	05:18 (5)				
	15:42	16:45	17:51				20:00	21	07:33 (8)	21:06	28	06:32 (6)	22:06	36	06:27 (6)				
4	08:59	08:15	07:06				06:39	07:11 (8)	05:21				06:03 (6)	04:23	05:19 (5)				
	15:44	16:47	17:53				20:02	24	07:35 (8)	21:08	30	06:33 (6)	22:07	32	06:25 (6)				
5	08:59	08:13	07:03				06:37	07:10 (8)	05:18				06:03 (6)	04:22	05:19 (5)				
	15:45	16:50	17:55				20:04	25	07:35 (8)	21:10	31	06:34 (6)	22:08	29	06:24 (6)				
6	08:58	08:10	07:00				06:34	07:09 (8)	05:16				06:02 (6)	04:21	05:19 (5)				
	15:47	16:52	17:57	11	07:49 (7)	08:00 (7)	20:06	26	07:35 (8)	21:12	33	06:35 (6)	22:10	24	06:21 (6)				
7	08:57	08:08	06:57				07:44 (7)	06:31	07:08 (8)	05:13				06:01 (6)	04:21	05:19 (5)			
	15:48	16:54	18:00	20	08:04 (7)	08:04 (7)	20:08	27	07:35 (8)	21:15	34	06:35 (6)	22:11	19	05:38 (5)				
8	08:57	08:06	06:55				07:41 (7)	06:28	07:08 (8)	05:11				06:01 (6)	04:20	05:20 (5)			
	15:50	16:57	18:02	25	08:06 (7)	08:06 (7)	20:11	27	07:35 (8)	21:17	35	06:36 (6)	22:12	19	05:39 (5)				
9	08:56	08:04	06:52				07:39 (7)	06:26	07:07 (8)	05:09				06:01 (6)	04:19	05:20 (5)			
	15:52	16:59	18:04	29	08:08 (7)	08:08 (7)	20:13	27	07:34 (8)	21:19	35	06:36 (6)	22:13	18	05:38 (5)				
10	08:55	08:01	06:49				07:38 (7)	06:23	07:07 (8)	05:07				05:59 (6)	04:18	05:21 (5)			
	15:53	17:01	18:06	32	08:10 (7)	08:10 (7)	20:15	27	07:34 (8)	21:21	36	06:35 (6)	22:14	18	05:39 (5)				
11	08:54	07:59	06:46				07:36 (7)	06:20	07:08 (8)	05:04				06:00 (6)	04:18	05:21 (5)			
	15:55	17:04	18:09	35	08:11 (7)	08:11 (7)	20:17	26	07:34 (8)	21:23	36	06:36 (6)	22:15	17	05:38 (5)				
12	08:53	07:57	06:44				07:34 (7)	06:17	07:08 (8)	05:02				06:00 (6)	04:17	05:22 (5)			
	15:57	17:06	18:11	38	08:12 (7)	08:12 (7)	20:19	24	07:32 (8)	21:25	36	06:36 (6)	22:16	16	05:38 (5)				
13	08:52	07:54	06:41				07:33 (7)	06:15	07:08 (8)	05:00				06:00 (6)	04:16	05:22 (5)			
	15:59	17:09	18:13	39	08:12 (7)	08:12 (7)	20:22	23	07:31 (8)	21:27	36	06:36 (6)	22:17	15	05:37 (5)				
14	08:51	07:52	06:38				07:32 (7)	06:12	07:09 (8)	04:58				06:00 (6)	04:16	05:23 (5)			
	16:01	17:11	18:15	40	08:12 (7)	08:12 (7)	20:24	21	07:30 (8)	21:29	36	06:36 (6)	22:18	15	05:38 (5)				
15	08:50	07:49	06:35				07:32 (7)	06:09	07:10 (8)	04:56				05:28 (5)	04:16	05:23 (5)			
	16:03	17:13	18:18	42	08:14 (7)	08:14 (7)	20:26	18	07:28 (8)	21:31	40	06:36 (6)	22:19	15	05:38 (5)				
16	08:48	07:47	06:33				07:31 (7)	06:07	07:11 (8)	04:54				05:26 (5)	04:15	05:24 (5)			
	16:05	17:16	18:20	43	08:14 (7)	08:14 (7)	20:28	15	07:26 (8)	21:34	43	06:35 (6)	22:19	14	05:38 (5)				
17	08:47	07:45	06:30				07:30 (7)	06:04	07:14 (8)	04:52				05:24 (5)	04:15	05:24 (5)			
	16:07	17:18	18:22	44	08:14 (7)	08:14 (7)	20:30	9	07:23 (8)	21:36	46	06:35 (6)	22:20	14	05:38 (5)				
18	08:46	07:42	06:27				07:29 (7)	06:01		04:50				05:23 (5)	04:15	05:25 (5)			
	16:09	17:20	18:24	44	08:13 (7)	08:13 (7)	20:33			21:38	49	06:36 (6)	22:20	13	05:38 (5)				
19	08:44	07:40	06:24				07:29 (7)	05:59		04:48				05:21 (5)	04:15	05:25 (5)			
	16:11	17:23	18:27	44	08:13 (7)	08:13 (7)	20:35			21:40	50	06:35 (6)	22:21	13	05:38 (5)				
20	08:43	07:37	06:21				07:28 (7)	05:56	06:23 (9)	04:46				05:19 (5)	04:15	05:25 (5)			
	16:13	17:25	18:29	44	08:12 (7)	08:12 (7)	20:37	2	06:25 (9)	21:42	52	06:34 (6)	22:21	13	05:38 (5)				
21	08:41	07:34	06:19				07:29 (7)	05:53	06:21 (9)	04:44				05:18 (5)	04:15	05:25 (5)			
	16:15	17:27	18:31	44	08:13 (7)	08:13 (7)	20:39	7	06:28 (9)	21:43	54	06:35 (6)	22:21	13	05:38 (5)				
22	08:40	07:32	06:16				07:28 (7)	05:51	06:18 (9)	04:42				05:16 (5)	04:15	05:25 (5)			
	16:17	17:30	18:33	44	08:12 (7)	08:12 (7)	20:42	11	06:29 (9)	21:45	55	06:34 (6)	22:22	13	05:38 (5)				
23	08:38	07:29	06:13				07:28 (7)	05:48	06:16 (9)	04:41				05:16 (5)	04:16	05:26 (5)			
	16:19	17:32	18:35	43	08:11 (7)	08:11 (7)	20:44	14	06:30 (9)	21:47	54	06:34 (6)	22:22	13	05:39 (5)				
24	08:36	07:27	06:10				07:28 (7)	05:45	06:13 (9)	04:39				05:16 (5)	04:16	05:26 (5)			
	16:22	17:34	18:38	42	08:10 (7)	08:10 (7)	20:46	17	06:30 (9)	21:49	53	06:33 (6)	22:22	13	05:39 (5)				
25	08:34	07:24	06:07				07:28 (7)	05:43	06:11 (9)	04:37				05:16 (5)	04:16	05:26 (5)			
	16:24	17:37	18:40	41	08:09 (7)	08:09 (7)	20:48	20	06:31 (9)	21:51	53	06:33 (6)	22:22	13	05:39 (5)				
26	08:33	07:22	06:05				07:30 (7)	05:40	06:09 (9)	04:36				05:15 (5)	04:17	05:26 (5)			
	16:26	17:39	18:42	38	08:08 (7)	08:08 (7)	20:50	21	06:30 (9)	21:53	52	06:32 (6)	22:22	14	05:40 (5)				
27	08:31	07:19	06:02				07:30 (7)	05:38	06:10 (9)	04:34				05:16 (5)	04:17	05:26 (5)			
	16:28	17:41	18:44	37	08:07 (7)	08:07 (7)	20:53	21	06:31 (9)	21:54	50	06:31 (6)	22:21	14	05:40 (5)				
28	08:29	07:16	05:59				07:30 (7)	05:35	06:10 (9)	04:33				05:16 (5)	04:18	05:26 (5)			
	16:31	17:44	18:46	35	08:05 (7)	08:05 (7)	20:55	21	06:31 (9)	21:56	49	06:31 (6)	22:21	15	05:41 (5)				
29	08:27		06:56				08:31 (7)	05:33	06:09 (9)	04:31				05:17 (5)	04:19	05:26 (5)			
	16:33		19:49	32	09:03 (7)	09:03 (7)	20:57	21	06:30 (9)	21:58	47	06:31 (6)	22:21	16	05:42 (5)				
30	08:25		06:53				08:32 (7)	05:30	06:09 (6)	04:30				05:17 (5)	04:19	05:26 (5)			
	16:35		19:51	29	09:01 (7)	09:01 (7)	20:59	21	06:30 (9)	22:00	46	06:30 (6)	22:21	15	05:41 (5)				
31	08:23		06:51				07:20 (8)			04:28				05:16 (5)					
	16:38		19:53	33	08:59 (7)					22:01	43	06:28 (6)							
Potential sun hours	227	262	365				429				515				539				
Total, worst case				948				579				1291				559			
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				382				246				751				313			

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

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

Flickering_Valka_Vestas162

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 15:10/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 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	05:26 (5)	05:09	06:10 (6)	06:15	07:07 (8)	07:19	08:13 (7)	07:28	08:33	
	22:20	16 05:42 (5)	21:35	36 06:46 (6)	20:17	26 07:33 (8)	18:53	38 08:51 (7)	16:32	15:37	
2	04:21	05:26 (5)	05:11	06:10 (6)	06:17	07:06 (8)	07:21	08:14 (7)	07:30	08:35	
	22:20	17 05:43 (5)	21:33	36 06:46 (6)	20:15	27 07:33 (8)	18:51	36 08:50 (7)	16:30	15:36	
3	04:22	05:26 (5)	05:13	06:10 (6)	06:19	07:05 (8)	07:23	08:14 (7)	07:32	08:37	
	22:19	17 05:43 (5)	21:31	35 06:45 (6)	20:12	27 07:32 (8)	18:48	34 08:48 (7)	16:27	15:35	
4	04:23	05:26 (5)	05:15	06:10 (6)	06:21	07:05 (8)	07:25	08:16 (7)	07:35	08:38	
	22:18	18 05:44 (5)	21:29	35 06:45 (6)	20:09	27 07:32 (8)	18:45	31 08:47 (7)	16:25	15:34	
5	04:24	05:26 (5)	05:18	06:10 (6)	06:23	07:05 (8)	07:27	08:18 (7)	07:37	08:40	
	22:17	18 05:44 (5)	21:26	35 06:45 (6)	20:06	27 07:32 (8)	18:42	27 08:45 (7)	16:23	15:34	
6	04:25	05:26 (5)	05:20	06:11 (6)	06:26	07:05 (8)	07:29	08:19 (7)	07:39	08:42	
	22:17	19 05:45 (5)	21:24	33 06:44 (6)	20:04	26 07:31 (8)	18:40	23 08:42 (7)	16:21	15:33	
7	04:26	05:25 (5)	05:22	06:11 (6)	06:28	07:05 (8)	07:31	08:22 (7)	07:41	08:43	
	22:16	27 06:29 (6)	21:22	33 06:44 (6)	20:01	25 07:30 (8)	18:37	16 08:38 (7)	16:18	15:32	
8	04:28	05:25 (5)	05:24	06:12 (6)	06:30	07:05 (8)	07:34		07:44	08:45	
	22:15	32 06:31 (6)	21:19	31 06:43 (6)	19:58	24 07:29 (8)	18:34		16:16	15:31	
9	04:29	05:25 (5)	05:26	06:13 (6)	06:32	07:06 (8)	07:36		07:46	08:46	
	22:14	35 06:33 (6)	21:17	29 06:42 (6)	19:55	22 07:28 (8)	18:31		16:14	15:31	
10	04:30	05:25 (5)	05:28	06:14 (6)	06:34	07:07 (8)	07:38		07:48	08:47	
	22:13	37 06:34 (6)	21:15	27 06:41 (6)	19:52	29 08:44 (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	40 06:36 (6)	21:12	25 06:40 (6)	19:50	35 08:48 (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	43 06:37 (6)	21:10	22 06:38 (6)	19:47	35 08:50 (7)	18:23		16:08	15:30	
13	04:34	05:25 (5)	05:34	06:18 (6)	06:40	08:24 (7)	07:45		07:55	08:51	
	22:09	44 06:37 (6)	21:07	20 06:38 (9)	19:44	28 08:52 (7)	18:21		16:06	15:29	
14	04:36	05:25 (5)	05:37	06:18 (9)	06:42	08:22 (7)	07:47		07:57	08:52	
	22:08	47 06:39 (6)	21:05	20 06:38 (9)	19:41	31 08:53 (7)	18:18		16:04	15:29	
15	04:38	05:25 (5)	05:39	06:17 (9)	06:45	08:20 (7)	07:49		08:00	08:54	
	22:06	48 06:39 (6)	21:02	21 06:38 (9)	19:38	34 08:54 (7)	18:15		16:02	15:29	
16	04:39	05:26 (5)	05:41	06:17 (9)	06:47	08:19 (7)	07:51		08:02	08:55	
	22:05	49 06:41 (6)	21:00	21 06:38 (9)	19:36	36 08:55 (7)	18:13		16:00	15:29	
17	04:41	05:25 (5)	05:43	06:17 (9)	06:49	08:17 (7)	07:53		08:04	08:55	
	22:03	51 06:41 (6)	20:57	21 06:38 (9)	19:33	39 08:56 (7)	18:10		15:58	15:29	
18	04:43	05:26 (5)	05:45	06:18 (9)	06:51	08:16 (7)	07:56		08:06	08:56	
	22:02	52 06:42 (6)	20:55	19 06:37 (9)	19:30	40 08:56 (7)	18:07		15:56	15:29	
19	04:44	05:25 (5)	05:47	06:20 (9)	06:53	08:16 (7)	07:58		08:09	08:57	
	22:00	53 06:42 (6)	20:52	17 06:37 (9)	19:27	41 08:57 (7)	18:05		15:55	15:29	
20	04:46	05:26 (5)	05:49	06:22 (9)	06:55	08:15 (7)	08:00		08:11	08:58	
	21:59	53 06:43 (6)	20:50	14 06:36 (9)	19:24	43 08:58 (7)	18:02		15:53	15:30	
21	04:48	05:26 (5)	05:52	06:24 (9)	06:57	08:14 (7)	08:02		08:13	08:59	
	21:57	54 06:43 (6)	20:47	10 06:34 (9)	19:22	44 08:58 (7)	17:59		15:51	15:30	
22	04:50	05:27 (5)	05:54	06:26 (9)	06:59	08:13 (7)	08:05		08:15	08:59	
	21:55	54 06:44 (6)	20:44	7 06:33 (9)	19:19	44 08:57 (7)	17:57		15:50	15:31	
23	04:52	05:29 (5)	05:56	06:28 (9)	07:01	08:13 (7)	08:07		08:17	09:00	
	21:53	53 06:45 (6)	20:42	2 06:30 (9)	19:16	44 08:57 (7)	17:54		15:48	15:31	
24	04:53	05:30 (5)	05:58		07:04	08:12 (7)	08:09		08:19	09:00	
	21:51	52 06:45 (6)	20:39		19:13	45 08:57 (7)	17:52		15:46	15:32	
25	04:55	05:32 (5)	06:00		07:06	08:12 (7)	07:12		08:21	09:00	
	21:50	49 06:45 (6)	20:36		19:10	44 08:56 (7)	16:49		15:45	15:32	
26	04:57	05:34 (5)	06:02		07:17 (8)	07:08	08:12 (7)	07:14	08:23	09:01	
	21:48	48 06:46 (6)	20:34	9 07:26 (8)	19:07	43 08:55 (7)	16:47		15:44	15:33	
27	04:59	05:36 (5)	06:04		07:14 (8)	07:10	08:12 (7)	07:16	08:25	09:01	
	21:46	44 06:46 (6)	20:31	15 07:29 (8)	19:05	43 08:55 (7)	16:44		15:42	15:34	
28	05:01	05:37 (5)	06:06		07:12 (8)	07:12	08:12 (7)	07:18	08:27	09:01	
	21:44	42 06:46 (6)	20:28	18 07:30 (8)	19:02	43 08:55 (7)	16:42		15:41	15:35	
29	05:03	05:39 (5)	06:09		07:10 (8)	07:14	08:13 (7)	07:21	08:29	09:01	
	21:42	38 06:46 (6)	20:26	21 07:31 (8)	18:59	41 08:54 (7)	16:39		15:40	15:36	
30	05:05	06:10 (6)	06:11		07:09 (8)	07:16	08:13 (7)	07:23	08:31	09:01	
	21:40	36 06:46 (6)	20:23	23 07:32 (8)	18:56	39 08:52 (7)	16:37		15:39	15:37	
31	05:07	06:10 (6)	06:13		07:08 (8)		07:25			09:01	
	21:37	36 06:46 (6)	20:20	24 07:32 (8)			16:34			15:38	
Potential sun hours	538		474		386		321		241	207	
Total, worst case	1222		659		1052		205				
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	574		332		486		58				

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_Vestas162

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 15:10/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Lejasstaldoti - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (772)
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 21:02	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	05:17 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	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 22:14	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	06:46 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 22:11	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 17:09	06:41 18:13	06:15 20:22	05:00 21:27	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	05:37 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	04:16 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 22:21	04:43 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	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	06:21 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	05:52 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 15:30
23	08:38 16:19	07:29 17:32	06:13 18:35	05:48 20:44	04:41 21:47	04:15 22:22	04:51 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	05:45 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 20:36	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 20:50	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 16:28	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 17:44	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	07:19 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	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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SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Liepas - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (459)
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	04:20 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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SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 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	09:37 (7)	06:48		10:43 (7)	05:28	07:13 (8)	04:27
	15:40	16:40			17:46	87	11:04 (7)	19:55	48	11:31 (7)	21:01	28
2	09:00	08:19			07:11	09:36 (7)	06:45		10:45 (7)	05:25	05:55 (9)	04:26
	15:41	16:42			17:48	88	11:04 (7)	19:57	41	11:26 (7)	21:04	34
3	09:00	08:17			07:08	09:35 (7)	06:42		10:47 (8)	05:23	05:53 (9)	04:25
	15:42	16:45			17:51	89	11:04 (7)	20:00	47	11:21 (7)	21:06	33
4	08:59	08:15			07:05	09:34 (7)	06:39		10:48 (8)	05:21	05:51 (9)	04:23
	15:44	16:47			17:53	90	11:04 (7)	20:02	44	11:16 (7)	21:08	31
5	08:59	08:13			07:03	09:35 (7)	06:37		10:49 (8)	05:18	05:50 (9)	04:22
	15:45	16:49			17:55	90	11:05 (7)	20:04	26	07:47 (8)	21:10	22
6	08:58	08:10			07:00	09:34 (7)	06:34		10:50 (8)	05:16	05:49 (9)	04:21
	15:47	16:52			17:57	91	11:05 (7)	20:06	31	07:49 (8)	21:12	24
7	08:57	08:08			06:57	09:33 (7)	06:31		10:51 (8)	05:13	05:48 (9)	04:20
	15:48	16:54			18:00	92	11:05 (7)	20:08	34	07:50 (8)	21:14	26
8	08:57	08:06		10:11 (7)	06:55	09:33 (7)	06:28		10:52 (8)	05:11	05:47 (9)	04:20
	15:50	16:57	21		18:02	91	11:04 (7)	20:11	36	07:51 (8)	21:17	27
9	08:56	08:04		10:06 (7)	06:52	09:32 (7)	06:26		10:53 (8)	05:09	05:46 (9)	04:19
	15:52	16:59	30		18:04	92	11:04 (7)	20:13	44	07:52 (8)	21:19	28
10	08:55	08:01		10:04 (7)	06:49	09:33 (7)	06:23		10:54 (8)	05:07	05:45 (9)	04:18
	15:53	17:01	36		18:06	92	11:05 (7)	20:15	49	07:52 (8)	21:21	29
11	08:54	07:59		10:00 (7)	06:46	07:13 (10)	06:20		10:55 (8)	05:04	05:45 (9)	04:18
	15:55	17:04	43		18:09	94	11:04 (7)	20:17	54	07:53 (8)	21:23	30
12	08:53	07:57		09:57 (7)	06:44	07:10 (10)	06:17		10:56 (8)	05:02	05:45 (9)	04:17
	15:57	17:06	48		18:11	100	11:03 (7)	20:19	59	07:53 (8)	21:25	31
13	08:52	07:54		09:56 (7)	06:41	07:07 (10)	06:15		10:57 (8)	05:00	05:45 (9)	04:16
	15:59	17:08	52		18:13	106	11:03 (7)	20:22	62	07:53 (8)	21:27	31
14	08:51	07:52		09:54 (7)	06:38	07:04 (10)	06:12		10:58 (8)	04:58	05:45 (9)	04:16
	16:01	17:11	55		18:15	109	11:02 (7)	20:24	65	07:54 (8)	21:29	31
15	08:50	07:49		09:52 (7)	06:35	07:02 (10)	06:09		10:59 (8)	04:56	05:45 (9)	04:16
	16:03	17:13	60		18:18	111	11:02 (7)	20:26	65	07:53 (8)	21:31	31
16	08:48	07:47		09:50 (7)	06:33	07:01 (10)	06:07		11:00 (8)	04:54	05:45 (9)	04:15
	16:05	17:16	63		18:20	112	11:01 (7)	20:28	65	07:53 (8)	21:34	30
17	08:47	07:45		09:49 (7)	06:30	07:00 (10)	06:04		11:01 (8)	04:52	05:44 (9)	04:15
	16:07	17:18	65		18:22	112	11:00 (7)	20:30	64	07:53 (8)	21:36	31
18	08:46	07:42		09:48 (7)	06:27	06:59 (10)	06:01		11:02 (8)	04:50	05:45 (9)	04:15
	16:09	17:20	68		18:24	112	10:59 (7)	20:33	62	07:52 (8)	21:38	31
19	08:44	07:40		09:46 (7)	06:24	06:59 (10)	05:59		11:03 (8)	04:48	05:45 (9)	04:15
	16:11	17:23	71		18:26	111	10:58 (7)	20:35	61	07:53 (8)	21:40	30
20	08:43	07:37		09:45 (7)	06:21	06:59 (10)	05:56		11:04 (8)	04:46	05:45 (9)	04:15
	16:13	17:25	73		18:29	108	10:56 (7)	20:37	57	07:52 (8)	21:42	30
21	08:41	07:34		09:44 (7)	06:19	07:00 (10)	05:53		11:05 (8)	04:44	05:18 (1)	04:15
	16:15	17:27	75		18:31	105	10:56 (7)	20:39	51	07:52 (8)	21:43	31
22	08:40	07:32		09:43 (7)	06:16	07:00 (10)	05:51		11:06 (8)	04:42	05:16 (1)	04:15
	16:17	17:30	77		18:33	102	10:54 (7)	20:41	44	07:51 (8)	21:45	33
23	08:38	07:29		09:42 (7)	06:13	07:00 (10)	05:48		11:07 (8)	04:41	05:15 (1)	04:15
	16:19	17:32	78		18:35	98	10:52 (7)	20:44	43	07:50 (8)	21:47	34
24	08:36	07:27		09:41 (7)	06:10	07:01 (10)	05:45		11:08 (8)	04:39	05:13 (1)	04:16
	16:22	17:34	81		18:38	95	10:51 (7)	20:46	42	07:49 (8)	21:49	35
25	08:34	07:24		09:40 (7)	06:07	07:03 (10)	05:43		11:09 (8)	04:37	05:12 (1)	04:16
	16:24	17:37	82		18:40	87	10:49 (7)	20:48	41	07:49 (8)	21:51	36
26	08:33	07:21		09:39 (7)	06:05	07:06 (10)	05:40		11:10 (8)	04:36	05:10 (1)	04:17
	16:26	17:39	84		18:42	76	10:46 (7)	20:50	39	07:47 (8)	21:53	37
27	08:31	07:19		09:38 (7)	06:02	09:36 (7)	05:38		11:11 (8)	04:34	05:09 (1)	04:17
	16:28	17:41	85		18:44	69	10:45 (7)	20:53	37	07:46 (8)	21:54	38
28	08:29	07:16		09:38 (7)	05:59	09:37 (7)	05:35		11:12 (8)	04:32	05:08 (1)	04:18
	16:31	17:44	86		18:46	66	10:43 (7)	20:55	35	07:45 (8)	21:56	39
29	08:27				06:56		10:38 (7)	05:33		07:10 (8)	04:31	
	16:33				19:49	62	11:40 (7)	20:57	33	07:43 (8)	21:58	38
30	08:25				06:53		10:39 (7)	05:30		07:12 (8)	04:30	
	16:35				19:51	58	11:37 (7)	20:59	30	07:42 (8)	21:59	39
31	08:23				06:51		10:41 (7)			04:28	05:04 (1)	
	16:38				19:53	53	11:34 (7)			22:01	06:09 (9)	
Potential sun hours	227	262			365		429			515		539
Total, worst case			1333		2848		1409			986		635
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			259		1148		600			574		355

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

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

Flickering_Valka_Vestas162

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 15:10/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 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.

	July		August		September		October		November		December	
1	04:20	05:11 (1)	05:09	05:56 (9)	06:15	06:46 (3)	07:18	07:48 (10)	07:28	09:33 (7)	08:33	
2	22:20	20	05:31 (1)	21:35	30	06:26 (9)	20:17	54	07:52 (8)	18:53	102	11:42 (7)
3	04:21	05:11 (1)	05:11	05:56 (9)	06:17	06:48 (3)	07:21	07:50 (10)	07:30	09:37 (7)	08:35	
4	22:19	21	05:32 (1)	21:33	30	06:26 (9)	20:15	49	07:51 (8)	18:51	98	11:42 (7)
5	04:22	05:12 (1)	05:13	05:56 (9)	06:19	06:50 (3)	07:23	07:50 (10)	07:32	09:42 (7)	08:37	
6	22:19	20	05:32 (1)	21:31	28	06:24 (9)	20:12	44	07:50 (8)	18:48	92	11:42 (7)
7	04:23	05:12 (1)	05:15	05:56 (9)	06:21	07:12 (8)	07:25	07:48 (8)	18:45	92	11:42 (7)	16:25
8	22:18	20	05:32 (1)	21:29	28	06:24 (9)	20:09	36	07:48 (8)	18:45	92	11:42 (7)
9	04:24	05:12 (1)	05:17	05:57 (9)	06:23	07:13 (8)	07:27	07:45 (8)	18:40	92	11:41 (7)	16:21
10	22:17	21	05:33 (1)	21:26	26	06:23 (9)	20:06	34	07:47 (8)	18:42	92	11:42 (7)
11	04:25	05:12 (1)	05:20	05:58 (9)	06:26	07:14 (8)	07:29	07:45 (8)	18:40	92	11:41 (7)	16:21
12	22:17	21	05:33 (1)	21:24	25	06:23 (9)	20:04	31	07:45 (8)	18:40	92	11:41 (7)
13	04:26	05:12 (1)	05:22	05:58 (9)	06:28	07:16 (8)	07:31	07:45 (8)	18:40	92	11:41 (7)	16:21
14	22:16	21	05:33 (1)	21:22	24	06:22 (9)	20:01	26	07:42 (8)	18:37	91	11:40 (7)
15	04:27	05:12 (1)	05:24	06:00 (9)	06:30	07:18 (8)	07:34	07:45 (8)	18:40	92	11:41 (7)	16:21
16	22:15	21	05:33 (1)	21:19	21	06:21 (9)	19:58	43	11:09 (7)	18:34	91	11:41 (7)
17	04:29	05:12 (1)	05:26	06:01 (9)	06:32	07:21 (8)	07:36	07:45 (8)	18:40	92	11:41 (7)	16:21
18	22:14	28	06:12 (9)	21:17	33	07:43 (8)	19:55	48	11:15 (7)	18:31	90	11:40 (7)
19	04:30	05:12 (1)	05:28	06:03 (9)	06:34	07:18 (8)	07:34	07:45 (8)	18:40	92	11:41 (7)	16:21
20	22:13	32	06:14 (9)	21:15	35	07:46 (8)	19:52	41	11:19 (7)	18:29	90	11:39 (7)
21	04:32	05:13 (1)	05:30	06:06 (9)	06:36	07:23 (7)	07:40	07:45 (8)	18:40	92	11:41 (7)	16:21
22	22:11	34	06:16 (9)	21:12	33	07:48 (8)	19:50	48	11:23 (7)	18:26	89	11:38 (7)
23	04:33	05:13 (1)	05:32	07:21 (8)	06:38	07:33 (7)	07:42	07:45 (8)	18:40	92	11:41 (7)	16:21
24	22:10	37	06:17 (9)	21:10	28	07:49 (8)	19:47	52	11:25 (7)	18:23	88	11:38 (7)
25	04:34	05:13 (1)	05:34	07:20 (8)	06:40	07:30 (7)	07:45	07:45 (8)	18:40	92	11:41 (7)	16:21
26	22:09	38	06:18 (9)	21:07	31	07:51 (8)	19:44	58	11:28 (7)	18:21	87	11:37 (7)
27	04:36	05:15 (1)	05:37	07:19 (8)	06:42	07:28 (7)	07:47	07:45 (8)	18:40	92	11:41 (7)	16:21
28	22:08	38	06:19 (9)	21:05	33	07:52 (8)	19:41	62	11:30 (7)	18:18	86	11:36 (7)
29	04:38	05:16 (1)	05:39	07:17 (8)	06:45	07:26 (7)	07:49	07:45 (8)	18:40	92	11:41 (7)	16:21
30	22:06	39	06:20 (9)	21:02	36	07:53 (8)	19:38	66	11:32 (7)	18:15	85	11:36 (7)
31	04:39	05:18 (1)	05:41	07:16 (8)	06:47	07:25 (7)	07:51	07:45 (8)	18:40	92	11:41 (7)	16:21
32	22:05	38	06:21 (9)	21:00	38	07:54 (8)	19:36	68	11:33 (7)	18:12	83	11:34 (7)
33	04:41	05:19 (1)	05:43	07:15 (8)	06:49	07:23 (7)	07:53	07:45 (8)	18:40	92	11:41 (7)	16:21
34	22:03	38	06:22 (9)	20:57	40	07:55 (8)	19:33	72	11:35 (7)	18:10	82	11:33 (7)
35	04:43	05:21 (1)	05:45	07:14 (8)	06:51	07:51 (10)	07:56	07:45 (8)	18:40	92	11:41 (7)	16:21
36	22:02	37	06:23 (9)	20:55	41	07:55 (8)	19:30	86	11:36 (7)	18:07	80	11:33 (7)
37	04:44	05:22 (1)	05:47	07:14 (8)	06:53	07:48 (10)	07:58	07:45 (8)	18:40	92	11:41 (7)	16:21
38	22:00	36	06:23 (9)	20:52	42	07:56 (8)	19:27	93	11:37 (7)	18:05	78	11:31 (7)
39	04:46	05:24 (1)	05:49	07:13 (8)	06:55	07:47 (10)	08:00	07:45 (8)	18:40	92	11:41 (7)	16:21
40	21:59	35	06:24 (9)	20:50	43	07:56 (8)	19:24	98	11:39 (7)	18:02	77	11:31 (7)
41	04:48	05:25 (1)	05:51	07:12 (8)	06:57	07:46 (10)	08:02	07:45 (8)	18:40	92	11:41 (7)	16:21
42	21:57	34	06:24 (9)	20:47	44	07:56 (8)	19:22	101	11:40 (7)	17:59	74	11:29 (7)
43	04:50	05:27 (1)	05:54	06:49 (3)	06:59	07:44 (10)	08:05	07:45 (8)	18:40	92	11:41 (7)	16:21
44	21:55	32	06:25 (9)	20:44	52	07:56 (8)	19:19	106	11:40 (7)	17:57	72	11:27 (7)
45	04:52	05:56 (9)	05:56	06:46 (3)	07:01	07:43 (10)	08:07	07:45 (8)	18:40	92	11:41 (7)	16:21
46	21:53	29	06:25 (9)	20:42	58	07:56 (8)	19:16	109	11:41 (7)	17:54	70	11:27 (7)
47	04:53	05:55 (9)	05:58	06:45 (3)	07:04	07:43 (10)	08:09	07:45 (8)	18:40	92	11:41 (7)	16:21
48	21:51	30	06:25 (9)	20:39	60	07:56 (8)	19:13	110	11:41 (7)	17:52	67	11:25 (7)
49	04:55	05:55 (9)	06:00	06:43 (3)	07:06	07:42 (10)	07:11	07:45 (8)	18:40	92	11:41 (7)	16:21
50	21:50	31	06:26 (9)	20:36	63	07:56 (8)	19:10	111	11:41 (7)	16:49	65	10:24 (7)
51	04:57	05:55 (9)	06:02	06:42 (3)	07:08	07:42 (10)	07:14	07:45 (8)	18:40	92	11:41 (7)	16:21
52	21:48	31	06:26 (9)	20:34	65	07:56 (8)	19:07	111	11:42 (7)	16:47	62	10:22 (7)
53	04:59	05:56 (9)	06:04	06:42 (3)	07:10	07:42 (10)	07:16	07:45 (8)	18:40	92	11:41 (7)	16:21
54	21:46	30	06:26 (9)	20:31	65	07:56 (8)	19:05	112	11:42 (7)	16:44	59	10:21 (7)
55	05:01	05:55 (9)	06:06	06:41 (3)	07:12	07:43 (10)	07:18	07:45 (8)	18:40	92	11:41 (7)	16:21
56	21:44	31	06:26 (9)	20:28	65	07:55 (8)	19:02	112	11:43 (7)	16:42	55	10:18 (7)
57	05:03	05:55 (9)	06:09	06:41 (3)	07:14	07:44 (10)	07:21	07:45 (8)	18:40	92	11:41 (7)	16:21
58	21:42	31	06:26 (9)	20:26	65	07:55 (8)	18:59	110	11:43 (7)	16:39	51	10:17 (7)
59	05:05	05:55 (9)	06:11	06:42 (3)	07:16	07:46 (10)	07:23	07:45 (8)	18:40	92	11:41 (7)	16:21
60	21:40	31	06:26 (9)	20:23	62	07:54 (8)	18:56	107	11:43 (7)	16:37	47	10:14 (7)
61	05:07	05:55 (9)	06:13	06:44 (3)		07:25		07:45 (8)	18:40	92	11:41 (7)	16:21
62	21:37	31	06:26 (9)	20:20	58	07:53 (8)		16:34	42	10:12 (7)		
Potential sun hours	538		474			386		321		241		207
Total, worst case	936		1302			2198		2429		82		
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	440		657			1016		687		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_Vestas162

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 15:10/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 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			07:14		08:09 (6)	06:48		07:29 (5)	05:28			04:27		
	15:40	5	09:48 (7)	16:40			17:46	26	08:35 (6)	19:55	21	07:50 (5)	21:01			22:03		
2	09:00		09:43 (7)	08:19			07:11		08:09 (6)	06:45		07:30 (5)	05:25			04:26		
	15:41	7	09:50 (7)	16:42			17:48	25	08:34 (6)	19:57	18	07:48 (5)	21:04			22:04		
3	09:00		09:42 (7)	08:17			07:08		08:10 (6)	06:42		07:31 (5)	05:23			04:25		
	15:42	9	09:51 (7)	16:45			17:51	23	08:33 (6)	20:00	15	07:46 (5)	21:06			22:06		
4	08:59		09:41 (7)	08:15			07:06		08:12 (6)	06:39		07:33 (5)	05:21			04:23		
	15:44	11	09:52 (7)	16:47			17:53	20	08:32 (6)	20:02	11	07:44 (5)	21:08			22:07		
5	08:59		09:40 (7)	08:13			07:03		08:13 (6)	06:37			05:18			04:22		
	15:45	13	09:53 (7)	16:49			17:55	17	08:30 (6)	20:04			21:10			22:08		
6	08:58		09:39 (7)	08:10			07:00		08:15 (6)	06:34			05:16			04:21		
	15:47	15	09:54 (7)	16:52			17:57	12	08:27 (6)	20:06			21:12			22:10		
7	08:58		09:38 (7)	08:08			06:57		07:24 (9)	06:31			05:13			04:20		
	15:48	17	09:55 (7)	16:54			18:00	4	07:28 (9)	20:08			21:15			22:11		
8	08:57		09:38 (7)	08:06			06:55		07:21 (9)	06:28			05:11			04:20		
	15:50	18	09:56 (7)	16:57			18:02	8	07:29 (9)	20:11			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	19	09:57 (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			18:06	15	07:31 (9)	20:15			21:21			22:14		
11	08:54		09:39 (7)	07:59			06:46		07:13 (9)	06:20			05:04			04:17		
	15:55	21	10:00 (7)	17:04	6	08:29 (8)	08:35 (8)	18:09	18	07:31 (9)	20:17		21:23			22:15		
12	08:53		09:38 (7)	07:57			08:27 (8)	06:44		07:11 (9)	06:17		05:02			04:17		
	15:57	22	10:00 (7)	17:06	10	08:37 (8)	18:11	20	07:31 (9)	20:19			21:25			22:16		
13	08:52		09:39 (7)	07:54			08:24 (8)	06:41		07:11 (9)	06:15		05:00			04:16		
	15:59	22	10:01 (7)	17:09	14	08:38 (8)	18:13	19	07:30 (9)	20:22			21:27			22:17		
14	08:51		09:38 (7)	07:52			08:21 (8)	06:38		07:11 (9)	06:12		04:58			04:16		
	16:01	23	10:01 (7)	17:11	18	08:39 (8)	18:15	18	07:29 (9)	20:24			21:29			22:18		
15	08:50		09:39 (7)	07:50			08:20 (8)	06:35		07:12 (9)	06:09		04:56			04:16		
	16:03	24	10:03 (7)	17:13	20	08:40 (8)	18:18	17	07:29 (9)	20:26			21:32			22:19		
16	08:48		09:39 (7)	07:47			08:19 (8)	06:33		07:13 (9)	06:07		04:54			04:15		
	16:05	24	10:03 (7)	17:16	21	08:40 (8)	18:20	15	07:28 (9)	20:28			21:34			22:19		
17	08:47		09:38 (7)	07:45			08:16 (6)	06:30		07:14 (9)	06:04		04:52			04:15		
	16:07	25	10:03 (7)	17:18	24	08:40 (8)	18:22	12	07:26 (9)	20:30			21:36			22:20		
18	08:46		09:39 (7)	07:42			08:14 (6)	06:27		07:16 (9)	06:01		04:50			04:15		
	16:09	25	10:04 (7)	17:20	26	08:40 (8)	18:24	6	07:22 (9)	20:33			21:38			22:20		
19	08:44		09:39 (7)	07:40			08:13 (6)	06:24			05:59		04:48			04:15		
	16:11	25	10:04 (7)	17:23	27	08:40 (8)	18:27			20:35			21:40			22:21		
20	08:43		09:40 (7)	07:37			08:11 (6)	06:21			05:56		04:46			04:15		
	16:13	25	10:05 (7)	17:25	28	08:39 (8)	18:29			20:37			21:42			22:21		
21	08:41		09:40 (7)	07:35			08:11 (6)	06:19			05:53		04:44			04:15		
	16:15	25	10:05 (7)	17:27	28	08:39 (8)	18:31			20:39			21:44			22:21		
22	08:40		09:40 (7)	07:32			08:10 (6)	06:16		06:42 (5)	05:51		04:42			04:15		
	16:17	25	10:05 (7)	17:30	27	08:37 (8)	18:33	6	06:48 (5)	20:42			21:45			22:22		
23	08:38		09:41 (7)	07:29			08:09 (6)	06:13		06:39 (5)	05:48		04:41			04:15		
	16:19	24	10:05 (7)	17:32	27	08:36 (6)	18:35	11	06:50 (5)	20:44			21:47			22:22		
24	08:36		09:41 (7)	07:27			08:09 (6)	06:10		06:36 (5)	05:45		04:39			04:16		
	16:22	24	10:05 (7)	17:34	28	08:37 (6)	18:38	15	06:51 (5)	20:46			21:49			22:22		
25	08:35		09:42 (7)	07:24			08:09 (6)	06:07		06:33 (5)	05:43		04:37			04:16		
	16:24	23	10:05 (7)	17:37	28	08:37 (6)	18:40	18	06:51 (5)	20:48			21:51			22:22		
26	08:33		09:43 (7)	07:22			08:08 (6)	06:05		06:31 (5)	05:40		04:36			04:17		
	16:26	21	10:04 (7)	17:39	29	08:37 (6)	18:42	21	06:52 (5)	20:50			21:53			22:22		
27	08:31		09:44 (7)	07:19			08:08 (6)	06:02		06:30 (5)	05:38		04:34			04:17		
	16:28	20	10:04 (7)	17:41	28	08:36 (6)	18:44	22	06:52 (5)	20:53			21:55			22:22		
28	08:29		09:45 (7)	07:16			08:09 (6)	05:59		06:29 (5)	05:35		04:32			04:18		
	16:31	19	10:04 (7)	17:44	27	08:36 (6)	18:46	23	06:52 (5)	20:55			21:56			22:21		
29	08:27		09:46 (7)				06:56		07:29 (5)	05:33			04:31			04:18		
	16:33	16	10:02 (7)				19:49	23	07:52 (5)	20:57			21:58			22:21		
30	08:25		09:48 (7)				06:53		07:28 (5)	05:30			04:30			04:19		
	16:35	12	10:00 (7)				19:51	23	07:51 (5)	20:59			22:00			22:21		
31	08:23		09:51 (7)				06:51		07:29 (5)				04:28					
	16:38	7	09:58 (7)				19:53	22	07:51 (5)				22:01					
Potential sun hours	227			262			365			429			515			539		
Total, worst case		587			416			471			65							
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		64			81			190			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_Vestas162

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 15:10/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 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	19 08:09 (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	16 08:08 (9)	16:27
4	04:23	05:15	06:21	07:25	07:55 (9)	07:35
	22:18	21:29	20:09	18:45	13 08:08 (9)	16:25
5	04:24	05:17	06:23	07:27	07:57 (9)	07:37
	22:18	21:27	20:06	18:42	10 08:07 (9)	16:23
6	04:25	05:20	06:26	07:29	07:59 (9)	07:39
	22:17	21:24	20:04	18:40	6 08:05 (9)	16:21
7	04:26	05:22	06:28	07:31	08:01 (9)	07:41
	22:16	21:22	20:01	18:37	7 08:59 (6)	16:18
8	04:27	05:24	06:30	07:33 (5)	07:34	08:50 (6)
	22:15	21:20	19:58	11 07:38 (5)	18:34	14 09:04 (6)
9	04:29	05:26	06:32	07:35 (5)	07:36	08:47 (6)
	22:14	21:17	19:55	15 07:40 (5)	18:31	19 09:06 (6)
10	04:30	05:28	06:34	07:37 (5)	07:38	08:45 (6)
	22:13	21:15	19:52	18 07:41 (5)	18:29	22 09:07 (6)
11	04:31	05:30	06:36	07:39 (5)	07:40	08:44 (6)
	22:12	21:12	19:50	20 07:42 (5)	18:26	24 09:08 (6)
12	04:33	05:32	06:38	07:41 (5)	07:42	08:43 (6)
	22:10	21:10	19:47	21 07:42 (5)	18:23	26 09:09 (6)
13	04:34	05:34	06:40	07:43 (5)	07:45	08:42 (6)
	22:09	21:07	19:44	22 07:42 (5)	18:21	27 09:09 (6)
14	04:36	05:37	06:42	07:45 (5)	07:47	08:41 (6)
	22:08	21:05	19:41	23 07:42 (5)	18:18	28 09:09 (6)
15	04:38	05:39	06:45	07:47 (5)	07:49	08:41 (6)
	22:06	21:02	19:38	23 07:42 (5)	18:15	28 09:09 (6)
16	04:39	05:41	06:47	07:49 (5)	07:51	08:40 (6)
	22:05	21:00	19:36	23 07:41 (5)	18:13	29 09:09 (6)
17	04:41	05:43	06:49	07:51 (5)	07:54	08:41 (6)
	22:03	20:57	19:33	22 07:40 (5)	18:10	28 09:09 (6)
18	04:43	05:45	06:51	07:53 (5)	07:56	08:40 (6)
	22:02	20:55	19:30	19 07:39 (5)	18:07	28 09:08 (6)
19	04:44	05:47	06:53	07:55 (5)	07:58	08:40 (6)
	22:00	20:52	19:27	16 07:39 (5)	18:05	27 09:07 (6)
20	04:46	05:49	06:55	07:57 (5)	08:00	08:41 (6)
	21:59	20:50	19:24	12 07:37 (5)	18:02	28 09:09 (8)
21	04:48	05:51	06:57	07:59 (5)	08:02	08:41 (6)
	21:57	20:47	19:22	7 07:34 (5)	17:59	28 09:09 (8)
22	04:50	05:54	06:59	08:01 (5)	08:05	08:43 (6)
	21:55	20:44	19:19	17:57	27 09:10 (8)	15:50
23	04:51	05:56	07:01	08:03 (5)	08:07	08:43 (6)
	21:53	20:42	19:16	17:54	27 09:10 (8)	15:48
24	04:53	05:58	07:04	08:05 (5)	08:09	08:44 (6)
	21:52	20:39	19:13	17:52	26 09:10 (8)	15:46
25	04:55	06:00	07:06	08:07 (5)	07:12	07:47 (6)
	21:50	20:36	19:10	16:49	23 08:10 (8)	15:45
26	04:57	06:02	07:08	07:56 (9)	07:14	07:48 (8)
	21:48	20:34	19:07	11 08:07 (9)	16:47	21 08:09 (8)
27	04:59	06:04	07:10	07:54 (9)	07:16	07:49 (8)
	21:46	20:31	19:05	14 08:08 (9)	16:44	20 08:09 (8)
28	05:01	06:06	07:12	07:53 (9)	07:18	07:51 (8)
	21:44	20:28	19:02	17 08:10 (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	18 08:10 (9)	16:39	13 08:07 (8)
30	05:05	06:11	07:16	07:51 (9)	07:23	07:56 (8)
	21:40	20:23	18:56	19 08:10 (9)	16:37	10 08:06 (8)
31	05:07	06:13		07:25	07:25	07:59 (8)
	21:38	20:20		16:34	5 08:04 (8)	
Potential sun hours	538	474	386	321	241	207
Total, worst case			331	636	430	161
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			153	180	34	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_Vestas162

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 15:10/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 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		08:23 (6)	06:48		07:37 (5)	05:28			04:27		
	15:40	19	10:05 (7)	16:40			17:46	21	08:44 (6)	19:55	17	07:54 (5)	21:01			22:03		
2	09:00		09:47 (7)	08:19			07:11		08:25 (6)	06:45		07:39 (5)	05:25			04:26		
	15:41	19	10:06 (7)	16:42			17:48	16	08:41 (6)	19:57	13	07:52 (5)	21:04			22:04		
3	09:00		09:46 (7)	08:17			07:08		08:27 (6)	06:42		07:41 (5)	05:23			04:25		
	15:42	21	10:07 (7)	16:45			17:51	11	08:38 (6)	20:00	7	07:48 (5)	21:06			22:06		
4	08:59		09:46 (7)	08:15			07:06			06:39			05:21			04:23		
	15:44	21	10:07 (7)	16:47			17:53			20:02			21:08			22:07		
5	08:59		09:46 (7)	08:13			07:03		07:30 (9)	06:37			05:18			04:22		
	15:45	22	10:08 (7)	16:49			17:55	5	07:35 (9)	20:04			21:10			22:08		
6	08:58		09:46 (7)	08:10			07:00		07:27 (9)	06:34			05:16			04:21		
	15:47	22	10:08 (7)	16:52			17:57	10	07:37 (9)	20:06			21:12			22:10		
7	08:58		09:47 (7)	08:08		08:39 (8)	06:57		07:24 (9)	06:31			05:13			04:20		
	15:48	22	10:09 (7)	16:54	1	08:40 (8)	18:00	13	07:37 (9)	20:08			21:15			22:11		
8	08:57		09:47 (7)	08:06		08:37 (8)	06:55		07:21 (9)	06:28			05:11			04:20		
	15:50	23	10:10 (7)	16:57	7	08:44 (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		07:18 (9)	06:26			05:09			04:19		
	15:51	24	10:11 (7)	16:59	11	08:45 (8)	18:04	20	07:38 (9)	20:13			21:19			22:13		
10	08:55		09:48 (7)	08:01		08:32 (8)	06:49		07:18 (9)	06:23			05:07			04:18		
	15:53	24	10:12 (7)	17:01	15	08:47 (8)	18:06	20	07:38 (9)	20:15			21:21			22:14		
11	08:54		09:48 (7)	07:59		08:29 (8)	06:46		07:18 (9)	06:20			05:04			04:17		
	15:55	24	10:12 (7)	17:04	18	08:47 (8)	18:09	20	07:38 (9)	20:17			21:23			22:15		
12	08:53		09:48 (7)	07:57		08:28 (8)	06:44		07:18 (9)	06:17			05:02			04:17		
	15:57	24	10:12 (7)	17:06	21	08:49 (8)	18:11	19	07:37 (9)	20:19			21:25			22:16		
13	08:52		09:48 (7)	07:54		08:28 (6)	06:41		07:18 (9)	06:15			05:00			04:16		
	15:59	25	10:13 (7)	17:09	21	08:49 (8)	18:13	18	07:36 (9)	20:22			21:27			22:17		
14	08:51		09:48 (7)	07:52		08:26 (6)	06:38		07:19 (9)	06:12			04:58			04:16		
	16:01	25	10:13 (7)	17:11	23	08:49 (8)	18:15	15	07:34 (9)	20:24			21:29			22:18		
15	08:50		09:49 (7)	07:50		08:25 (6)	06:35		07:21 (9)	06:09			04:56			04:16		
	16:03	25	10:14 (7)	17:13	24	08:49 (8)	18:18	12	07:33 (9)	20:26			21:32			22:19		
16	08:48		09:49 (7)	07:47		08:23 (6)	06:33		07:23 (9)	06:07			04:54			04:15		
	16:05	25	10:14 (7)	17:16	26	08:49 (8)	18:20	7	07:30 (9)	20:28			21:34			22:19		
17	08:47		09:49 (7)	07:45		08:22 (6)	06:30			06:04			04:52			04:15		
	16:07	25	10:14 (7)	17:18	26	08:48 (8)	18:22			20:30			21:36			22:20		
18	08:46		09:51 (7)	07:42		08:22 (6)	06:27			06:01			04:50			04:15		
	16:09	24	10:15 (7)	17:20	26	08:48 (6)	18:24			20:33			21:38			22:20		
19	08:44		09:51 (7)	07:40		08:21 (6)	06:24			05:59			04:48			04:15		
	16:11	24	10:15 (7)	17:23	28	08:49 (6)	18:27			20:35			21:40			22:21		
20	08:43		09:51 (7)	07:37		08:20 (6)	06:21		06:47 (5)	05:56			04:46			04:15		
	16:13	24	10:15 (7)	17:25	29	08:49 (6)	18:29	8	06:55 (5)	20:37			21:42			22:21		
21	08:41		09:52 (7)	07:35		08:20 (6)	06:19		06:45 (5)	05:53			04:44			04:15		
	16:15	23	10:15 (7)	17:27	29	08:49 (6)	18:31	12	06:57 (5)	20:39			21:44			22:21		
22	08:40		09:53 (7)	07:32		08:20 (6)	06:16		06:42 (5)	05:51			04:42			04:15		
	16:17	22	10:15 (7)	17:30	29	08:49 (6)	18:33	16	06:58 (5)	20:42			21:45			22:22		
23	08:38		09:53 (7)	07:29		08:19 (6)	06:13		06:39 (5)	05:48			04:41			04:15		
	16:19	21	10:14 (7)	17:32	30	08:49 (6)	18:35	20	06:59 (5)	20:44			21:47			22:22		
24	08:36		09:54 (7)	07:27		08:20 (6)	06:10		06:37 (5)	05:45			04:39			04:16		
	16:22	20	10:14 (7)	17:34	29	08:49 (6)	18:38	22	06:59 (5)	20:46			21:49			22:22		
25	08:35		09:56 (7)	07:24		08:20 (6)	06:07		06:36 (5)	05:43			04:37			04:16		
	16:24	17	10:13 (7)	17:37	28	08:48 (6)	18:40	23	06:59 (5)	20:48			21:51			22:22		
26	08:33		09:57 (7)	07:22		08:20 (6)	06:05		06:36 (5)	05:40			04:36			04:17		
	16:26	15	10:12 (7)	17:39	27	08:47 (6)	18:42	24	07:00 (5)	20:50			21:53			22:22		
27	08:31		09:59 (7)	07:19		08:21 (6)	06:02		06:36 (5)	05:38			04:34			04:17		
	16:28	12	10:11 (7)	17:41	25	08:46 (6)	18:44	23	06:59 (5)	20:53			21:55			22:22		
28	08:29		10:03 (7)	07:16		08:22 (6)	05:59		06:35 (5)	05:35			04:32			04:18		
	16:31	5	10:08 (7)	17:44	24	08:46 (6)	18:46	24	06:59 (5)	20:55			21:56			22:21		
29	08:27						06:56		07:35 (5)	05:33			04:31			04:18		
	16:33						19:49	23	07:58 (5)	20:57			21:58			22:21		
30	08:25						06:53		07:35 (5)	05:30			04:30			04:19		
	16:35						19:51	22	07:57 (5)	20:59			22:00			22:21		
31	08:23						06:51		07:37 (5)				04:28					
	16:38						19:53	19	07:56 (5)				22:01					
Potential sun hours	227			262			365			429			515			539		
Total, worst case		597			497			460			37							
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		65			97			185			16							

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

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

Flickering_Valka_Vestas162

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 15:10/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Lukstini (94880090014002) - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (778)
Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	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	19	16:32
2	04:21	05:11	06:17	07:21	07:56 (9)	08:04 (8)
	22:20	21:33	20:15	18:51	20	16:30
3	04:22	05:13	06:19	07:23	07:55 (9)	08:07 (8)
	22:19	21:31	20:12	18:48	20	16:27
4	04:23	05:15	06:21	07:25	07:56 (9)	08:08
	22:18	21:29	20:09	18:45	20	16:25
5	04:24	05:17	06:23	07:27	07:57 (9)	08:10
	22:18	21:27	20:06	18:42	18	16:23
6	04:25	05:20	06:26	07:29	07:59 (9)	08:12
	22:17	21:24	20:04	18:40	15	16:21
7	04:26	05:22	06:28	07:31	08:01 (9)	08:14
	22:16	21:22	20:01	18:37	11	16:18
8	04:27	05:24	06:30	07:34	08:04 (9)	08:16
	22:15	21:20	19:58	18:34	8	16:16
9	04:29	05:26	06:32	07:36 (5)	08:06 (9)	08:18
	22:14	21:17	19:55	18:31	3	16:14
10	04:30	05:28	06:34	07:38	09:05 (6)	08:20
	22:13	21:15	19:52	18:29	4	16:12
11	04:31	05:30	06:36	07:40	09:00 (6)	08:22
	22:12	21:12	19:50	18:26	13	16:10
12	04:33	05:32	06:38	07:42	08:58 (6)	08:24
	22:10	21:10	19:47	18:23	18	16:08
13	04:34	05:34	06:40	07:45	08:56 (6)	08:26
	22:09	21:07	19:44	18:21	21	16:06
14	04:36	05:37	06:42	07:47	08:54 (6)	08:28
	22:08	21:05	19:41	18:18	24	16:04
15	04:38	05:39	06:45	07:49	08:53 (6)	08:30
	22:06	21:02	19:38	18:15	26	16:02
16	04:39	05:41	06:47	07:51	08:52 (6)	08:32
	22:05	21:00	19:36	18:13	28	16:00
17	04:41	05:43	06:49	07:54	08:52 (6)	08:34
	22:03	20:57	19:33	18:10	29	15:58
18	04:43	05:45	06:51	07:56	08:51 (6)	08:36
	22:02	20:55	19:30	18:07	29	15:56
19	04:44	05:47	06:53	07:58	08:50 (6)	08:38
	22:00	20:52	19:27	18:05	30	15:55
20	04:46	05:49	06:55	07:59	08:51 (6)	08:40
	21:59	20:50	19:24	18:02	29	15:53
21	04:48	05:51	06:57	08:02	08:50 (6)	08:42
	21:57	20:47	19:22	17:59	30	15:51
22	04:50	05:54	06:59	08:05	08:51 (6)	08:44
	21:55	20:44	19:19	17:57	29	15:50
23	04:51	05:56	07:01	08:07	08:51 (6)	08:46
	21:53	20:42	19:16	17:54	28	15:48
24	04:53	05:58	07:04	08:09	08:51 (6)	08:48
	21:52	20:39	19:13	17:52	27	15:46
25	04:55	06:00	07:06	08:12	08:52 (6)	08:50
	21:50	20:36	19:10	17:49	26	15:45
26	04:57	06:02	07:08	08:14	08:53 (6)	08:52
	21:48	20:34	19:07	17:47	25	15:44
27	04:59	06:04	07:10	08:16	08:54 (6)	08:54
	21:46	20:31	19:05	17:44	25	15:42
28	05:01	06:06	07:12	08:18	08:55 (6)	08:56
	21:44	20:28	19:02	17:42	23	15:41
29	05:03	06:09	07:14	08:21	08:57 (8)	08:58
	21:42	20:26	18:59	17:39	21	15:40
30	05:05	06:11	07:16	08:23	08:58 (8)	08:59
	21:40	20:23	18:56	17:37	20	15:38
31	05:07	06:13		08:25	08:59 (8)	09:00
	21:38	20:20		16:34	18	15:38
Potential sun hours	538	474	386	321	241	207
Total, worst case			325	657	387	559
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			150	186	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)

Project:

Flickering_Valka_Vestas162

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 15:10/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Liksnas - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (470)
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		17:57 (2) 18:07 (2)	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 22:19	05:11 21:33	06:17 20:14		07:20 18:50	10 14	17:54 (2) 18:08 (2)	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 21:06	04:24 22:05	04:21 22:19	05:13 21:31	06:19 20:12		07:22 18:48		17:53 (2) 18:09 (2)	07:32 16:27	08:36 15:35
4	08:59 15:43	08:15 16:47	07:05 17:52	1	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	16 18	17:51 (2) 18:09 (2)	07:34 16:25	08:38 15:34
5	08:59 15:45	08:12 16:49	07:02 17:55	5	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		17:52 (2) 18:10 (2)	07:37 16:22	08:40 15:33
6	08:58 15:46	08:10 16:52	07:00 17:57	10	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	18	17:51 (2) 18:07 (2)	07:39 16:20	08:41 15:32
7	08:57 15:48	08:08 16:54	06:57 17:59	13	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	16 14	17:50 (2) 18:04 (2)	07:41 16:18	08:43 15:32
8	08:56 15:49	08:06 16:56	06:54 18:02	15	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		17:50 (2) 18:01 (2)	07:43 16:16	08:44 15:31
9	08:56 15:51	08:03 16:59	06:52 18:04	18	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		17:52 (2) 17:59 (2)	07:46 16:14	08:46 15:30
10	08:55 15:53	08:01 17:01	06:49 18:06	17	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		17:52 (2) 17:56 (2)	07:48 16:12	08:47 15:30
11	08:54 15:55	07:59 17:03	06:46 18:08	15	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	4		07:50 16:09	08:49 15:30
12	08:53 15:56	07:56 17:06	06:43 18:11	12	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	7	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 20:23	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	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 18:20		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	08:54 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			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			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			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 22:22	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 22:21	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	08:31 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			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 19:02		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 21:41	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	18:01 (2) 18:04 (2)	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	06:12 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				131							3		128			
Sun reduction				0.40							0.46		0.28			
Oper. time red.				1.00							1.00		1.00			
Wind dir. red.				1.00							1.00		1.00			
Total reduction				0.40							0.46		0.28			
Total, real				53							1		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_Vestas162

SIA Estonian, Latvian & Lithuanian environment
Vilandes 3-6
LV-1010 Riga
0037167242411
Baiba / baiba.ozolina@environment.lv
Calculated:
15/01/2026 15:10/4.1.254

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Livas - Shadow Receptor: 1.0 x 1.0 Azimuth: 3.1° Slope: 90.0° (469)
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 15:39	08:21 16:40	15:43 (4) 16:02 (4)	07:13 17:46	17:00 (2) 17:16 (2)	06:48 19:55	05:27 21:01	04:27 22:20	04:20 21:35	05:09 20:17	06:15 18:53	07:18 16:32	08:33 15:37
2	09:00 15:40	08:19 16:42	15:44 (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	08:35 15:36
3	09:00 15:42	08:17 16:44	15:43 (4) 16:02 (4)	07:08 17:50	16:59 (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	08:36 15:35
4	08:59 15:43	08:15 16:47	15:44 (4) 16:02 (4)	07:05 17:52	16:59 (2) 17:18 (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	08:38 15:34
5	08:59 15:45	08:12 16:49	15:45 (4) 16:02 (4)	07:02 17:55	16:59 (2) 17:17 (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	08:40 15:33
6	08:58 15:46	08:10 16:52	15:46 (4) 16:01 (4)	07:00 17:57	17:00 (2) 17:17 (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	08:41 15:32
7	08:57 15:48	08:08 16:54	15:48 (4) 16:00 (4)	06:57 17:59	17:01 (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	08:43 15:32
8	08:56 15:49	08:06 16:56	15:49 (4) 15:58 (4)	06:54 18:02	17:03 (2) 17:13 (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	08:44 15:31
9	08:56 15:51	08:03 16:59	15:50 (4) 16:03 (4)	06:52 18:04	17:04 (2) 17:14 (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	08:46 15:31
10	08:55 15:53	08:01 17:01	16:00 (4) 16:03 (4)	06:49 18:06	17:15 (2) 17:25 (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	08:47 15:30
11	08:54 15:55	07:59 17:03	16:04 (4) 16:07 (4)	06:46 18:08	17:26 (2) 17:36 (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	08:49 15:30
12	08:53 15:56	07:56 17:06	16:08 (4) 16:11 (4)	06:43 18:11	17:37 (2) 17:47 (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	08:50 15:29
13	08:51 15:58	07:54 17:08	16:12 (4) 16:15 (4)	06:41 18:13	17:48 (2) 17:58 (2)	06:14 20:21	05:04 21:27	04:14 22:17	04:34 22:09	05:34 21:07	06:39 19:44	07:45 18:20	08:51 15:29
14	08:51 16:00	07:52 17:11	16:16 (4) 16:19 (4)	06:38 18:15	18:00 (2) 18:03 (2)	06:12 20:24	04:58 21:29	04:16 22:18	04:36 22:07	05:36 21:05	06:42 19:41	07:47 18:18	08:52 15:29
15	08:49 16:02	07:49 17:13	16:20 (4) 16:23 (4)	06:35 18:17	18:06 (2) 18:09 (2)	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	08:53 15:29
16	08:48 16:04	07:47 17:15	16:24 (4) 16:27 (4)	06:32 18:20	18:10 (2) 18:13 (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	08:54 15:29
17	08:47 16:06	07:44 17:18	16:28 (4) 16:31 (4)	06:29 18:22	18:14 (2) 18:17 (2)	06:04 20:30	04:51 21:35	04:15 22:20	04:40 22:03	05:40 20:57	06:48 19:32	07:53 18:10	08:55 15:29
18	08:45 16:08	07:42 17:20	16:32 (4) 16:35 (4)	06:27 18:24	18:16 (2) 18:19 (2)	06:01 20:32	04:49 21:37	04:15 22:20	04:45 22:02	05:45 20:54	06:51 19:30	07:55 18:07	08:56 15:29
19	08:44 16:10	07:39 17:22	16:36 (4) 16:39 (4)	06:24 18:26	18:20 (2) 18:23 (2)	05:58 20:35	04:45 21:39	04:15 22:20	04:45 22:02	05:47 20:52	06:53 19:27	07:58 18:09	08:57 15:29
20	08:42 16:13	07:37 17:25	16:40 (4) 16:43 (4)	06:21 18:28	18:24 (2) 18:27 (2)	05:56 20:37	04:46 21:41	04:46 22:21	05:46 21:58	05:49 20:49	06:55 19:24	08:00 18:02	08:58 15:29
21	08:41 16:15	07:34 17:27	16:44 (4) 16:47 (4)	06:18 18:31	18:28 (2) 18:31 (2)	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	08:58 15:30
22	08:39 16:17	07:32 17:29	16:46 (4) 16:49 (4)	06:15 18:33	18:30 (2) 18:33 (2)	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	08:59 15:30
23	08:38 16:19	07:29 17:32	16:50 (4) 16:53 (4)	06:13 18:35	18:34 (2) 18:37 (2)	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	08:59 15:31
24	08:36 16:21	07:26 17:34	16:54 (4) 16:57 (4)	06:10 18:37	18:38 (2) 18:41 (2)	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	09:00 15:31
25	08:34 16:24	07:24 17:36	17:05 (2) 17:06 (2)	06:07 18:39	18:42 (2) 18:45 (2)	05:43 20:48	04:37 21:51	04:16 22:22	04:55 21:49	06:00 20:36	07:05 19:10	07:11 16:49	09:00 15:32
26	08:32 16:26	15:46 (4) 17:39	17:03 (2) 17:06 (2)	06:04 18:42	18:46 (2) 18:49 (2)	05:40 20:50	04:35 21:52	04:14 22:21	04:57 21:47	06:02 20:33	07:07 19:07	08:21 16:46	09:01 15:33
27	08:31 16:28	15:44 (4) 17:41	17:09 (2) 17:10 (2)	06:01 18:44	18:50 (2) 18:53 (2)	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	09:02 15:34
28	08:29 16:30	15:44 (4) 17:43	17:11 (2) 17:13 (2)	05:59 18:46	18:54 (2) 18:57 (2)	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	09:01 15:34
29	08:27 16:33	15:44 (4) 17:45	17:14 (2) 17:15 (4)	06:56 19:48	19:00 (2) 19:03 (2)	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	09:01 15:35
30	08:25 16:35	15:44 (4) 17:46	17:16 (2) 17:17 (4)	06:53 19:50	19:04 (2) 19:07 (2)	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	09:01 15:37
31	08:23 16:37	15:44 (4) 16:01 (4)	17:18 (2) 17:19 (4)	06:50 19:53	19:08 (2) 19:11 (2)	05:28 22:01	04:28 22:01	04:20 22:01	05:07 21:37	06:12 20:20	07:25 16:34	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	58	156	134	134	134	134	134	134	134	134	134	134	
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	6	30	54	54	54	54	54	54	54	54	54	54	

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 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	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	07:11 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	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 21:22	06:27 20:00	07:31 18:37	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	05:09 21:19	04:18 22:13	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	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	08:49 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 21:06	06:38 19:46	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	08:50 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	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 21:00	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 22:02	05:45 20:54	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	04:48 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	08:31 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	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 19:02	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 21:41	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	07:16 20:23	07:23 18:56	07:23 16:36	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		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_Vestas162

Licensed user:

SIA Estonian, Latvian & Lithuanian environment
Vilandes 3-6
LV-1010 Riga
0037167242411
Baiba / baiba.ozolina@environment.lv
Calculated:
15/01/2026 15:10/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Medini - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (465)
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	15:56 (4) 07:13	17:14 (2) 06:47	05:27 21:01	04:27 22:02	04:20 21:35	05:09 20:17	06:15 20:17	07:18 18:53	07:27 16:32	15:27 (4) 08:33				
2	09:00 15:40	08:19 16:42	15:56 (4) 07:11	17:12 (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	17:51 (2) 07:30	15:42 (4) 08:35				
3	09:00 15:42	08:17 16:44	15:55 (4) 07:08	17:11 (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	17:48 (2) 07:32	15:44 (4) 08:36				
4	08:59 15:43	08:15 16:47	15:55 (4) 07:05	17:09 (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	17:47 (2) 07:34	15:44 (4) 08:38				
5	08:59 15:45	08:12 16:49	15:56 (4) 07:02	17:09 (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	17:46 (2) 07:37	15:44 (4) 08:40				
6	08:58 15:46	08:10 16:52	15:55 (4) 07:00	17:09 (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	17:45 (2) 07:39	15:44 (4) 08:41				
7	08:57 15:48	08:08 16:54	15:56 (4) 06:57	17:09 (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	17:44 (2) 07:41	15:44 (4) 08:43				
8	08:56 15:49	08:06 16:56	15:56 (4) 06:54	17:09 (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	17:44 (2) 07:43	15:44 (4) 08:44				
9	08:56 15:51	08:03 16:59	15:57 (4) 06:52	17:09 (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	17:45 (2) 07:46	15:44 (4) 08:46				
10	08:55 15:53	08:01 17:01	15:58 (4) 06:49	17:10 (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	17:45 (2) 07:48	15:44 (4) 08:47				
11	08:54 15:55	07:59 17:03	16:13 (4) 06:46	17:12 (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	17:45 (2) 07:50	15:44 (4) 08:49				
12	08:53 15:56	07:56 17:06	16:12 (4) 06:43	17:12 (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	17:46 (2) 07:53	15:44 (4) 08:50				
13	08:52 15:58	07:54 17:08	16:09 (4) 06:41	17:20 (2) 06:14	05:00 21:27	04:16 22:17	04:34 22:09	05:34 21:07	06:40 20:06	07:44 18:20	17:50 (2) 07:55	15:44 (4) 08:51				
14	08:51 16:00	07:52 17:11	16:08 06:38	17:21 06:12	04:58 21:29	04:16 22:18	04:36 22:07	05:36 21:05	06:42 20:06	07:46 18:18	17:51 (2) 07:57	15:44 (4) 08:52				
15	08:49 16:02	07:49 17:13	16:06 06:35	17:22 06:09	04:56 21:31	04:15 22:18	04:37 22:06	05:38 21:02	06:44 20:06	07:49 18:15	17:52 (2) 07:59	15:44 (4) 08:53				
16	08:48 16:04	07:47 17:15	16:05 06:32	17:23 06:06	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) 08:02	15:44 (4) 08:54				
17	08:47 16:06	07:44 17:18	16:04 06:29	17:24 06:04	04:51 21:35	04:15 22:20	04:40 22:03	05:43 20:57	06:48 20:06	07:53 18:10	17:54 (2) 08:04	15:44 (4) 08:55				
18	08:45 16:08	07:42 17:20	16:03 06:27	17:25 06:01	04:49 21:37	04:15 22:20	04:42 22:02	05:45 20:54	06:51 20:06	07:55 18:07	17:55 (2) 08:08	15:44 (4) 08:56				
19	08:44 16:10	07:39 17:22	16:02 06:24	17:26 06:08	04:48 21:39	04:15 22:20	04:44 22:00	05:47 20:52	06:53 20:06	07:58 18:04	17:56 (2) 08:09	15:44 (4) 08:57				
20	08:42 16:13	07:37 17:25	16:01 06:21	17:27 06:05	04:46 21:41	04:15 22:21	04:46 21:58	05:49 20:49	06:55 20:06	08:00 18:02	17:57 (2) 08:13	15:44 (4) 08:58				
21	08:41 16:15	07:34 17:27	16:00 06:18	17:28 06:03	04:44 21:43	04:15 22:21	04:47 21:57	05:51 20:47	06:57 20:06	08:02 18:04	17:58 (2) 08:15	15:44 (4) 08:59				
22	08:39 16:17	07:32 17:29	15:59 06:15	17:29 06:01	04:42 21:45	04:15 22:21	04:49 21:55	05:53 20:44	06:59 20:06	08:04 18:04	17:59 (2) 08:17	15:44 (4) 09:00				
23	08:38 16:19	07:29 17:32	15:58 06:13	17:30 06:00	04:40 21:47	04:15 22:21	04:51 21:53	05:55 20:41	07:01 20:06	08:07 18:04	17:59 (2) 08:19	15:44 (4) 09:01				
24	08:36 16:21	07:26 17:34	15:57 06:10	17:31 06:00	04:38 21:49	04:15 22:22	04:53 21:51	05:58 20:39	07:03 20:06	08:09 18:04	17:59 (2) 08:21	15:44 (4) 09:02				
25	08:34 16:24	07:24 17:36	15:56 06:07	17:32 06:00	04:37 21:51	04:16 22:21	04:55 21:49	06:00 20:36	07:05 20:06	08:11 18:04	17:59 (2) 08:22	15:44 (4) 09:03				
26	08:32 16:26	07:21 17:39	15:55 06:04	17:33 06:00	04:35 21:52	04:16 22:21	04:57 21:47	06:02 20:33	07:07 20:06	08:12 18:04	17:59 (2) 08:23	15:44 (4) 09:04				
27	08:31 16:28	07:19 17:41	15:54 06:01	17:34 06:00	04:37 21:54	04:17 22:21	04:59 21:45	06:04 20:31	07:10 20:06	08:13 18:04	17:59 (2) 08:24	15:44 (4) 09:05				
28	08:29 16:30	07:16 17:43	15:53 06:00	17:35 06:00	04:32 21:56	04:17 22:21	05:01 21:43	06:06 20:28	07:12 20:06	08:14 18:04	17:59 (2) 08:25	15:44 (4) 09:06				
29	08:27 16:33	07:14 17:44	15:52 06:00	17:36 06:00	04:31 21:58	04:18 22:21	05:03 21:41	06:08 20:25	07:14 20:06	08:15 18:04	17:59 (2) 08:26	15:44 (4) 09:07				
30	08:25 16:35	07:13 17:45	15:51 06:00	17:37 06:00	04:29 21:59	04:19 22:20	05:05 21:39	06:10 20:23	07:16 20:06	08:16 18:04	17:59 (2) 08:27	15:44 (4) 09:08				
31	08:23 16:37	07:11 17:47	15:50 06:00	17:38 06:00	04:28 22:01	04:20 22:21	05:07 21:37	06:12 20:20	07:17 20:06	08:17 18:04	17:59 (2) 08:28	15:44 (4) 09:09				
Potential sun hours	227	3	15:57 (4)	16:00 (4)	262	365	429	515	539	538	474	386	321	241	155	207
Total, worst case	0.11	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Sun reduction	0.11	0.19	0.19	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40
Oper. time red.	0.11	0.19	0.19	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40
Wind dir. red.	0.11	0.19	0.19	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40
Total reduction	0.11	0.19	0.19	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40
Total, real	0	33	61	61	61	61	61	61	61	61	61	61	61	61	61	61

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

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (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_Vestas162 Shadow receptor: Merkela iela 10 (94010010901001) - Shadow Receptor: 1.0 × 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)	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_Vestas162

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 15:10/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 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
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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	06:44 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
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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		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		

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Merkela iela 12 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (619)
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	07:44 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
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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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SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Merkela iela 13 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (629)
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	06:43 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
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_Vestas162

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 15:10/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Merkela iela 13A - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (640)
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
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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 22:21	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_Vestas162

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 15:10/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Merkela iela 14 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (598)
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	07:44 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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SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Merkela iela 15 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (612)
 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	05:27	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	06:36	05:18	04:22	04:23	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	05:15	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	15:30
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	17:03	18:08	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	04:16	04:33	05:32	06:38	07:42	07:53	08:50
	15:56	17:06	18:11	20:19	21:25	22:16	22:10	21:10	19:47	18:23	16:07	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	16:03	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	04:53	04:15	04:39	05:40	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	04:49	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	15:52	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	05:55	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	04:38	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
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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	15:36
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_Vestas162

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 15:10/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 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) []

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	05:27	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	06:36	05:18	04:22	04:23	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	05:15	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	15:30
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	17:03	18:08	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	04:16	04:33	05:32	06:38	07:42	07:53	08:50
	15:56	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	16:03	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	04:53	04:15	04:39	05:40	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	04:49	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	15:52	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	05:55	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	04:38	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	05:37	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	19:04	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	15:36
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_Vestas162

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 15:10/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Merkela iela 16A - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (597)
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	07:44 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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SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Merkela iela 17 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (639)
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	07:44 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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SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Merkela iela 18 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (599)
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	05:27	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	06:36	05:18	04:22	04:23	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	05:15	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	15:30
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	17:03	18:08	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	04:16	04:33	05:32	06:38	07:42	07:53	08:50
	15:56	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	16:03	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	04:53	04:15	04:39	05:40	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	04:49	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	15:52	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	05:55	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	04:38	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	05:37	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	19:04	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	15:36
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		

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Merkela iela 19 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (627)
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	05:27	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	06:36	05:18	04:22	04:23	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	05:15	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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	15:51	16:59	18:04	20:13	21:19	22:13	22:14	21:17	19:55	18:31	16:14	15:30
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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	17:03	18:08	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	04:16	04:33	05:32	06:38	07:42	07:53	08:50
	15:56	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
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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	16:03	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	04:53	04:15	04:39	05:40	06:46	07:51	08:02	08:55
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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	04:49	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	15:52	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	05:55	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	04:38	04:15	04:53	05:58	07:03	08:09	08:19	09:00
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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	05:37	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	19:04	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	15:36
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		

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Merkela iela 20 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (623)
 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	05:27	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	06:36	05:18	04:22	04:23	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	05:15	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	15:30
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	17:03	18:08	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	04:16	04:33	05:32	06:38	07:42	07:53	08:50
	15:56	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	16:03	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	04:53	04:15	04:39	05:40	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	04:49	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	15:52	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	05:55	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	04:38	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	05:37	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	19:04	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	15:36
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)	Minutes with flicker	Last time (hh:mm) with flicker	(WTG causing flicker last time)

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Merkela iela 21 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (628)
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	05:27	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	06:36	05:18	04:22	04:23	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	05:15	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	15:30
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	17:03	18:08	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	04:16	04:33	05:32	06:38	07:42	07:53	08:50
	15:56	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	16:03	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	04:53	04:15	04:39	05:40	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	04:49	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	15:52	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	05:55	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	04:38	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	05:37	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	19:04	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	15:36
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		

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Merkela iela 23 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (602)
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	05:27	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	06:36	05:18	04:22	04:23	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	05:15	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
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	15:49	16:56	18:02	20:10	21:17	22:12	22:15	21:19	19:58	18:34	16:16	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
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	17:03	18:08	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	04:16	04:33	05:32	06:38	07:42	07:53	08:50
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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
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	16:03	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	15:52	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
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	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	05:55	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	04:38	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
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	16:28	17:41	18:44	20:53	21:55	22:22	21:46	20:31	19:04	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	15:36
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		

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Mežmales - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (769)
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	06:40 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)	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_Vestas162

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 15:10/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Mež vini 1 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (468)
 Sunshine probability S (Average daily sunshine hours) []

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

No operational time reduction. It is assumed 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	17:57 (2) 18:12 (2)	07:27 16:32
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 22:19	05:11 21:33	06:17 20:14	07:20 18:50	17:56 (2) 18:13 (2)	07:30 16:29
3	08:59 15:42	08:17 16:44	07:08 17:50	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	17:54 (2) 18:13 (2)	07:32 16:27
4	08:59 15:43	08:15 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	17:54 (2) 18:12 (2)	07:34 16:25
5	08:59 15:45	08:12 16:49	07:02 17:55	17:19 (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	17:54 (2) 18:11 (2)	07:37 16:22
6	08:58 15:46	08:10 16:52	07:00 17:57	17:19 (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	17:54 (2) 18:07 (2)	07:39 16:20
7	08:57 15:48	08:08 16:54	06:57 17:59	17:18 (2) 06:31	05:13 21:14	04:20 22:11	04:26 22:15	05:21 21:22	06:27 20:01	07:31 18:37	17:54 (2) 18:04 (2)	07:41 16:18
8	08:56 15:49	08:06 16:56	06:54 18:02	17:17 (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	17:54 (2) 18:01 (2)	07:43 16:16
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10	08:55 15:53	08:01 17:01	06:49 18:06	17:16 (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	17:59 (2) 18:07 (2)	07:48 16:12
11	08:54 15:55	07:59 17:03	06:46 18:08	17:17 (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	17:54 (2) 18:04 (2)	07:50 16:09
12	08:53 15:56	07:56 17:06	06:43 18:11	17:18 (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	17:54 (2) 18:07 (2)	07:53 16:07
13	08:52 15:58	07:54 17:08	06:41 18:13	17:18 (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	17:54 (2) 18:07 (2)	07:55 16:05
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18	08:45 16:08	07:42 17:20	06:27 18:24	17:20 (2) 06:01	04:49 21:37	04:15 22:20	04:42 22:02	05:45 20:54	06:51 19:30	07:55 18:07	17:56 (2) 18:07 (2)	08:06 15:56
19	08:44 16:10	07:39 17:22	06:24 18:26	17:20 (2) 05:58	04:48 21:39	04:15 22:20	04:44 22:00	05:47 20:52	06:53 19:27	07:58 18:04	17:56 (2) 18:07 (2)	08:08 15:54
20	08:42 16:13	07:37 17:25	06:21 18:28	17:20 (2) 05:56	04:46 21:41	04:15 22:21	04:46 21:58	05:49 20:49	06:55 19:24	08:00 18:02	17:56 (2) 18:07 (2)	08:10 15:52
21	08:41 16:15	07:34 17:27	06:18 18:31	17:20 (2) 05:53	04:44 21:43	04:15 22:21	04:47 21:57	05:51 20:47	06:57 19:21	08:02 17:59	17:56 (2) 18:07 (2)	08:13 15:51
22	08:39 16:17	07:32 17:29	06:15 18:33	17:20 (2) 05:50	04:42 21:45	04:15 22:21	04:49 21:55	05:53 20:44	06:59 19:18	08:04 17:56	17:56 (2) 18:07 (2)	08:15 15:49
23	08:38 16:19	07:29 17:32	06:13 18:35	17:20 (2) 05:48	04:40 21:47	04:15 22:21	04:51 21:53	05:55 20:41	07:01 19:16	08:07 17:54	17:56 (2) 18:07 (2)	08:17 15:48
24	08:36 16:21	07:26 17:34	06:10 18:37	17:20 (2) 05:45	04:38 21:49	04:15 22:22	04:53 21:51	05:58 20:39	07:03 19:13	08:09 17:51	17:56 (2) 18:07 (2)	08:19 15:46
25	08:34 16:24	07:24 17:36	06:07 18:39	17:20 (2) 05:43	04:37 21:51	04:16 22:21	04:55 21:49	06:00 20:36	07:05 19:10	08:11 17:49	17:56 (2) 18:07 (2)	08:21 15:45
26	08:32 16:26	07:21 17:39	06:04 18:42	17:20 (2) 05:40	04:35 21:52	04:16 22:21	04:57 21:47	06:02 20:33	07:07 19:07	08:14 17:46	17:56 (2) 18:07 (2)	08:23 15:43
27	08:31 16:28	07:19 17:41	06:01 18:44	17:20 (2) 05:37	04:34 21:54	04:17 22:21	04:59 21:45	06:04 20:31	07:10 19:04	08:16 17:44	17:56 (2) 18:07 (2)	08:25 15:42
28	08:29 16:30	07:16 17:43	05:59 18:46	17:20 (2) 05:35	04:32 21:56	04:17 22:21	05:01 21:43	06:06 20:28	07:12 19:02	08:18 17:41	17:56 (2) 18:07 (2)	08:27 15:41
29	08:27 16:33	07:14 17:48	06:56 19:48	17:20 (2) 05:32	04:31 21:58	04:18 22:21	05:03 21:41	06:08 20:25	07:14 18:59	18:01 (2) 18:08 (2)	17:56 (2) 18:07 (2)	08:29 15:39
30	08:25 16:35	07:11 17:50	06:53 19:50	17:20 (2) 05:30	04:29 21:59	04:19 22:20	05:05 21:39	06:10 20:23	07:23 18:56	18:08 (2) 18:11 (2)	17:56 (2) 18:07 (2)	08:31 15:37
31	08:23 16:37	07:08 17:53	06:50 19:53	17:20 (2) 05:28	04:28 22:01	04:18 22:20	05:07 21:37	06:12 20:20	07:25 18:56	18:08 (2) 18:11 (2)	17:56 (2) 18:07 (2)	08:31 15:37
Potential sun hours	227	262	365	429	515	539	538	474	386	321	241	207
Total, worst case			137						19	119		
Sun reduction			0.40						0.46	0.28		
Oper. time red.			1.00						1.00	1.00		
Wind dir. red.			1.00						1.00	1.00		
Total reduction			0.40						0.46	0.28		
Total, real			55						9	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_Vestas162

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 15:10/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Mež vini 2 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (462)
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		06:47	05:27	04:27	04:20	05:09	06:15		07:18		17:57 (2)	07:27	08:33
	15:39	16:40	17:46		19:55	21:01	22:02	22:20	21:35	20:17		18:53	14	18:11 (2)	16:32	15:37
2	09:00	08:19	07:11		06:45	05:25	04:25	04:21	05:11	06:17		07:20		17:55 (2)	07:30	08:34
	15:40	16:42	17:48		19:57	21:03	22:04	22:19	21:33	20:14		18:50	17	18:12 (2)	16:29	15:36
3	08:59	08:17	07:08		06:42	05:23	04:24	04:21	05:13	06:19		07:22		17:54 (2)	07:32	08:36
	15:42	16:44	17:50		19:59	21:06	22:05	22:19	21:31	20:12		18:48	18	18:12 (2)	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		17:53 (2)	07:34	08:38
	15:43	16:47	17:52	1	17:22 (2)	20:01	21:08	22:07	22:18	21:28	20:09	18:45	19	18:12 (2)	16:25	15:34
5	08:59	08:12	07:02		06:36	05:18	04:22	04:24	05:17	06:23		07:27		17:54 (2)	07:37	08:40
	15:45	16:49	17:55	6	17:25 (2)	20:04	21:10	22:08	22:17	21:26	20:06	18:42	17	18:11 (2)	16:22	15:33
6	08:58	08:10	07:00		06:34	05:15	04:21	04:25	05:19	06:25		07:29		17:53 (2)	07:39	08:41
	15:46	16:52	17:57	10	17:28 (2)	20:06	21:12	22:09	22:16	21:24	20:03	18:39	14	18:07 (2)	16:20	15:32
7	08:57	08:08	06:57		06:31	05:13	04:20	04:26	05:21	06:27		07:31		17:53 (2)	07:41	08:43
	15:48	16:54	17:59	13	17:30 (2)	20:08	21:14	22:11	22:15	21:22	20:01	18:37	11	18:04 (2)	16:18	15:32
8	08:56	08:06	06:54		06:28	05:11	04:19	04:27	05:23	06:29		07:33		17:53 (2)	07:43	08:44
	15:49	16:56	18:02	15	17:32 (2)	20:10	21:16	22:12	22:15	21:19	19:58	18:34	8	18:01 (2)	16:16	15:31
9	08:56	08:03	06:52		06:25	05:09	04:18	04:28	05:26	06:32		07:35		17:55 (2)	07:46	08:46
	15:51	16:59	18:04	18	17:34 (2)	20:12	21:19	22:13	22:14	21:17	19:55	18:31	4	17:59 (2)	16:14	15:30
10	08:55	08:01	06:49		06:23	05:06	04:18	04:30	05:28	06:34		07:38			07:48	08:47
	15:53	17:01	18:06	18	17:34 (2)	20:15	21:21	22:14	22:12	21:14	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			07:50	08:49
	15:55	17:03	18:08	17	17:34 (2)	20:17	21:23	22:15	22:11	21:12	19:49	18:26			16:09	15:30
12	08:53	07:56	06:43		06:17	05:02	04:17	04:33	05:32	06:38		07:42			07:53	08:50
	15:56	17:06	18:11	16	17:33 (2)	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	13	17:31 (2)	20:21	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		07:46			07:57	08:52
	16:00	17:11	18:15	8	17:28 (2)	20:23	21:29	22:18	22:07	21:05	19:41	18:17			16:03	15:29
15	08:49	07:49	06:35		06:09	04:56	04:15	04:37	05:38	06:44		07:49			07:59	08:53
	16:02	17:13	18:17		20:26	21:31	22:18	22:06	21:02	19:38		18:15			16:02	15:29
16	08:48	07:47	06:32		06:06	04:53	04:15	04:39	05:40	06:46		07:51			08:02	08:54
	16:04	17:15	18:20		20:28	21:33	22:19	22:05	21:00	19:35		18:12			16:00	15:29
17	08:47	07:44	06:29		06:04	04:51	04:15	04:40	05:43	06:48		07:53			08:04	08:55
	16:06	17:18	18:22		20:30	21:35	22:20	22:03	20:57	19:32		18:10			15:58	15:29
18	08:45	07:42	06:27		06:01	04:49	04:15	04:42	05:45	06:51		07:55			08:06	08:56
	16:08	17:20	18:24		20:32	21:37	22:20	22:02	20:54	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			08:08	08:57
	16:10	17:22	18:26		20:35	21:39	22:20	22:00	20:52	19:27		18:04			15:54	15:29
20	08:42	07:37	06:21		05:56	04:46	04:15	04:46	05:49	06:55		08:00			08:10	08:58
	16:13	17:25	18:28		20:37	21:41	22:21	21:58	20:49	19:24		18:02			15:52	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	08:58
	16:15	17:27	18:31		20:39	21:43	22:21	21:57	20:47	19:21		17:59			15:51	15:30
22	08:39	07:32	06:15		05:50	04:42	04:15	04:49	05:53	06:59		08:04			08:15	08:59
	16:17	17:29	18:33		20:41	21:45	22:21	21:55	20:44	19:18		17:56			15:49	15:30
23	08:38	07:29	06:13		05:48	04:40	04:15	04:51	05:55	07:01		08:07			08:17	08:59
	16:19	17:32	18:35		20:43	21:47	22:21	21:53	20:41	19:16		17:54			15:48	15:31
24	08:36	07:26	06:10		05:45	04:38	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	07:05		07:11			08:21	09:00
	16:24	17:36	18:39		20:48	21:51	22:21	21:49	20:36	19:10		16:49			15:45	15:32
26	08:32	07:21	06:04		05:40	04:35	04:16	04:57	06:02	07:07		07:13			08:23	09:00
	16:26	17:39	18:42		20:50	21:52	22:21	21:47	20:33	19:07		16:46			15:43	15:33
27	08:31	07:19	06:01		05:37	04:34	04:17	04:59	06:04	07:10		07:16			08:25	09:00
	16:28	17:41	18:44		20:52	21:54	22:21	21:45	20:31	19:04		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		20:54	21:56	22:21	21:43	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			18:02 (2)		08:29	09:01
	16:33		19:48		20:57	21:58	22:21	21:41	20:25	18:59	5		18:07 (2)		15:39	15:35
30	08:25		06:53		05:30	04:29	04:19	05:05	06:10	07:16			17:59 (2)		08:31	09:01
	16:35		19:50		20:59	21:59	22:20	21:39	20:23	18:56	11		18:10 (2)		15:38	15:37
31	08:23		06:50			04:28		05:07	06:12						07:25	09:00
	16:37		19:53			22:01		21:37	20:20						16:34	15:38
Potential sun hours	227	262	365		429	515	539	538	474	386		321		241		207
Total, worst case			135								16		122			
Sun reduction			0.40								0.46		0.28			
Oper. time red.			1.00								1.00		1.00			
Wind dir. red.			1.00								1.00		1.00			
Total reduction			0.40								0.46		0.28			
Total, real			54								7		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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SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Mežares - 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
	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	04:16	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_Vestas162

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 15:10/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 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
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_Vestas162

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 15:10/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 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
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	04:55 21:31	04:15 22:19	04:37 22:06	05:38 21:02	06:44 19:38	07:49 18:15	08:00 16:02	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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SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 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
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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 18:50	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
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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 21:51	05:58 20:39	07:03 19:13	08:09 17:51	08:19 15:46	09:00 15:31
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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 20:25	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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SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Muzeja iela 1 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (720)
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 19:35	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 15:34
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_Vestas162

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 15:10/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Muzeja iela 10 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (709)
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	07:35	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	21:26	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
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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
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	15:49	16:56	18:02	20:10	21:17	22:12	22:15	21:20	19:58	18:34	16:16	15:31
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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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	16:00	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
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	04:52	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
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	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	17:51	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	16:41	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)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Vestas162

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 15:10/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Muzeja iela 3 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (713)
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 19:35	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 15:34
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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SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Muzeja iela 5 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (701)
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
	15:40	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	16:08	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	19:35	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	22:22	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	17:51	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	17:49	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	17:46	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	17:44	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	17:41	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	17:39	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	17:37	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_Vestas162

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 15:10/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Muzeja iela 6 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (733)
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	05:23 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	07:45 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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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
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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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SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Muzeja iela 7 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (722)
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
	15:40	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	16:08	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	19:35	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	22:22	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	17:51	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	16:41	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_Vestas162

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 15:10/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Muzeja iela 8 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (696)
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	07:35 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 16:08	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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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_Vestas162

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 15:10/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Muzeja iela 9 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (710)
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 19:35	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_Vestas162

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 15:10/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Maja 13 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (499)
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		06:47	05:27	04:27	04:20	05:09	06:15		07:18		18:02 (2)	07:27	08:33
	15:39	16:40	17:46		19:55	21:01	22:02	22:20	21:35	20:17		18:53	19	18:21 (2)	16:32	15:37
2	09:00	08:19	07:11		06:45	05:25	04:25	04:21	05:11	06:17		07:20		18:02 (2)	07:30	08:34
	15:40	16:42	17:48		19:57	21:03	22:04	22:19	21:33	20:14		18:50	17	18:19 (2)	16:29	15:36
3	08:59	08:17	07:08		06:42	05:23	04:24	04:21	05:13	06:19		07:22		18:01 (2)	07:32	08:36
	15:42	16:44	17:50		19:59	21:06	22:05	22:19	21:31	20:12		18:48	15	18:16 (2)	16:27	15:35
4	08:59	08:14	07:05		06:39	05:20	04:23	04:22	05:15	06:21		07:25		18:01 (2)	07:34	08:38
	15:43	16:47	17:52		20:01	21:08	22:07	22:18	21:28	20:09		18:45	12	18:13 (2)	16:25	15:34
5	08:58	08:12	07:02		06:36	05:18	04:22	04:24	05:17	06:23		07:27		18:02 (2)	07:37	08:40
	15:45	16:49	17:55		20:04	21:10	22:08	22:17	21:26	20:06		18:42	9	18:11 (2)	16:22	15:33
6	08:58	08:10	07:00		06:34	05:15	04:21	04:25	05:19	06:25		07:29		18:03 (2)	07:39	08:41
	15:46	16:52	17:57		20:06	21:12	22:09	22:16	21:24	20:03		18:39	4	18:07 (2)	16:20	15:32
7	08:57	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	3	17:30 (2)	20:08	21:14	22:11	21:22	20:01		18:37			16:18	15:32
8	08:56	08:06	06:54		06:28	05:11	04:19	04:27	05:23	06:29		07:33			07:43	08:44
	15:49	16:56	18:02	6	17:32 (2)	20:10	21:16	22:12	22:15	21:19	19:58	18:34			16:16	15:31
9	08:56	08:03	06:52		06:25	05:09	04:18	04:28	05:26	06:32		07:35			07:46	08:46
	15:51	16:59	18:04	10	17:34 (2)	20:12	21:19	22:13	22:14	21:17	19:55	18:31			16:14	15:30
10	08:55	08:01	06:49		06:23	05:06	04:18	04:30	05:28	06:34		07:38			07:48	08:47
	15:53	17:01	18:06	13	17:36 (2)	20:15	21:21	22:14	21:14	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			07:50	08:49
	15:55	17:03	18:08	16	17:39 (2)	20:17	21:23	22:15	22:11	21:12	19:49	18:26			16:09	15:30
12	08:53	07:56	06:43		06:17	05:02	04:17	04:33	05:32	06:38		07:42			07:53	08:50
	15:56	17:06	18:11	19	17:42 (2)	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	18	17:41 (2)	20:21	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		07:46			07:57	08:52
	16:00	17:11	18:15	17	17:40 (2)	20:23	21:29	22:18	22:07	21:05	19:41	18:17			16:03	15:29
15	08:49	07:49	06:35		06:09	04:56	04:15	04:37	05:38	06:44		07:49			07:59	08:53
	16:02	17:13	18:17	14	17:38 (2)	20:26	21:31	22:18	22:06	21:02	19:38	18:15			16:02	15:29
16	08:48	07:47	06:32		06:06	04:53	04:15	04:39	05:40	06:46		07:51			08:02	08:54
	16:04	17:15	18:20	11	17:36 (2)	20:28	21:33	22:19	22:05	21:00	19:35	18:12			16:00	15:29
17	08:47	07:44	06:29		06:04	04:51	04:15	04:40	05:43	06:48		07:53			08:04	08:55
	16:06	17:18	18:22	6	17:34 (2)	20:30	21:35	22:20	22:03	20:57	19:32	18:10			15:58	15:29
18	08:45	07:42	06:27		06:01	04:49	04:15	04:42	05:45	06:51		07:55			08:06	08:56
	16:08	17:20	18:24		20:32	21:37	22:20	22:02	20:54	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			08:08	08:57
	16:10	17:22	18:26		20:35	21:39	22:20	22:00	20:52	19:27		18:04			15:54	15:29
20	08:42	07:37	06:21		05:56	04:46	04:15	04:46	05:49	06:55		08:00			08:10	08:58
	16:13	17:25	18:28		20:37	21:41	22:21	21:58	20:49	19:24		18:02			15:52	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	08:58
	16:15	17:27	18:31		20:39	21:43	22:21	21:57	20:47	19:21		17:59			15:51	15:30
22	08:39	07:32	06:15		05:50	04:42	04:15	04:49	05:53	06:59		08:04			08:15	08:59
	16:17	17:29	18:33		20:41	21:45	22:21	21:55	20:44	19:18		17:56			15:49	15:30
23	08:38	07:29	06:13		05:48	04:40	04:15	04:51	05:55	07:01		08:07			08:17	08:59
	16:19	17:32	18:35		20:43	21:47	22:21	21:53	20:41	19:16		17:54			15:48	15:31
24	08:36	07:26	06:10		05:45	04:38	04:15	04:53	05:58	07:03		08:09			08:19	09:00
	16:21	17:34	18:37		20:46	21:49	22:21	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	07:05		07:11			08:21	09:00
	16:24	17:36	18:39		20:48	21:51	22:21	21:49	20:36	19:10		16:49			15:45	15:32
26	08:32	07:21	06:04		05:40	04:35	04:16	04:57	06:02	07:07		07:13			08:23	09:00
	16:26	17:39	18:42		20:50	21:52	22:21	21:47	20:33	19:07		16:46			15:43	15:33
27	08:31	07:19	06:01		05:37	04:34	04:17	04:59	06:04	07:10		07:16			08:25	09:00
	16:28	17:41	18:44		20:52	21:54	22:21	21:45	20:31	19:04	9	18:17 (2)			15:42	15:34
28	08:29	07:16	05:59		05:35	04:32	04:17	05:01	06:06	07:12		18:05 (2)			08:27	09:01
	16:30	17:43	18:46		20:54	21:56	22:21	21:43	20:28	19:02	14	18:19 (2)			15:41	15:34
29	08:27		06:56		05:32	04:31	04:18	05:03	06:08	07:14		18:03 (2)			08:29	09:01
	16:33		19:48		20:57	21:58	22:21	21:41	20:25	18:59	16	18:19 (2)			15:39	15:35
30	08:25		06:53		05:30	04:29	04:19	05:05	06:10	07:16		18:03 (2)			08:31	09:01
	16:35		19:50		20:59	21:59	22:20	21:39	20:23	18:56	18	18:21 (2)			15:38	15:37
31	08:23		06:50			04:28		05:07	06:12			07:25				09:00
	16:37		19:53			22:01		21:37	20:20			16:34				15:38
Potential sun hours	227	262	365		429	515	539	538	474	386		321		241		207
Total, worst case				133							57		76			
Sun reduction				0.40							0.46		0.28			
Oper. time red.				1.00							1.00		1.00			
Wind dir. red.				1.00							1.00		1.00			
Total reduction				0.40							0.46		0.28			
Total, real				54							26		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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SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Maja 14 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (491)
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	07:11 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	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 16:52	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 21:22	06:27 20:00	07:31 18:37	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 22:15	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	05:09 21:19	04:18 22:13	04:28 22:13	05:26 21:17	06:32 19:55	07:35 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 22:12	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	08:49 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 21:10	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 20:23	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	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 16:02	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	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 22:02	05:45 20:54	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	04:48 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	04:39 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	08:31 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	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 19:02	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 21:41	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 16:37	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	06:12 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_Vestas162

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 15:10/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Maja 16 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (451)
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	18:14 (2) 18:22 (2)	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 21:33	06:17 20:14	07:20 18:50	18:15 (2) 18:19 (2)	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 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 21:28	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 21:27	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 22:09	04:25 21:26	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 21:22	05:21 21:22	06:27 20:01	07:31 18:37		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 21:25	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	05:09 21:19	04:18 22:13	04:28 21:17	05:26 19:55	06:32 19:55	07:35 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 21:14	05:28 19:52	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	16:28 (4) 18:08	06:46 17:39 (2)	05:04 21:23	04:17 22:15	04:31 21:12	05:30 19:49	06:36 19:49	07:40 18:26		07:50 16:09	08:49 15:30
12	08:53 15:56	07:56 17:06	16:27 (4) 18:11	06:43 17:42 (2)	05:02 21:25	04:17 22:16	04:33 21:10	05:32 19:47	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	16:26 (4) 18:13	06:41 17:44 (2)	05:00 21:27	04:16 22:17	04:34 21:07	05:34 19:44	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	16:25 (4) 18:15	06:38 17:46 (2)	04:58 21:29	04:16 22:18	04:36 21:05	05:36 19:41	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	16:25 (4) 18:17	06:35 17:48 (2)	04:56 21:31	04:15 22:18	04:37 21:02	05:38 19:38	06:44 19:38	07:49 18:15		07:59 16:02	08:53 15:29
16	08:48 16:04	07:47 17:15	16:24 (4) 18:20	06:32 17:50 (2)	04:53 21:33	04:15 22:19	04:39 21:00	05:40 19:35	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	16:23 (4) 18:22	06:29 17:51 (2)	04:51 21:35	04:15 22:20	04:40 21:07	05:43 19:32	06:48 19:32	07:53 18:10		08:04 15:58	08:55 15:29
18	08:45 16:08	07:42 17:20	16:22 (4) 18:24	06:27 17:50 (2)	04:49 21:37	04:15 22:20	04:42 21:04	05:45 19:30	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	16:21 (4) 18:26	06:24 17:48 (2)	04:48 21:39	04:15 22:20	04:44 21:02	05:47 19:27	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	16:20 (4) 18:28	06:21 17:46 (2)	04:46 21:41	04:15 22:21	04:46 21:04	05:49 19:24	06:55 19:24	08:00 18:02	17:00 (4) 17:09 (4)	08:10 15:52	08:58 15:29
21	08:41 16:15	07:34 17:27	16:19 (4) 18:31	06:18 17:42 (2)	04:44 21:43	04:15 22:21	04:47 21:07	05:51 19:21	06:57 19:21	08:02 17:59	16:58 (4) 17:11 (4)	08:13 15:51	08:58 15:30
22	08:39 16:17	07:32 17:29	16:18 (4) 18:33	06:15 18:33	04:42 21:45	04:15 22:21	04:49 21:04	05:53 19:18	06:59 19:18	08:04 17:56	16:56 (4) 17:12 (4)	08:15 15:49	08:59 15:30
23	08:38 16:19	07:29 17:32	16:17 (4) 18:35	06:13 18:35	04:40 21:47	04:15 22:21	04:51 21:04	05:55 19:16	07:01 19:16	08:07 18:30 (2)	16 17:12 (4)	08:17 15:48	08:59 15:31
24	08:36 16:21	07:26 17:34	16:16 (4) 18:37	06:10 18:37	04:39 21:49	04:15 22:21	04:53 21:04	05:58 19:13	07:03 19:13	08:09 18:32 (2)	17 17:13 (4)	08:19 15:46	09:00 15:31
25	08:34 16:24	07:24 17:36	16:15 (4) 18:39	06:07 18:39	04:37 21:51	04:16 22:21	04:55 21:04	06:00 19:10	07:05 19:10	07:11 18:32 (2)	18 17:13 (4)	08:21 15:45	09:00 15:32
26	08:32 16:26	07:21 17:39	16:14 (4) 18:42	06:04 18:42	04:35 21:52	04:16 22:21	04:57 21:07	06:02 19:07	07:07 19:07	07:13 18:32 (2)	19 16:14 (4)	08:23 15:44	09:00 15:33
27	08:31 16:28	07:19 17:41	16:13 (4) 18:44	06:01 18:44	04:37 21:52	04:17 22:21	04:59 21:04	06:04 19:04	07:10 19:04	07:16 18:32 (2)	17 16:10 (4)	08:25 15:42	09:00 15:34
28	08:29 16:30	07:16 17:43	16:12 (4) 18:46	05:59 18:46	04:32 21:56	04:17 22:21	05:01 21:04	06:06 19:02	07:12 19:02	07:18 18:30 (2)	18 16:06 (4)	08:27 15:41	09:01 15:34
29	08:27 16:33		16:11 (4) 19:48	05:56 19:48	04:31 21:58	04:18 22:21	05:03 21:04	06:08 19:04	07:14 18:59	07:20 18:27 (2)	16 16:04 (4)	08:29 15:39	09:01 15:35
30	08:25 16:35		16:10 (4) 19:50	05:53 19:50	04:29 21:59	04:19 22:20	05:05 21:04	06:10 19:04	07:16 18:56	07:23 18:25 (2)	8 16:01 (4)	08:31 15:38	09:01 15:37
31	08:23 16:37		16:09 (4) 19:53	05:50 19:53	04:28 22:01	04:18 22:21	05:07 21:04	06:12 19:04	07:25 18:56	07:25 18:25 (2)	5 15:58 (4)	08:32 15:38	09:00 15:38
Potential sun hours	227	262	365	429	515	539	538	474	386	321	1	241	207
Total, worst case													
Sun reduction		151	128						116	161			
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		29	52						54	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)

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 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	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	07:11 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	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 16:52	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 18:37	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	05:09 21:19	04:18 22:13	04:28 22:13	05:26 21:17	06:32 19:55	07:35 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 22:12	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	08:49 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	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	08:50 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	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 16:02	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 21:00	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	06:51 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	04:48 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	04:39 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	08:31 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	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 19:02	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 21:41	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												
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		

Flickering_Valka_Vestas162

SIA Estonian, Latvian & Lithuanian environment
Vilandes 3-6
LV-1010 Riga
0037167242411
Baiba / baiba.ozolina@environment.lv
Calculated:
15/01/2026 15:10/4.1.254

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Maja 20 (94880100118001) - Shadow Receptor: 1.0 x 1.0 Azimuth: 3.1° Slope: 90.0° (489)
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	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		
2	09:00	08:19		07:11		06:45	05:25	04:25	04:21	05:11	06:17		
	15:40	16:42		17:48		19:57	21:03	22:04	22:19	21:33	20:14		
3	08:59	08:17		07:08		06:42	05:23	04:24	04:21	05:13	06:19		
	15:42	16:44		17:50		19:59	21:06	22:05	22:19	21:31	20:12		
4	08:59	08:14		07:05		06:39	05:20	04:23	04:22	05:15	06:21		
	15:43	16:47		17:52		20:01	21:08	22:07	22:18	21:28	20:09		
5	08:58	08:12		07:02		06:36	05:18	04:22	04:24	05:17	06:23		
	15:45	16:49		17:55		20:04	21:10	22:08	22:17	21:26	20:06		
6	08:58	08:10		07:00		06:34	05:10	04:21	04:25	05:19	06:25		
	15:46	16:52		17:57		20:06	21:12	22:09	22:16	21:24	20:03		
7	08:57	08:08		06:57		06:31	05:13	04:20	04:26	05:21	06:27		
	15:48	16:54		17:59		20:08	21:14	22:11	22:15	21:22	20:01		
8	08:56	08:06		16:19 (4)		06:54	06:28	05:11	04:19	04:27	05:23	06:29	
	15:49	16:56	3	16:22 (4)		18:02	20:10	21:16	22:12	22:15	21:19	19:58	
9	08:56	08:03		16:19 (4)		06:52		05:09	04:18	04:28	05:26	06:32	
	15:51	16:59	6	16:25 (4)	18:04		4	17:34 (2)	20:12	21:19	22:13	22:14	21:17
10	08:55	08:01		16:17 (4)	06:49			17:28 (2)	06:23	05:06	04:18	04:30	05:28
	15:53	17:01	10	16:27 (4)	18:06		8	17:36 (2)	20:15	21:21	22:14	22:12	21:14
11	08:54	07:59		16:17 (4)	06:46			17:27 (2)	06:20	05:04	04:17	04:31	05:30
	15:55	17:03	13	16:30 (4)	18:08		12	17:39 (2)	20:17	21:23	22:15	22:11	21:12
12	08:53	07:56		16:16 (4)	06:43			17:27 (2)	06:17	05:02	04:17	04:33	05:32
	15:56	17:06	16	16:32 (4)	18:11		15	17:42 (2)	20:19	21:25	22:16	22:10	21:10
13	08:51	07:54		16:17 (4)	06:41			17:27 (2)	06:11	05:00	04:16	04:34	05:40
	15:58	17:08	18	16:35 (4)	18:13			17:44 (2)	20:21	21:27	22:17	22:09	21:07
14	08:51	07:52		16:17 (4)	06:38			17:26 (2)	06:12	04:58	04:16	04:36	05:36
	16:00	17:11	18	16:35 (4)	18:15		19	17:45 (2)	20:23	21:29	22:18	22:07	21:05
15	08:49	07:49		16:16 (4)	06:35			17:26 (2)	06:09	04:56	04:15	04:37	05:38
	16:02	17:13	19	16:35 (4)	18:17		18	17:44 (2)	20:26	21:31	22:18	22:06	21:02
16	08:48	07:47		16:17 (4)	06:32			17:26 (2)	06:06	04:53	04:15	04:39	05:40
	16:04	17:15	18	16:35 (4)	18:20		17	17:43 (2)	20:28	21:33	22:19	22:05	21:00
17	08:47	07:44		16:18 (4)	06:29			17:28 (2)	06:04	04:51	04:15	04:4	

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)

Flickering_Valka_Vestas162

SIA Estonian, Latvian & Lithuanian environment
Vilandes 3-6
LV-1010 Riga
0037167242411
Baiba / baiba.ozolina@environment.lv
Calculated:
15/01/2026 15:10/4.1.254

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Maja 20 (94880100123001) - Shadow Receptor: 1.0 x 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

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

Flickering_Valka_Vestas162

SIA Estonian, Latvian & Lithuanian environment
Vilandes 3-6
LV-1010 Riga
0037167242411
Baiba / baiba.ozolina@environment.lv
Calculated:
15/01/2026 15:10/4.1.254

Calculation: Flickering_Valka_Vestas162 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

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
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	18:05 (2)	07:27
2	09:00	08:19		07:11		06:45	05:25	04:25	04:21	05:11	06:17		
	15:40	16:42		17:48		19:57	21:03	22:04	22:19	21:33	20:14	18:22 (2)	16:32
3	08:59	08:17		07:08		06:42	05:23	04:24	04:21	05:13	06:19		
	15:42	16:44		17:50		19:59	21:06	22:05	22:19	21:31	20:12	18:05 (2)	07:30
4	08:59	08:15		07:05		06:39	05:20	04:23	04:22	05:15	06:21		
	15:43	16:47		17:52		20:01	21:08	22:07	22:18	21:28	20:09	18:22 (2)	16:29
5	08:58	08:12		07:02		06:36	05:18	04:22	04:24	05:17	06:23		
	15:45	16:49		17:55		20:04	21:10	22:08	22:17	21:26	20:06	18:05 (2)	07:32
6	08:58	08:10		07:00		06:34	05:15	04:21	04:25	05:19	06:25		
	15:46	16:52		17:57		20:06	21:12	22:09	22:16	21:24	20:03	18:11 (2)	16:22
7	08:57	08:08	16:18 (4)	06:57		06:31	05:13	04:20	04:26	05:21	06:27		
	15:48	16:54	1	16:19 (4)	17:59	20:08	21:14	22:11	22:15	21:22	20:01	18:07 (2)	16:22
8	08:56	08:06	16:16 (4)	06:54	17:31 (2)	06:28	05:11	04:19	04:27	05:23	06:29		
	15:49	16:56	6	16:22 (4)	18:02	20:10	21:16	22:12	22:15	21:19	19:58	18:22 (2)	16:22
9	08:56	08:03	16:16 (4)	06:52	17:29 (2)	06:25	05:09	04:18	04:28	05:26	06:32		
	15:51	16:59	9	16:25 (4)	18:04	20:12	21:19	22:13	22:14	21:17	19:55	18:34	16:16
10	08:55	08:01	16:15 (4)	06:49	17:27 (2)	06:23	05:06	04:18	04:30	05:28	06:34		
	15:53	17:01	12	16:27 (4)	18:06	20:15	21:21	22:14	22:12	21:14	19:52	18:31	16:14
11	08:54	07:59	16:15 (4)	06:46	17:27 (2)	06:20	05:04	04:17	04:31	05:30	06:36		
	15:55	17:03	15	16:30 (4)	18:08	20:17	21:23	22:15	22:11	21:12	19:49	18:28	16:12
12	08:53	07:56	16:14 (4)	06:43	17:26 (2)	06:17	05:02	04:17	04:33	05:32	06:38		
	15:56	17:06	18	16:32 (4)	18:11	20:19	21:25	22:16	22:10	21:10	19:47	18:26	16:09
13	08:51	07:54	16:15 (4)	06:41	17:26 (2)	06:15	05:00	04:16	04:34	05:40	06:44		
	15:58	17:08	19	16:34 (4)	18:13	20:21	21:27	22:17	22:09	21:07	19:44	18:20	16:05
14	08:51	07:52	16:14 (4)	06:38	17:25 (2)	06:12	04:58	04:16	04:36	05:36	06:42		
	16:00	17:11	19	16:33 (4)	18:15	20:23	21:29	22:18	22:07	21:05	19:41	18:17	16:03
15	08:49	07:49	16:14 (4)	06:35	17:25 (2)	06:09	04:56	04:15	04:37	05:38	06:44		
	16:02	17:13	19	16:33 (4)	18:17	20:26	21:31	22:18	22:06	21:02	19:38	18:15	16:02
16	08:48	07:47	16:15 (4)	06:32	17:25 (2)	06:06	04:53	04:15	04:39	05:40	06:46		

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)

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 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	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	07:11 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	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
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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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SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 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	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
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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)	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		

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 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	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
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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	08:31 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	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 19:02	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 21:41	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	09:01 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		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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SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 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.

	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	07:11 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	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 16:52	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 21:22	06:27 20:00	07:31 18:37	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	05:09 21:19	04:18 22:13	04:28 22:13	05:26 21:17	06:32 19:55	07:35 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 22:12	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	08:49 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 21:10	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	08:50 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	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 16:02	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 21:00	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	06:51 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	04:48 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	04:39 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
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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	08:31 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	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 19:02	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 21:41	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	09:01 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		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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SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 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	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	07:11 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	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 18:37	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	05:09 21:19	04:18 22:13	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	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	08:49 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 21:10	06:38 19:46	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	08:50 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	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 21:00	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	06:51 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	04:48 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	08:31 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	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 19:02	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 21:41	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	07:16 20:23	07:23 18:56	07:31 16:36	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		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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SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Maja 8 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (587)
 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	07:11 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	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
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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 22:12	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	08:49 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 21:10	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 20:23	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	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 16:02	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 21:00	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 22:02	05:45 20:54	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	04:48 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	04:39 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	08:31 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	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 19:02	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 21:41	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	09:01 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		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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SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 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	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	07:11 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	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 21:22	06:27 20:00	07:31 18:37	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	05:09 21:19	04:18 22:13	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	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	08:49 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 21:10	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 20:23	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	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 21:00	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 22:02	05:45 20:54	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	04:48 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	08:31 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	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 19:02	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 21:41	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	09:01 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		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_Vestas162

Licensed user:

SIA Estonian, Latvian & Lithuanian environment
Vilandes 3-6
LV-1010 Riga
0037167242411
Baiba / baiba.ozolina@environment.lv
Calculated:
15/01/2026 15:10/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 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

No operational time reduction. It is assumed 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	15:42 (4)	07:13	16:58 (2)	06:48	05:27	04:27	04:20	05:09	06:15	07:18	08:33
2	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	16:32
	09:00	08:19	15:43 (4)	07:11	16:58 (2)	06:45	05:25	04:25	04:21	05:11	06:17	07:20	08:30
3	15:40	16:42	19 16:02 (4)	17:48	20 17:18 (2)	19:57	21:03	22:04	22:19	21:33	20:14	18:50	16:29
	09:00	08:17	15:43 (4)	07:08	16:57 (2)	06:42	05:23	04:24	04:21	05:13	06:19	07:22	08:32
4	15:42	16:44	18 16:01 (4)	17:50	20 17:17 (2)	19:59	21:06	22:05	22:19	21:31	20:12	18:48	16:27
	08:59	08:15	15:44 (4)	07:05	16:57 (2)	06:39	05:20	04:23	04:22	05:15	06:21	07:25	08:34
5	15:43	16:47	17 16:01 (4)	17:52	19 17:16 (2)	20:01	21:08	22:07	22:18	21:28	20:09	18:45	16:25
	08:59	08:12	15:45 (4)	07:02	16:58 (2)	06:36	05:18	04:22	04:24	05:17	06:23	07:27	08:37
6	15:45	16:49	16 16:01 (4)	17:55	17 17:15 (2)	20:04	21:10	22:08	22:17	21:26	20:06	18:42	16:22
	08:58	08:10	15:46 (4)	07:00	16:59 (2)	06:34	05:15	04:21	04:25	05:19	06:25	07:29	08:39
7	15:46	16:52	14 16:00 (4)	17:57	16 17:15 (2)	20:06	21:12	22:09	22:16	21:24	20:03	18:39	16:20
	08:57	08:08	15:48 (4)	06:57	17:01 (2)	20:31	05:13	04:20	04:26	05:21	06:27	07:31	08:41
8	15:48	16:54	11 15:59 (4)	17:59	11 17:12 (2)	20:08	21:14	22:11	22:16	21:22	20:01	18:37	16:18
	08:56	08:06	15:50 (4)	06:54	17:04 (2)	20:28	05:11	04:19	04:27	05:23	06:29	07:33	08:43
9	15:49	16:56	6 15:56 (4)	18:02	5 17:09 (2)	20:10	21:16	22:12	22:15	21:19	19:58	18:34	16:16
	08:56	08:03	16:52	06:52	06:25	05:09	04:18	04:28	05:26	06:32	07:36	17:33 (2)	07:46
10	15:51	16:59	18:04	20:12	21:19	22:13	22:14	21:17	19:55	18:31	16:14	15:33 (4)	15:30
	08:55	08:01	06:49	06:23	05:06	04:18	04:30	05:28	06:34	07:38	17:32 (2)	07:48	15:13 (4)
11	15:53	17:01	18:06	20:15	21:21	22:14	22:12	21:14	19:52	18:28	19 17:51 (2)	16:12	15:32 (4)
	08:54	07:59	06:46	06:20	05:04	04:17	04:31	05:30	06:36	07:40	17:31 (2)	07:50	15:14 (4)
12	15:55	17:03	18:08	20:17	21:23	22:15	22:11	21:12	19:49	18:26	20 17:51 (2)	16:09	15:32 (4)
	08:53	07:56	06:43	06:17	05:02	04:17	04:33	05:32	06:38	07:42	17:31 (2)	07:53	15:14 (4)
13	15:56	17:06	18:11	20:19	21:25	22:16	22:10	21:10	19:47	18:23	19 17:50 (2)	16:07	15:29 (4)
	08:52	07:54	06:41	06:14	05:00	04:16	04:34	05:34	06:40	07:44	17:31 (2)	16:05	15:29 (4)
14	15:58	17:08	18:13	20:21	21:27	22:17	22:09	21:07	19:44	18:20	17 17:48 (2)	16:05	15:27 (4)
	08:51	07:52	06:38	06:12	04:58	04:16	04:36	05:36	06:42	07:47	17:31 (2)	07:57	15:15 (4)
15	16:00	17:11	18:15	20:24	21:29	22:18	22:07	21:05	19:41	18:18	14 17:45 (2)	16:03	15:25 (4)
	08:49	07:49	06:35	06:09	04:56	04:15	04:37	05:38	06:44	07:49	17:31 (2)	07:59	15:16 (4)
16	16:02	17:13	18:17	20:26	21:31	22:18	22:06	21:02	19:38	18:15	10 17:41 (2)	16:02	15:22 (4)
	08:48	07:47	06:32	06:06	04:53	04:15	04:39	05:40	06:46	07:51	17:33 (2)	08:02	15:17 (4)
17	16:04	17:15	18:20	20:28	21:33	22:19	22:05	21:00	19:35	18:12	6 17:39 (2)	16:00	15:21 (4)
	08:47	07:44	06:29	06:04	04:51	04:15	04:40	05:43	06:48	07:53	17:34 (2)	08:04	15:18
18	16:06	17:18	18:22	20:30	21:35	22:20	22:03	20:57	19:32	18:10	2 17:36 (2)	15:58	15:25
	08:45	07:42	06:27	06:01	04:49	04:15	04:42	05:45	06:51	07:55	18:06	15:56	15:26
19	16:08	17:20	18:24	20:32	21:37	22:20	22:02	20:54	19:30	18:07	17:56	15:56	15:29
	08:44	07:39	06:24	05:58	04:48	04:15	04:44	05:47	06:53	07:58	18:08	15:54	15:29
20	16:10	17:22	18:26	20:35	21:39	22:20	22:00	20:52	19:27	18:04	17:54	15:54	15:29
	08:42	07:37	06:21	05:56	04:46	04:15	04:46	05:49	06:55	08:00	18:10	15:52	15:29
21	16:13	17:25	18:28	20:37	21:41	22:21	21:58	20:49	19:24	18:02	17:52	15:52	15:29
	08:41	07:34	06:18	05:53	04:44	04:15	04:47	05:51	06:57	08:02	18:13	15:51	15:29
22	16:15	17:27	18:31	20:39	21:43	22:21	21:57	20:47	19:21	17:59	17:56	15:51	15:30
	08:39	07:32	06:15	05:50	04:42	04:15	04:49	05:53	06:59	08:04	18:15	15:50	15:30
23	16:17	17:29	18:33	20:41	21:45	22:21	21:55	20:44	19:18	17:56	17:56	15:49	15:30
	08:38	07:29	06:13	05:48	04:40	04:15	04:51	05:55	07:01	08:07	18:17	15:48	15:30
24	16:19	17:32	18:35	20:43	21:47	22:21	21:53	20:41	19:16	17:54	17:54	15:48	15:31
	08:36	07:26	06:10	05:45	04:38	04:15	04:53	05:58	07:03	08:09	18:19	15:47	15:31
25	16:21	17:34	18:37	20:46	21:49	22:22	21:51	20:39	19:13	17:51	17:51	15:46	15:31
	08:34	07:24	17:02 (2)	06:07	05:43	04:37	04:16	04:55	06:00	07:05	07:11	15:45	15:30
26	16:24	17:36	4 17:06 (2)	18:39	20:48	21:51	22:22	21:49	20:36	19:10	17:49	15:45	15:32
	08:32	15:44 (4)	07:21	17:00 (2)	06:04	05:40	04:35	04:16	04:57	06:02	07:07	15:44	15:33
27	16:26	4 15:48 (4)	8 17:08 (2)	18:42	20:50	21:52	22:21	21:47	20:33	19:07	16:46	15:43	15:33
	08:31	15:43 (4)	07:19	16:59 (2)	06:01	05:37	04:34	04:17	04:59	06:04	07:10	16:44	15:34
28	16:28	7 15:50 (4)	17:41	11 17:10 (2)	18:44	20:52	21:54	22:21	21:45	20:31	19:04	16:44	15:34
	08:29	15:43 (4)	07:16	16:58 (2)	05:59	05:35	04:32	04:17	05:01	06:06	07:12	16:41	15:34
29	16:30	9 15:52 (4)	17:43	15 17:13 (2)	18:46	20:54	21:56	22:21	21:43	20:28	19:02	16:41	15:34
	08:27	15:43 (4)		06:56	05:32	04:31	04:18	05:03	06:08	07:14	07:20	16:41	15:34
30	16:33	12 15:55 (4)		19:48	20:57	21:58	22:21	21:41	20:25	18:59	16:39	15:39	15:35
	08:25	15:43 (4)		06:53	05:30	04:29	04:19	05:05	06:10	07:16	07:23	16:41	15:35
31	16:35	15 15:58 (4)		19:50	20:59	21:59	22:20	21:39	20:23	18:56	16:37	15:38	15:37
	08:23	15:43 (4)		06:50	05:28	04:28	04:19	05:07	06:12	07:18	07:25	16:41	15:38
Potential sun hours	227	262	365	429	515	539	538	474	386	321	241	190	207
Total, worst case	65	159	126	429	515	539	538	474	386	321	241	190	207
Sun reduction	0.11	0.19	0.40	0.49	0.51	0.53	0.53	0.47	0.38	0.32	0.24	0.19	0.20
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	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	1.00
Total reduction	0.11	0.19	0.40	0.49	0.51	0.53	0.53	0.47	0.38	0.32	0.24	0.19	0.20
Total, real	7	31	51	429	515	539	538	474	386	321	241	190	207

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

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (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_Vestas162 Shadow receptor: Marstalu iela 6 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (681)
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	07:18	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	16:30	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
	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	06:28	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
	15:49	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	18:29	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	21:30	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	18:18	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	22:04	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
	16:11	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	04:47	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	20:42	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	17:52	15:46	15:31
25	08:35	07:24	06:07	05:43	04:37	04:16	04:55	06:00	07:06	07:12	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	06:11	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	15:38	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		

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 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)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Vestas162

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 15:10/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 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	16:00 (4)	07:13	06:47	05:27	04:27	04:20	05:09	06:15	07:18	08:33
2	15:39	16:40	3 16:03 (4)	17:46	19:55	21:01	22:02	22:20	21:35	20:17	18:53	15:37
3	09:00	08:19	15:59 (4)	07:11	06:45	05:25	04:25	04:21	05:11	06:17	07:20	08:34
4	15:40	16:42	7 16:06 (4)	17:48	19:57	21:03	22:04	22:19	21:33	20:14	18:50	15:36
5	09:00	08:17	15:58 (4)	07:08	06:42	05:23	04:24	04:21	05:13	06:19	07:22	08:36
6	15:42	16:44	10 16:08 (4)	17:50	19:59	21:06	22:05	22:19	21:31	20:12	18:48	15:35
7	08:59	08:15	15:58 (4)	07:05	06:39	05:20	04:23	04:22	05:15	06:21	07:25	08:38
8	15:43	16:47	13 16:11 (4)	17:52	19:57	21:08	22:07	22:18	21:28	20:09	18:45	15:34
9	08:59	08:12	15:58 (4)	07:02	06:36	05:18	04:22	04:24	05:17	06:23	07:27	08:40
10	15:45	16:49	16 16:14 (4)	17:55	19:55	21:10	22:08	22:17	21:26	20:06	18:42	15:33
11	08:58	08:10	15:58 (4)	07:00	06:34	05:15	04:21	04:25	05:19	06:25	07:29	08:41
12	15:46	16:52	18 16:16 (4)	17:57	19:57	21:12	22:09	22:16	21:24	20:03	18:39	15:32
13	08:57	08:08	15:58 (4)	06:57	06:31	05:13	04:20	04:26	05:21	06:27	07:31	08:43
14	15:48	16:54	19 16:17 (4)	17:59	19:59	21:14	22:11	22:16	21:22	20:01	18:37	15:32
15	08:56	08:06	15:58 (4)	06:54	06:28	05:11	04:19	04:27	05:23	06:29	07:33	08:44
16	15:49	16:56	19 16:17 (4)	18:02	19:59	21:16	22:12	22:15	21:19	19:58	18:34	15:31
17	08:56	08:03	15:59 (4)	06:52	06:25	05:09	04:18	04:28	05:26	06:32	07:36	08:46
18	15:51	16:59	18 16:17 (4)	18:04	19:59	21:19	22:13	22:14	21:17	19:55	18:31	15:31
19	08:55	08:01	15:59 (4)	06:49	06:23	05:06	04:18	04:30	05:28	06:34	07:38	08:47
20	15:53	17:01	17 16:16 (4)	18:06	19:59	21:21	22:14	22:12	21:14	19:52	18:28	15:30
21	08:54	07:59	16:01 (4)	06:46	06:20	05:04	04:17	04:31	05:30	06:36	07:40	08:49
22	15:55	17:03	14 16:15 (4)	18:08	19:59	21:23	22:15	22:11	21:12	19:49	18:26	15:30
23	08:53	07:56	16:02 (4)	06:43	06:17	05:02	04:17	04:33	05:32	06:38	07:42	08:50
24	15:56	17:06	12 16:14 (4)	18:11	19:59	21:25	22:16	22:10	21:10	19:47	18:23	15:29
25	08:52	07:54	16:05 (4)	06:41	06:14	05:00	04:16	04:34	05:34	06:40	07:44	08:51
26	15:58	17:08	7 16:12 (4)	18:13	20:21	21:27	22:17	22:09	21:07	19:44	18:20	15:29
27	08:51	07:52	06:38	06:12	04:58	04:16	04:36	05:36	06:42	07:46	08:50	15:29
28	16:00	17:11	18:15	20:23	21:29	22:18	22:07	21:05	19:41	18:18	16:03	15:29
29	08:49	07:49	06:35	06:09	04:56	04:15	04:37	05:38	06:44	07:49	08:53	15:29
30	16:02	17:13	18:17	20:26	21:31	22:18	22:06	21:02	19:38	18:15	16:02	15:29
31	08:48	07:47	06:32	06:06	04:53	04:15	04:39	05:40	06:46	07:51	08:55	15:29
32	16:04	17:15	18:20	20:28	21:33	22:19	22:05	21:00	19:35	18:12	16:00	15:29
33	08:47	07:44	06:29	06:04	04:51	04:15	04:40	05:43	06:48	07:53	08:57	15:29
34	16:06	17:18	18:22	20:30	21:35	22:20	22:03	20:57	19:32	18:10	16:00	15:29
35	08:45	07:42	06:27	06:01	04:49	04:15	04:42	05:45	06:51	07:55	08:59	15:29
36	16:08	17:20	18:24	20:32	21:37	22:20	22:02	20:54	19:30	18:07	16:00	15:29
37	08:44	07:39	06:24	05:58	04:48	04:15	04:44	05:47	06:53	07:58	08:59	15:29
38	16:10	17:22	18:26	20:35	21:39	22:20	22:00	20:52	19:27	18:04	16:00	15:29
39	08:42	07:37	06:21	05:56	04:46	04:15	04:46	05:49	06:55	08:00	08:59	15:29
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41	08:41	07:34	06:18	05:53	04:44	04:15	04:47	05:51	06:57	08:02	08:59	15:29
42	16:15	17:27	18:31	20:39	21:43	22:21	21:57	20:47	19:21	17:59	16:00	15:29
43	08:39	07:32	06:15	05:50	04:42	04:15	04:49	05:53	06:59	08:04	08:59	15:29
44	16:17	17:29	18:33	20:41	21:45	22:21	21:55	20:44	19:18	17:56	16:00	15:29
45	08:38	07:29	06:13	05:48	04:40	04:15	04:51	05:55	07:01	08:07	08:59	15:29
46	16:19	17:32	18:35	20:43	21:47	22:21	21:53	20:41	19:16	17:54	16:00	15:29
47	08:36	07:26	06:10	05:45	04:38	04:15	04:53	05:58	07:03	08:09	08:59	15:29
48	16:21	17:34	18:37	20:46	21:49	22:22	21:51	20:39	19:13	17:51	16:00	15:29
49	08:34	07:24	06:07	05:43	04:37	04:16	04:55	06:00	07:05	07:11	08:21	15:31
50	16:24	17:36	18:39	20:48	21:51	22:21	21:49	20:36	19:10	17:49	16:00	15:31
51	08:32	07:21	06:04	05:40	04:35	04:16	04:57	06:02	07:07	07:14	08:23	15:32
52	16:26	17:39	18:42	20:50	21:52	22:21	21:47	20:33	19:07	17:46	16:00	15:33
53	08:31	07:19	06:01	05:37	04:34	04:17	04:59	06:04	07:10	07:16	08:25	15:34
54	16:28	17:41	18:44	20:52	21:54	22:21	21:45	20:31	19:04	17:44	16:00	15:34
55	08:29	07:16	05:59	05:35	04:32	04:17	05:01	06:06	07:12	07:18	08:27	15:34
56	16:30	17:43	18:46	20:54	21:56	22:21	21:43	20:28	19:02	17:41	16:00	15:34
57	08:27	07:13	06:56	05:32	04:31	04:18	05:03	06:08	07:14	07:20	08:29	15:35
58	16:33	17:46	18:48	20:57	21:58	22:21	21:41	20:25	18:59	17:39	16:00	15:35
59	08:25	07:10	06:53	05:30	04:29	04:19	05:05	06:10	07:16	07:23	08:31	15:36
60	16:35	17:48	18:50	20:59	21:59	22:20	21:39	20:23	18:56	17:37	16:00	15:37
61	08:23	07:08	06:50	05:28	04:28	04:17	05:07	06:12	07:18	07:25	08:33	15:38
62	16:37	17:50	18:53	21:01	22:01	22:21	21:37	20:20	18:54	17:35	16:00	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						0.83		
Oper. time red.		1.00		1.00						1.00		
Wind dir. red.		1.00		1.00						1.00		
Total reduction		0.19		0.40						0.83		
Total, real		34		59						52		

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_Vestas162

SIA Estonian, Latvian & Lithuanian environment
Vilandes 3-6
LV-1010 Riga
0037167242411
Baiba / baiba.ozolina@environment.lv
Calculated:
15/01/2026 15:10/4.1.254

Calculation: Flickering_Valke_Vestas162 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

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
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	14:31 (4)	08:21	07:13	06:48	05:27	04:27	04:20	05:09	06:15	07:18	07:27	08:33
	15:39	22	14:53 (4)	16:40	17:46	19:55	21:01	22:02	22:20	21:35	20:17	18:53	15:37
2	09:00	14:31 (4)	08:19	07:11	06:45	05:25	04:25	04:21	05:11	06:17	07:20	07:30	08:35
	15:41	22	14:53 (4)	16:42	17:48	19:57	21:03	22:04	22:19	21:33	20:14	18:50	15:36
3	09:00	14:32 (4)	08:17	07:08	06:42	05:23	04:24	04:21	05:13	06:19	07:23	07:32	08:36
	15:42	23	14:55 (4)	16:44	17:50	19:59	21:06	22:05	22:19	21:31	20:12	18:48	15:35
4	08:59	14:32 (4)	08:15	07:05	06:39	05:20	04:23	04:22	05:15	06:21	07:25	07:34	08:38
	15:43	23	14:55 (4)	16:47	17:53	20:01	21:08	22:07	22:18	21:28	20:09	18:45	15:34
5	08:59	14:32 (4)	08:12	07:03	06:36	05:18	04:22	04:24	05:17	06:23	07:27	07:37	08:40
	15:45	23	14:55 (4)	16:49	17:55	20:04	21:10	22:08	22:17	21:26	20:06	18:42	15:33
6	08:58	14:33 (4)	08:10	07:00	06:34	05:15	04:21	04:25	05:19	06:25	07:29	07:39	08:41
	15:46	23	14:56 (4)	16:52	17:57	20:06	21:12	22:09	22:16	21:24	20:03	18:39	15:32
7	08:57	14:33 (4)	08:08	06:57	06:31	05:13	04:20	04:26	05:21	06:27	07:31	07:41	08:43
	15:48	23	14:56 (4)	16:54	17:59	20:08	21:14	22:11	22:16	21:22	20:01	18:37	15:32
8	08:57	14:33 (4)	08:06	06:54	06:28	05:11	04:19	04:27	05:23	06:29	07:33	07:43	08:44
	15:49	24	14:57 (4)	16:56	18:02	20:10	21:16	22:12	22:15	21:19	19:58	18:34	15:31
9	08:56	14:34 (4)	08:03	06:52	06:25	05:09	04:19	04:28	05:26	06:32	07:36	07:46	08:46
	15:51	24	14:58 (4)	16:59	18:04	20:13	21:19	22:13	22:14	21:17	19:55	18:31	15:31
10	08:55	14:35 (4)	08:01		06:49	06:23	05:06	04:18	04:30	05:28	06:34	07:38	07:48
	15:53	23	14:58 (4)	17:01	6	16:27 (2)	18:06	20:15	21:21	22:14	21:14	19:52	18:28
11	08:54	14:34 (4)	07:59		06:20	06:20	05:04	04:17	04:31	05:30	06:36	07:40	07:50
	15:55	24	14:58 (4)	17:03	10	16:30 (2)	18:08	20:17	21:23	22:15	22:11	19:49	18:26
12	08:53	14:35 (4)	07:56		06:18	06:22	05:02	04:17	04:33	05:32	06:38	07:42	07:53
	15:57	24	14:59 (4)	17:06	14	16:32 (2)	18:11	20:19	21:25	22:16	22:10	19:47	18:23
13	08:52	14:35 (4)	07:54		06:17 (2)	06:14	05:00	04:16	04:34	05:36	06:42	07:46	07:55
	15:58	23	14:58 (4)	17:08	18	16:35 (2)	18:13	20:21	21:27	22:17	22:09	19:44	18:20
14	08:51	14:36 (4)	07:52		06:16 (2)	06:38	06:12	04:58	04:16	04:36	05:36	06:42	07:47
	16:00	23	14:59 (4)	17:11	22	16:38 (2)	18:15	20:24	21:29	22:18	22:08	21:05	19:41
15	08:49	14:36 (4)	07:49		06:14 (2)	06:35	06:09	04:56	04:15	04:37	05:38	06:44	07

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		
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			
17			
18			
19			
20			
21			
22			
23			
24			
25			
26			
27			
28			
29			
30			
31			

Project:

Flickering_Valka_Vestas162

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 15:10/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 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	July	August	September	October	November	December	
1	09:01 15:40	08:21 16:40	08:54 (6) 17:46	07:14 17:46	2	07:41 (5) 19:55	06:48 19:55	05:28 21:01	04:27 22:03	04:20 21:35	05:09 20:17	06:15 18:54	07:19 20:17
2	09:00 15:41	08:19 16:42	15 09:09 (6) 17:48	08:51 (6) 17:48	6	07:38 (5) 19:57	06:45 19:57	05:25 21:04	04:26 22:04	04:21 21:33	05:11 20:15	06:17 18:51	07:21 20:15
3	09:00 15:42	08:17 16:45	18 09:10 (6) 17:51	08:50 (6) 17:51	10	07:35 (5) 20:00	06:42 20:00	05:23 21:06	04:25 22:06	04:22 21:31	05:13 20:12	06:19 18:48	07:23 20:12
4	08:59 15:44	08:15 16:47	20 09:10 (6) 17:53	08:49 (6) 17:53	13	07:45 (5) 20:02	06:40 20:02	05:21 21:08	04:23 22:07	04:23 21:29	05:15 20:09	06:21 18:45	07:25 20:09
5	08:59 15:45	08:13 16:49	21 09:11 (6) 17:55	08:49 (6) 17:55	17	07:30 (5) 20:04	06:37 20:04	05:18 21:10	04:22 22:09	04:24 21:27	05:17 20:06	06:23 18:42	07:27 20:06
6	08:58 15:47	08:11 16:52	22 09:11 (6) 17:57	08:49 (6) 17:57	19	07:47 (5) 20:06	06:34 20:06	05:16 21:12	04:21 22:10	04:25 21:24	05:20 20:04	06:26 18:40	07:29 20:06
7	08:58 15:48	08:08 16:54	21 09:11 (6) 18:00	08:08 (6) 18:00	19	07:46 (5) 20:08	06:31 20:08	05:13 21:15	04:20 22:11	04:26 21:22	05:22 20:01	06:28 18:37	07:32 20:01
8	08:57 15:50	08:06 16:57	22 09:11 (6) 18:02	08:06 (6) 18:02	19	07:26 (5) 20:11	06:28 20:11	05:11 21:17	04:20 22:12	04:27 21:25	05:24 20:01	06:30 18:34	07:34 20:01
9	08:56 15:51	08:04 16:59	21 09:11 (6) 18:04	08:04 (6) 18:04	18	07:27 (5) 20:13	06:26 20:13	05:09 21:19	04:19 22:13	04:29 21:17	05:26 19:55	06:32 18:31	07:36 20:01
10	08:55 15:53	08:01 17:01	20 09:11 (6) 18:06	08:01 (6) 18:06	16	07:28 (5) 20:15	06:23 20:15	05:07 21:21	04:18 22:14	04:30 21:13	05:28 19:53	06:34 18:29	07:38 20:01
11	08:54 15:55	07:59 17:04	19 09:10 (6) 18:09	08:52 (6) 18:09	13	07:29 (5) 20:17	06:20 20:17	05:04 21:23	04:17 22:15	04:31 21:12	05:30 20:06	06:36 18:26	07:40 20:06
12	08:53 15:57	07:57 17:06	17 09:09 (6) 18:11	08:53 (6) 18:11	8	07:31 (5) 20:19	06:17 20:19	05:02 21:25	04:17 22:16	04:33 21:10	05:32 20:06	06:38 18:22	07:42 20:06
13	08:52 15:59	07:54 17:09	16 09:09 (6) 18:11	08:55 (6) 18:11		08:55 (6) 19:57	06:41 18:13	05:00 21:27	04:16 22:17	04:34 21:07	05:34 20:06	06:40 18:21	07:45 20:06
14	08:51 16:01	07:52 17:11	11 09:06 (6) 18:13	08:58 (6) 18:13		08:58 (6) 19:57	06:38 18:15	04:58 21:30	04:16 22:18	04:36 21:05	05:37 20:06	06:42 18:18	07:47 20:06
15	08:50 16:03	07:50 17:13	5 09:03 (6) 18:15	09:03 (6) 18:15		09:03 (6) 19:57	06:35 18:18	04:56 21:32	04:16 22:20	04:38 21:02	05:39 20:06	06:45 18:15	07:49 20:06
16	08:48 16:05	07:47 17:16		06:33 18:20			06:33 18:20	04:54 21:34	04:15 22:19	04:39 22:05	05:41 21:00	06:47 18:13	07:51 20:06
17	08:47 16:07	07:45 17:18		06:30 18:22			06:30 18:22	04:52 21:36	04:15 22:20	04:41 21:04	05:43 20:06	06:49 18:10	07:54 20:06
18	08:46 16:09	07:42 17:20		06:27 18:24			06:27 18:24	04:50 21:38	04:15 22:20	04:43 21:06	05:45 20:06	06:51 18:07	07:56 20:06
19	08:44 16:11	07:40 17:23		06:24 18:27			06:24 18:27	04:48 21:40	04:15 22:21	04:44 21:02	05:47 20:06	06:53 18:05	07:58 20:06
20	08:43 16:13	07:37 17:25		06:21 18:29			06:21 18:29	04:46 21:42	04:15 22:21	04:46 21:02	05:49 20:06	06:55 18:05	07:59 20:06
21	08:41 16:15	07:35 17:27		06:19 18:31			06:19 18:31	04:44 21:44	04:15 22:22	04:48 21:07	05:51 20:06	06:57 18:05	08:03 20:06
22	08:40 16:17	07:32 17:30		06:16 18:33			06:16 18:33	04:42 21:46	04:15 22:22	04:50 21:05	05:54 20:06	06:59 18:05	08:05 20:06
23	08:38 16:19	07:29 17:32		06:13 18:35			06:13 18:35	04:41 21:47	04:15 22:22	04:51 21:05	05:56 20:06	07:01 18:07	08:07 20:06
24	08:36 16:22	07:27 17:34		06:10 18:38			06:10 18:38	04:39 21:49	04:16 22:22	04:53 21:05	05:58 20:06	07:04 18:09	08:09 20:06
25	08:35 16:24	07:24 17:37		06:07 18:40			06:07 18:40	04:37 21:51	04:16 22:22	04:55 21:06	06:00 20:06	07:06 18:10	08:12 20:06
26	08:33 16:26	07:22 17:39		06:05 18:42			06:05 18:42	04:36 21:53	04:17 22:22	04:57 21:06	06:02 20:06	07:08 18:14	08:14 20:06
27	08:31 16:28	07:19 17:41		06:02 18:44			06:02 18:44	04:34 21:55	04:17 22:22	04:59 21:06	06:04 20:06	07:10 18:16	08:16 20:06
28	08:29 16:31	07:16 17:44		05:59 18:46			05:59 18:46	04:32 21:56	04:18 22:21	05:01 21:06	06:06 20:06	07:12 18:18	08:18 20:06
29	08:27 16:33	09:00 (6) 16:33		06:56 19:49			06:56 19:49	04:31 21:58	04:18 22:21	05:03 21:06	06:09 20:06	07:14 18:19	08:21 20:06
30	08:25 16:35	08:58 (6) 16:35		06:53 19:51			06:53 19:51	04:30 22:00	04:19 22:21	05:05 21:06	06:11 20:06	07:16 18:25	08:23 20:06
31	08:23 16:38	08:56 (6) 16:38		06:51 19:53			06:51 19:53	04:28 22:01	04:18 22:21	05:07 21:06	06:13 20:06	07:18 18:26	08:24 20:06
Potential sun hours	227	262	365	429	515	539	538	474	386	321	214	219	207
Total, worst case	22	249	160	429	515	539	538	474	386	321	214	219	207
Sun reduction	0.11	0.19	0.40	429	515	539	538	474	386	321	0.28	0.08	0.08
Oper. time red.	1.00	1.00	1.00	429	515	539	538	474	386	321	1.00	1.00	1.00
Wind dir. red.	1.00	1.00	1.00	429	515	539	538	474	386	321	1.00	1.00	1.00
Total reduction	0.11	0.19	0.40	429	515	539	538	474	386	321	0.28	0.08	0.08
Total, real	2	48	64	429	515	539	538	474	386	321	61	17	207

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

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (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_Vestas162

SIA Estonian, Latvian & Lithuanian environment
Vilandes 3-6
LV-1010 Riga
0037167242411
Baiba / baiba.ozolina@environment.lv
Calculated:
15/01/2026 15:10/4.1.254

Calculation: Flickering_Valka_Vestas162 Shadow receptor: OS i - Shadow Receptor: 1.0 x 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

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
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		14:29 (4)	08:21		07:13	06:48	05:27	04:27	04:20	05:09	06:15	07:18		07:27		15:31 (2)	08:33		14:16 (4)				
	15:39	21	14:50 (4)	16:40		17:46	19:55	21:01	22:02	22:20	21:35	20:17	18:53		16:32	24	15:55 (2)	15:37	20	14:36 (4)				
2	09:00		14:29 (4)	08:19		07:11	06:45	05:25	04:25	04:21	05:11	06:17	07:20		07:30		15:32 (2)	08:35		14:16 (4)				
	15:40	21	14:50 (4)	16:42		17:48	19:57	21:03	22:04	22:19	21:33	20:14	18:50		16:29	22	15:54 (2)	15:36	20	14:36 (4)				
3	09:00		14:30 (4)	08:17		07:08	06:42	05:23	04:24	04:21	05:13	06:19	07:23		07:32		15:32 (2)	08:36		14:16 (4)				
	15:42	22	14:52 (4)	16:44		17:50	19:59	21:06	22:05	22:19	21:31	20:12	18:48		16:27	19	15:51 (2)	15:35	21	14:37 (4)				
4	08:59		14:31 (4)	08:15		16:07 (2)	07:05	06:39	05:20	04:23	04:22	05:15	06:21	07:25	07:34		15:33 (2)	08:38		14:17 (4)				
	15:43	21	14:52 (4)	16:47	4	16:11 (2)	17:53	20:01	21:08	22:07	22:18	21:28	20:09	18:45	16:25	16	15:49 (2)	15:34	20	14:37 (4)				
5	08:59		14:31 (4)	08:12		16:06 (2)	07:03	06:36	05:18	04:22	04:24	05:17	06:23	07:27	07:37		15:34 (2)	08:40		14:17 (4)				
	15:45	21	14:52 (4)	16:49	8	16:14 (2)	17:55	20:04	21:10	22:08	22:17	21:26	20:06	18:42	16:23	12	15:46 (2)	15:33	21	14:38 (4)				
6	08:58		14:31 (4)	08:10		16:04 (2)	07:00	06:34	05:15	04:21	04:25	05:19	06:25	07:29	07:39		15:35 (2)	08:41		14:18 (4)				
	15:46	21	14:52 (4)	16:52	12	16:16 (2)	17:57	20:06	21:12	22:09	22:16	21:24	20:03	18:39	16:20	9	15:44 (2)	15:32	21	14:39 (4)				
7	08:57		14:32 (4)	08:08		16:04 (2)	06:57	06:31	05:13	04:20	04:26	05:21	06:27	07:31	07:41		15:38 (2)	08:43		14:18 (4)				
	15:48	21	14:53 (4)	16:54	15	16:19 (2)	17:59	20:08	21:14	22:11	22:16	21:22	20:01	18:37	16:18	4	15:42 (2)	15:32	21	14:39 (4)				
8	08:57		14:32 (4)	08:06		16:02 (2)	06:54	06:28	05:11	04:19	04:27	05:23	06:29	07:33	07:43			08:44		14:19 (4)				
	15:49	21	14:53 (4)	16:56	20	16:22 (2)	18:02	20:10	21:16	22:12	22:15	21:19	19:58	18:34	16:16			15:31	21	14:40 (4)				
9	08:56		14:33 (4)	08:03		16:02 (2)	06:52	06:25	05:09	04:18	04:28	05:26	06:32	07:36	07:46			08:46		14:19 (4)				
	15:51	21	14:54 (4)	16:59	23	16:25 (2)	18:04	20:13	21:19	22:13	22:14	21:17	19:55	18:31	16:14			15:31	21	14:40 (4)				
10	08:55		14:34 (4)	08:01		16:02 (2)	06:49	06:23	05:06	04:18	04:30	05:28	06:34	07:38	07:48			08:47		14:19 (4)				
	15:53	20	14:54 (4)	17:01	23	16:25 (2)	18:06	20:15	21:21	22:14	22:12	21:14	19:52	18:28	16:12			15:30	22	14:41 (4)				
11	08:54		14:34 (4)	07:59		16:02 (2)	06:46	06:20	05:04	04:17	04:31	05												

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)

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 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	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 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 21:06	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	08:15 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	08:59 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	07:37 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 22:09	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 21:22	06:27 20:01	07:31 18:37	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 22:15	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	05:09 21:19	04:18 22:13	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	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	08:49 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 21:10	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 20:23	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	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 18:20	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	08:54 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 18:09	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 22:02	05:45 20:54	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	04:48 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 22:22	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 22:21	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	08:31 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	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 19:02	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 21:41	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	09:01 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		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)	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		

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Pastsili - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (790)
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	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	05:25 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 16:28	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	04:24 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 18:31	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	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	04:15 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 22:03	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	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	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	05:49 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 22:21	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	04:42 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 17:34	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 15:32
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 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		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 16:39	08:29 15:40	09:01 15:36
30	08:25 16:36		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 16:37	08:31 15:39	09:01 15:37
31	08:23 16:38		05:51 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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Flickering_Valka_Vestas162

SIA Estonian, Latvian & Lithuanian environment
Vilandes 3-6
LV-1010 Riga
0037167242411
Baiba / baiba.ozolina@environment.lv
Calculated:
15/01/2026 15:10/4.1.254

Calculation: Flickering_Valke_Vestas162 Shadow receptor: Pileniešis - Shadow Receptor: 1.0 x 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		10:05 (1)	08:21		08:53 (2)	07:13	06:48	05:28	04:27	04:20	05:09	06:15	07:18	07:28	08:23 (2)	08:33	09:44 (1)		
	15:39	107	14:09 (6)	16:40	56	10:45 (1)	17:46	19:55	21:01	22:03	22:20	21:35	20:17	18:53	16:32	37	10:07 (1)	15:37	83	13:50 (6)
2	09:00		10:05 (1)	08:19		08:51 (2)	07:11	06:45	05:25	04:26	04:21	05:11	06:17	07:21	07:30	08:22 (2)	08:35	09:46 (1)		
	15:41	108	14:10 (6)	16:42	58	10:45 (1)	17:48	19:57	21:04	22:04	22:20	21:33	20:15	18:51	16:30	44	10:09 (1)	15:36	85	13:52 (6)
3	09:00		10:04 (1)	08:17		08:50 (2)	07:08	06:42	05:23	04:24	04:22	05:13	06:19	07:23	07:32	08:22 (2)	08:37	09:47 (1)		
	15:42	106	14:09 (6)	16:45	59	10:45 (1)	17:50	19:59	21:06	22:06	22:19	21:31	20:12	18:48	16:27	47	10:11 (1)	15:35	87	13:53 (6)
4	08:59		10:04 (1)	08:15		08:50 (2)	07:05	06:39	05:20	04:23	04:23	05:15	06:21	07:25	07:34	08:21 (2)	08:38	09:48 (1)		
	15:43	103	14:09 (6)	16:47	58	10:44 (1)	17:53	20:02	21:08	22:07	22:18	21:29	20:09	18:45	16:25	50	10:11 (1)	15:34	90	13:55 (6)
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	07:37	08:21 (2)	08:40	09:48 (1)		
	15:45	101	14:09 (6)	16:49	55	10:43 (1)	17:55	20:04	21:10	22:08	22:18	21:26	20:06	18:42	16:23	54	10:13 (1)	15:33	91	13:55 (6)
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	07:39	08:20 (2)	08:42	09:49 (1)		
	15:46	96	14:09 (6)	16:52	54	10:43 (1)	17:57	20:06	21:12	22:10	22:17	21:24	20:04	18:40	16:20	56	10:13 (1)	15:33	99	13:56 (6)
7	08:58		10:03 (1)	08:08		08:51 (2)	06:57	06:31	05:13	04:20	04:26	05:22	06:28	07:31	07:41	08:20 (2)	08:43	09:50 (1)		
	15:48	90	14:09 (6)	16:54	52	10:42 (1)	18:00	20:08	21:15	22:11	22:16	21:22	20:01	18:37	16:18	57	10:14 (1)	15:32	100	13:57 (6)
8	08:57		10:03 (1)	08:06		08:52 (2)	06:55	06:28	05:11	04:19	04:27	05:24	06:30	07:34	07:44	08:20 (2)	08:45	09:52 (1)		
	15:50	89	14:09 (6)	16:56	48	10:41 (1)	18:02	20:10	21:17	22:12	22:15	21:19	19:58	18:34	16:16	59	10:15 (1)	15:31	104	13:58 (6)
9	08:56		10:03 (1)	08:04		08:53 (2)	06:52	06:26	05:09	04:19	04:29	05:26	06:32	07:36	07:46	08:22 (2)	08:46	09:52 (1)		
	15:51	88	14:09 (6)	16:59	42	10:39 (1)	18:04	20:13	21:19	22:13	22:14	21:17	19:55	18:31	16:14	58	10:16 (1)	15:31	106	13:58 (6)
10	08:55		10:03 (1)	08:01		08:55 (2)	06:49	06:23	05:06	04:18	04:30	05:28	06:34	07:38	07:48	08:25 (2)	08:48	09:54 (1)		
	15:53	85	14:09 (6)	17:01	36	10:38 (1)	18:06	20:15	21:21	22:14	22:13	21:15	19:52	18:29	16:12	55	10:16 (1)	15:30	108	13:59 (6)
11	08:54		10:03 (1)	07:59		08:57 (2)														

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_Vestas162

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 15:10/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Planci - Shadow Receptor: 1.0×1.0 Azimuth: 3.1° Slope: 90.0° (575)
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	04:26 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_Vestas162

Licensed user:

SIA Estonian, Latvian & Lithuanian environment
Vilandes 3-6
LV-1010 Riga
0037167242411
Baiba / baiba.ozolina@environment.lv
Calculated:
15/01/2026 15:10/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Plumes - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (490)
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	15:49 (4)	07:13	17:06 (2)	06:47	05:27	04:27	04:20	05:09	06:15	07:18
2	15:39	16:40	16:03 (4)	07:46	17:16 (2)	06:45	05:25	04:25	04:21	05:11	06:17	07:20
3	09:00	08:19	15:50 (4)	07:11	17:05 (2)	06:45	05:25	04:25	04:21	05:11	06:17	07:20
4	15:43	16:42	16:06 (4)	07:48	17:18 (2)	06:42	05:23	04:24	04:21	05:13	06:19	07:22
5	08:59	08:17	15:49 (4)	07:08	17:04 (2)	06:42	05:23	04:24	04:21	05:13	06:19	07:22
6	15:45	16:44	16:08 (4)	07:50	17:20 (2)	06:39	05:20	04:23	04:22	05:15	06:21	07:25
7	08:59	08:15	15:50 (4)	07:05	17:04 (2)	06:39	05:20	04:23	04:22	05:15	06:21	07:25
8	15:43	16:47	16:09 (4)	07:52	17:22 (2)	06:36	05:18	04:22	04:24	05:17	06:23	07:27
9	08:59	08:12	15:50 (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	16:09 (4)	07:55	17:23 (2)	06:34	05:15	04:21	04:25	05:19	06:25	07:29
11	08:58	08:10	15:50 (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	16:08 (4)	07:57	17:23 (2)	06:31	05:13	04:20	04:26	05:21	06:27	07:31
13	08:57	08:08	15:51 (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	16:08 (4)	07:59	17:22 (2)	06:28	05:11	04:19	04:27	05:23	06:29	07:33
15	08:56	08:06	15:52 (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	16:07 (4)	07:52	17:21 (2)	06:25	05:09	04:18	04:28	05:26	06:32	07:36
17	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
18	15:51	16:59	16:06 (4)	07:54	17:19 (2)	06:22	05:06	04:18	04:30	05:28	06:34	07:38
19	08:55	08:01	15:55 (4)	06:49	17:08 (2)	06:23	05:06	04:18	04:30	05:28	06:34	07:38
20	15:53	17:01	16:04 (4)	07:56	17:16 (2)	06:20	05:04	04:17	04:31	05:30	06:36	07:40
21	08:54	07:59		06:46		06:20	05:04	04:17	04:31	05:30	06:36	07:40
22	15:55	17:03		06:48		06:20	05:04	04:17	04:31	05:30	06:36	07:40
23	08:53	07:56		06:43		06:17	05:02	04:17	04:33	05:32	06:38	07:42
24	15:56	17:06		06:41		06:17	05:02	04:17	04:33	05:32	06:38	07:42
25	08:52	07:54		06:41		06:14	05:00	04:16	04:34	05:34	06:40	07:44
26	15:58	17:08		06:38		06:12	04:58	04:16	04:36	05:36	06:42	07:47
27	08:51	07:52		06:38		06:12	04:58	04:16	04:36	05:36	06:42	07:47
28	16:00	17:11		06:35		06:09	04:56	04:15	04:37	05:38	06:44	07:49
29	08:49	07:49		06:35		06:09	04:56	04:15	04:37	05:38	06:44	07:49
30	16:02	17:13		06:32		06:06	04:53	04:15	04:39	05:40	06:46	07:51
31	08:48	07:47		06:32		06:06	04:53	04:15	04:39	05:40	06:46	07:51
32	16:04	17:15		06:29		06:04	04:51	04:15	04:40	05:43	06:48	07:53
33	08:47	07:44		06:29		06:04	04:51	04:15	04:40	05:43	06:48	07:53
34	16:06	17:18		06:22		06:03	04:49	04:15	04:42	05:45	06:51	07:55
35	08:45	07:42		06:27		06:01	04:49	04:15	04:42	05:45	06:51	07:55
36	16:08	17:20		06:24		06:00	04:48	04:15	04:44	05:47	06:53	07:58
37	08:44	07:39		06:24		06:00	04:48	04:15	04:44	05:47	06:53	07:58
38	16:10	17:22		06:21		06:00	04:48	04:15	04:44	05:47	06:53	07:58
39	08:42	07:37		06:21		06:00	04:48	04:15	04:44	05:47	06:53	07:58
40	16:13	17:25		06:18		06:00	04:48	04:15	04:44	05:47	06:53	07:58
41	08:41	07:34		06:18		06:00	04:48	04:15	04:44	05:47	06:53	07:58
42	16:15	17:27		06:15		06:00	04:48	04:15	04:44	05:47	06:53	07:58
43	08:39	07:32		06:15		06:00	04:48	04:15	04:44	05:47	06:53	07:58
44	16:17	17:29		06:13		06:00	04:48	04:15	04:44	05:47	06:53	07:58
45	08:38	07:29		06:13		06:00	04:48	04:15	04:44	05:47	06:53	07:58
46	16:19	17:32		06:10		06:00	04:48	04:15	04:44	05:47	06:53	07:58
47	08:36	07:26		06:10		06:00	04:48	04:15	04:44	05:47	06:53	07:58
48	16:21	17:34		06:07		06:00	04:48	04:15	04:44	05:47	06:53	07:58
49	08:34	07:24		06:07		06:00	04:48	04:15	04:44	05:47	06:53	07:58
50	16:24	17:36		06:04		06:00	04:48	04:15	04:44	05:47	06:53	07:58
51	08:32	07:21		06:04		06:00	04:48	04:15	04:44	05:47	06:53	07:58
52	16:26	17:39		06:04		06:00	04:48	04:15	04:44	05:47	06:53	07:58
53	08:31	07:19		06:01		06:00	04:48	04:15	04:44	05:47	06:53	07:58
54	16:28	17:41		06:01		06:00	04:48	04:15	04:44	05:47	06:53	07:58
55	08:29	07:16		06:01		06:00	04:48	04:15	04:44	05:47	06:53	07:58
56	16:30	17:43		06:01		06:00	04:48	04:15	04:44	05:47	06:53	07:58
57	08:27	15:51 (4)		06:56		06:00	04:48	04:15	04:44	05:47	06:53	07:58
58	16:33	15:55 (4)		06:56		06:00	04:48	04:15	04:44	05:47	06:53	07:58
59	08:25	15:51 (4)		06:53		06:00	04:48	04:15	04:44	05:47	06:53	07:58
60	16:35	15:58 (4)		06:50		06:00	04:48	04:15	04:44	05:47	06:53	07:58
61	08:23	15:49 (4)		06:50		06:00	04:48	04:15	04:44	05:47	06:53	07:58
62	16:37	16:00 (4)		06:53		06:00	04:48	04:15	04:44	05:47	06:53	07:58
Potential sun hours	227	262	365	429	515	539	538	474	386	321	241	207
Total, worst case	22	165	151	429	515	539	538	474	386	321	241	207
Sun reduction	0.11	0.19	0.40	429	515	539	538	474	386	321	241	207
Oper. time red.	1.00	1.00	1.00	429	515	539	538	474	386	321	241	207
Wind dir. red.	1.00	1.00	1.00	429	515	539	538	474	386	321	241	207
Total reduction	0.11	0.19	0.40	429	515	539	538	474	386	321	241	207
Total, real	2	32	61	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)

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 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	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 15:37
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 20:06	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	04:21 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	06:28 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 15:52	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	08:01 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	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	04:18 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	04:16 22:17	04:34 22:09	05:34 21:07	06:40 19:44	07:45 18:21	07:55 16:06	08:51 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	05:37 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	04:15 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	08:06 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	06:21 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	05:52 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 16:19	07:29 17:32	06:13 18:35	05:48 20:44	04:41 21:47	04:15 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 15:46	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 20:36	07:06 19:10	07:12 16:49	08:21 15:45	09:00 15:32
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 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	06:06 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 19:49	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 15:39	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)	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_Vestas162

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 15:10/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 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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SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 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	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
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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
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	15:49	16:56	18:02	20:10	21:17	22:12	22:15	21:20	19:58	18:34	16:16	15:31
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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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	16:08	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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	16:17	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	05:55	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	04:38	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
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	16:28	17:41	18:44	20:53	21:55	22:22	21:46	20:31	19:05	16:44	15:42	15:34
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	16:30	17:43	18:46	20:55	21:56	22:21	21:44	20:28	19:02	16:41	15:41	15:34
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	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	15:36
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_Vestas162

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 15:10/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 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 21:19	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		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_Vestas162

Licensed user:

SIA Estonian, Latvian & Lithuanian environment
 Vilandes 3-6
 LV-1010 Riga
 0037167242411
 Baiba / baiba.ozolina@environment.lv
 Calculated:
 15/01/2026 15:10/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Poruka iela 19 (94010010924001) - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (609)
 Sunshine probability S (Average daily sunshine hours) []

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

No operational time reduction. It is assumed 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
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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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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)	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_Vestas162

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 15:10/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 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 21:10	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 15:37
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_Vestas162

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 15:10/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 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
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 19:04	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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SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 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) []

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	04:20	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
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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	05:15	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
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	15:49	16:56	18:02	20:10	21:17	22:12	22:15	21:19	19:58	18:34	16:16	15:31
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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	04:53	04:15	04:39	05:41	06:46	07:51	08:02	08:55
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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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23	08:38	07:29	06:13	05:48	04:40	04:15	04:51	05:55	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	04:38	04:15	04:53	05:58	07:03	08:09	08:19	09:00
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	16:30	17:43	18:46	20:55	21:56	22:21	21:44	20:28	19:02	16:41	15:41	15:34
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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	15:36
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		

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Poruka iela 21B - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (613)
 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	07:44 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 19:04	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_Vestas162

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 15:10/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 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	08:21	07:13	06:48	05:27	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	06:36	05:18	04:22	04:23	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	05:15	04:21	04:25	05:19	06:25	07:29	07:39	08:42
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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
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	04:49	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	15:52	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	05:55	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	04:38	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	19:04	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	15:36
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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SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 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
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	06:44 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 22:21	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 15:36
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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SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 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
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 22:11	04:27 22:14	05:24 21:19	06:30 19:58	07:33 18:34	07:43 16:16	08:44 15:31
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	08:14 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 20:45	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)	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_Vestas162

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 15:10/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Pumpura jela 10A - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (668)
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
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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_Vestas162

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 15:10/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 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
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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_Vestas162

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 15:10/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 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
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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	04:48 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_Vestas162

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 15:10/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 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
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 17:51	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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Flickering_Valka_Vestas162

SIA Estonian, Latvian & Lithuanian environment
Vilandes 3-6
LV-1010 Riga
0037167242411
Baiba / baiba.ozolina@environment.lv
Calculated:
15/01/2026 15:10/4.1.254

Calculation: Flickering_Valke_Vestas162 Shadow receptor: Pinas - Shadow Receptor: 1.0 x 1.0 Azimuth: 3.1° Slope: 90.0° (481)
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		14:42 (4)	08:21		07:13	06:48		05:27	04:27	04:20		05:09	06:15	07:18		07:27		15:39 (2)	08:33		14:27 (4)		
	15:39	11	14:53 (4)	16:40		17:46	19:55		21:01	22:02	22:20		21:35	20:17	18:53		16:32	17	15:56 (2)	15:37	20	14:47 (4)		
2	09:00		14:41 (4)	08:19		07:11	06:45		05:25	04:25	04:21		05:11	06:17	07:20		07:30		15:40 (2)	08:35		14:27 (4)		
	15:40	13	14:54 (4)	16:42		17:48	19:57		21:03	22:04	22:19		21:33	20:14	18:50		16:29	14	15:54 (2)	15:36	20	14:47 (4)		
3	09:00		14:42 (4)	08:17		07:08	06:42		05:23	04:24	04:21		05:13	06:19	07:23		07:32		15:41 (2)	08:36		14:27 (4)		
	15:42	14	14:56 (4)	16:44		17:50	19:59		21:06	22:05	22:19		21:31	20:12	18:48		16:27	10	15:51 (2)	15:35	20	14:47 (4)		
4	08:59		14:42 (4)	08:15		07:05	06:39		05:20	04:23	04:22		05:15	06:21	07:25		07:34		15:43 (2)	08:38		14:28 (4)		
	15:43	16	14:58 (4)	16:47		17:53	20:01		21:08	22:07	22:18		21:28	20:09	18:45		16:25	6	15:49 (2)	15:34	20	14:48 (4)		
5	08:59		14:43 (4)	08:12		07:03	06:36		05:18	04:22	04:24		05:17	06:23	07:27		07:37		15:44 (2)	08:40		14:28 (4)		
	15:45	16	14:59 (4)	16:49		17:55	20:04		21:10	22:08	22:17		21:26	20:06	18:42		16:22	2	15:46 (2)	15:33	20	14:48 (4)		
6	08:58		14:43 (4)	08:10		07:00	06:34		05:15	04:21	04:25		05:19	06:25	07:29		07:39		15:42 (2)	08:41		14:29 (4)		
	15:46	18	15:01 (4)	16:52	2	16:14 (2)	17:57		20:06	21:12	22:09		22:16	21:24	20:03		16:20		15:52	18	14:47 (4)			
7	08:57		14:43 (4)	08:08		06:31	05:13		05:13	04:20	04:26		05:21	06:27	07:31		07:41		15:43 (2)	08:43		14:30 (4)		
	15:48	20	15:03 (4)	16:54	6	16:19 (2)	17:59		20:08	21:14	22:11		22:16	21:22	20:01		16:18		15:32	16	14:46 (4)			
8	08:57		14:44 (4)	08:06		06:11 (2)	06:54		06:28	05:11	04:19		04:27	05:23	06:29		07:43		15:37 (2)	08:44		14:31 (4)		
	15:49	20	15:04 (4)	16:56	11	16:22 (2)	18:02		20:10	21:16	22:12		22:15	21:19	19:58		16:16		15:31	15	14:46 (4)			
9	08:56		14:44 (4)	08:03		06:11 (2)	06:52		06:25	05:09	04:18		04:28	05:26	06:32		07:46		15:36 (2)	08:46		14:31 (4)		
	15:51	20	15:04 (4)	16:59	14	16:25 (2)	18:04		20:12	21:19	22:13		22:14	21:17	19:55		16:14		15:31	13	14:44 (4)			
10	08:55		14:45 (4)	08:01		06:23	05:06		04:34	04:18	04:30		05:28	06:34	07:38		07:48		15:32 (2)	08:47		14:32 (4)		
	15:53	20	15:05 (4)	17:01	17	16:27 (2)	18:06		20:15	21:21	22:14		22:12	21:14	19:52		16:12		15:30	12	14:44 (4)			
11	08:54		14:45 (4)	07:59		06:10 (2)	06:46																	

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)

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Raina iela 37 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (600)
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	07:45 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		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_Vestas162

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 15:10/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 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	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	21:26	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	21:20	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	16:07	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	22:03	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	17:51	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	17:36	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)	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_Vestas162

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 15:10/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 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	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	20:10	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	06:47	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	04:51	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	07:40	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	17:51	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
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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
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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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SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Raina iela 53 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (760)
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	04:52 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	08:56 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 17:37	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)	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_Vestas162

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 15:10/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 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
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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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
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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	06:47 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 21:45	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 16:42	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)	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_Vestas162

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 15:10/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 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
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
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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
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 21:45	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 16:42	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_Vestas162

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 15:10/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Raina iela 58 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (648)
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 22:04	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_Vestas162

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 15:10/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Raina iela 59 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (705)
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 21:27	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 16:06	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 22:04	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	07:12 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)	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_Vestas162

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 15:10/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 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	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
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	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
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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
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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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	15:58	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
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	04:51	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	21:45	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	08:35	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)		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_Vestas162

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 15:10/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 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
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 22:04	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)	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_Vestas162

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 15:10/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 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	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	06:47	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	22:04	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	21:45	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	08:35	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_Vestas162

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 15:10/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 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
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	04:52 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 17:51	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_Vestas162

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 15:10/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Raina iela 66 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (647)
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
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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 22:04	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 16:42	08:27 15:41	09:01 15:34
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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
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Total, worst case												
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Total, real												

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

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Project:

Flickering_Valka_Vestas162

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 15:10/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 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_Vestas162

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 15:10/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Raina iela 74 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (661)
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
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 18:17	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 15:35
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)	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_Vestas162

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 15:10/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Raina iela 76 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (660)
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	07:18	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
	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
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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	06:28	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	20:11	21:17	22:12	22:15	21:20	19:58	18:34	16:16	15:31
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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
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
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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	21:30	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	18:18	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	22:04	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	17:52	15:46	15:31
25	08:35	07:24	06:07	05:43	04:37	04:16	04:55	06:00	07:06	07:12	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	06:11	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	15:38	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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SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Raina iela 78 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (759)
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	07:18	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	16:30	15:36
3	09:00	08:17	07:08	06:42	05:23	04:24	04:22	05:13	06:19	07:23	07:32	08:37
	15:42	16:45	17:50	20:00	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	04:23	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	08:11	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	18:40	16:20	15:33
7	08:58	08:08	06:57	06:31	05:13	04:20	04:26	05:21	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	16:56	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	06:26	05:09	04:19	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	18:29	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	22:11	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	07:58	08:53
	16:00	17:11	18:15	20:24	21:30	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	18:18	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	04:41	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	22:21	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
	16:11	17:23	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	06:19	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	22:22	21:57	20:47	19:21	17:59	15:51	15:30
22	08:40	07:32	06:16	05:51	04:42	04:15	04:49	05:53	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	15:49	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	07:12	08:21	09:01
	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	06:05	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	16:47	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
	16:31	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	06:08	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	15:39	15:36
30	08:25		06:53	05:30	04:29	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	15:38	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		16:34		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		

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 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
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 16:10	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
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_Vestas162

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 15:10/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 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
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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_Vestas162

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 15:10/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 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) []

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Total, worst case												
Sun reduction												
Oper. time red.												
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Total reduction												
Total, real												

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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_Vestas162

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 15:10/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 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) []

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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)	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_Vestas162

SIA Estonian, Latvian & Lithuanian environment
Vilandes 3-6
LV-1010 Riga
0037167242411
Baiba / baiba.ozolina@environment.lv
Calculated:
15/01/2026 15:10/4.1.254

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Riekstini - Shadow Receptor: 1.0 x 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

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
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	06:48	05:27	04:27	04:20	05:09	06:15	07:18			07:27			08:33			14:37 (4)			
	15:39		16:40		17:46	19:55	21:01	22:02	22:20	21:35	20:17	18:53			16:32			15:37	16		14:53 (4)			
2	09:00		08:19		07:11	06:45	05:25	04:25	04:21	05:11	06:17	07:20			07:30			08:35			14:38 (4)			
	15:40		16:42		17:48	19:57	21:03	22:04	22:19	21:33	20:14	18:50			16:29			15:36	14		14:52 (4)			
3	09:00		08:17	14:55 (4)	07:08	06:42	05:23	04:24	04:21	05:13	06:19	07:23			07:32			08:36			14:38 (4)			
	15:42	1	16:44	14:56 (4)	17:50	19:59	21:06	22:05	22:19	21:31	20:12	18:48			16:27			15:35	12		14:50 (4)			
4	08:59		08:15	14:55 (4)	07:05	06:39	05:20	04:23	04:22	05:15	06:21	07:25			07:34			08:38			14:39 (4)			
	15:43	3	16:47	14:58 (4)	17:53	20:01	21:08	22:07	22:18	21:28	20:09	18:45			16:25			15:34	10		14:49 (4)			
5	08:59		08:12	14:55 (4)	07:03	06:36	05:18	04:22	04:24	05:17	06:23	07:27			07:37			08:40			14:40 (4)			
	15:45	4	16:49	14:59 (4)	17:55	20:04	21:10	22:08	22:17	21:26	20:06	18:42			16:23			15:33	8		14:48 (4)			
6	08:58		08:10	14:55 (4)	07:00	06:34	05:15	04:21	04:25	05:19	06:25	07:29			07:39			08:41			14:41 (4)			
	15:46	6	16:52	15:01 (4)	17:57	20:06	21:12	22:09	22:16	21:24	20:03	18:39			16:20			15:32	6		14:47 (4)			
7	08:57		08:08	14:55 (4)	06:57	06:31	05:13	04:20	04:26	05:21	06:27	07:31			07:41			08:43			14:42 (4)			
	15:48	8	16:54	15:03 (4)	17:59	20:08	21:14	22:11	22:16	21:22	20:01	18:37			16:18			15:32	5		14:47 (4)			
8	08:57		08:06	14:55 (4)	06:54	06:28	05:11	04:19	04:27	05:23	06:29	07:33			07:43			08:44			14:43 (4)			
	15:49	10	16:56	15:05 (4)	18:02	20:10	21:16	22:12	22:15	21:19	19:58	18:34			16:16			15:31	3		14:46 (4)			
9	08:56		08:03	14:55 (4)	06:52	06:25	05:09	04:18	04:28	05:26	06:32	07:36			07:46			08:46						
	15:51	12	16:59	15:07 (4)	18:04	20:12	21:19	22:13	22:14	21:17	19:55	18:31			16:14			15:31						
10	08:55		08:01	14:56 (4)	06:49	06:23	05:06	04:18	04:30	05:28	06:34	07:38			07:48			08:47						
	15:53	13	17:01	15:09 (4)	18:06	20:15	21:21	22:14	22:12	21:14	19:52	18:28			16:12			15:30						
11	08:54		07:59	14:55 (4)	06:46	06:20	05:04	04:17	04:31	05:30	06:36	07:40			07:50			08:49						
	15:55	16	17:03	15:11 (4)	18:08	20:17	21:23	22:15	22:11	21:12	19:49	18:26			16:09			15:30						
12	08:53		07:56																					

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)

Flickering_Valka_Vestas162

SIA Estonian, Latvian & Lithuanian environment
Vilandes 3-6
LV-1010 Riga
0037167242411
Baiba / baiba.ozolina@environment.lv
Calculated:
15/01/2026 15:10/4.1.254

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
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		14:33 (4)	08:21		07:13	06:48	05:27	04:27	04:20	05:09	06:15	07:18		07:27		15:40 (2)	08:33		14:19 (4)				
15:39	20	14:53 (4)	16:40		17:46	19:55	21:01	22:02	22:20	21:35	20:17	18:53		16:32	16	15:56 (2)	15:37	22	14:41 (4)				
09:00		14:33 (4)	08:19		07:11	06:45	05:25	04:25	04:21	05:11	06:17	07:20		07:30		15:42 (2)	08:35		14:19 (4)				
15:40	21	14:54 (4)	16:42		17:48	19:57	21:03	22:04	22:19	21:33	20:14	18:50		16:29	12	15:54 (2)	15:36	22	14:41 (4)				
09:00		14:34 (4)	08:17		07:08	06:42	05:23	04:24	04:21	05:13	06:19	07:23		07:32		15:42 (2)	08:36		14:20 (4)				
15:42	22	14:56 (4)	16:44		17:50	19:59	21:06	22:05	22:19	21:31	20:12	18:48		16:27	9	15:51 (2)	15:35	21	14:41 (4)				
08:59		14:34 (4)	08:15		07:05	06:39	05:20	04:23	04:22	05:15	06:21	07:25		07:34		15:45 (2)	08:38		14:20 (4)				
15:43	22	14:56 (4)	16:47		17:53	20:01	21:08	22:07	22:18	21:28	20:09	18:45		16:25	4	15:49 (2)	15:34	22	14:42 (4)				
08:59		14:35 (4)	08:12		07:03	06:36	05:18	04:28	04:24	05:17	06:23	07:27		07:37			08:40		14:20 (4)				
15:45	21	14:56 (4)	16:49		17:55	20:04	21:10	22:08	22:17	21:26	20:06	18:42		16:23			15:33	22	14:42 (4)				
08:58		14:35 (4)	08:10		07:00	06:34	05:15	04:21	04:25	05:19	06:25	07:29		07:39			08:41		14:21 (4)				
15:46	22	14:57 (4)	16:52		17:57	20:06	21:12	22:09	22:16	21:24	20:03	18:39		16:20			15:32	22	14:43 (4)				
08:57		14:35 (4)	08:08		16:15 (2)	06:57	06:31	05:13	04:20	04:26	05:21	06:27	07:31		07:41		08:43		14:22 (4)				
15:48	22	14:57 (4)	16:54	4	16:19 (2)	17:59	20:08	21:14	22:11	22:16	21:22	20:01	18:37		16:18		15:32	21	14:43 (4)				
08:57		14:36 (4)	08:06		16:13 (2)	06:54	06:28	05:11	04:19	04:27	05:23	06:29	07:33		07:43		08:44		14:23 (4)				
15:49	22	14:58 (4)	16:56	9	16:22 (2)	18:02	20:10	21:16	22:12	22:15	21:19	19:58	18:34		16:16		15:31	21	14:44 (4)				
08:56		14:36 (4)	08:03		16:12 (2)	06:52	06:25	05:09	04:18	04:28	05:26	06:32	07:36		07:46		08:46		14:22 (4)				
15:51	22	14:58 (4)	16:59	13	16:25 (2)	18:04	20:12	21:19	22:13	22:14	21:17	19:55	18:31		16:14		15:31	22	14:44 (4)				
08:55		14:37 (4)	08:01		16:10 (2)	06:49	06:23	05:06	04:18	04:30	05:28	06:34	07:38		07:48		08:47		14:23 (4)				
15:53	22	14:59 (4)	17:01	17	16:27 (2)	18:06	20:15	21:21	22:14	22:12	21:14	19:52	18:28		16:12		15:30	21	14:44 (4)				
08:54	</																						

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Rozes - Shadow Receptor: 1.0×1.0 Azimuth: 3.1° Slope: 90.0° (791)
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	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		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 16:39	08:29 15:40	09:01 15:36
30	08:25 16:36		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 16:37	08:31 15:39	09:01 15:37
31	08:23 16:38		05:51 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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SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 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 15:39	08:21 16:40	07:13 17:46	17:05 (12) 17:16 (12)	06:48 18:41 (4)	05:28 20:00 (2)
2	09:00 15:41	08:19 16:42	07:11 17:48	17:04 (12) 17:18 (12)	06:45 19:05 (4)	20:22 (2) 20:22 (2)
3	08:59 15:42	08:17 16:44	07:08 17:50	17:03 (12) 17:20 (12)	06:42 19:04 (4)	20:01 (2) 20:22 (2)
4	08:59 15:43	08:14 16:47	16:10 (11) 16:11 (11)	07:05 17:23 (12)	06:39 20:01	20:02 (2) 20:21 (2)
5	08:58 15:45	08:12 16:49	16:08 (11) 16:14 (11)	07:02 17:23 (12)	06:36 20:04	20:03 (2) 20:20 (2)
6	08:58 15:46	08:10 16:52	16:06 (11) 16:16 (11)	07:00 17:23 (12)	06:34 20:06	20:03 (2) 20:18 (2)
7	08:57 15:48	08:08 16:54	16:06 (11) 16:20 (11)	06:57 17:22 (12)	06:31 20:08	20:04 (2) 20:17 (2)
8	08:56 15:50	08:06 16:56	16:04 (11) 16:22 (11)	06:54 18:02	06:28 17:21 (12)	20:06 (2) 20:15 (2)
9	08:56 15:51	08:03 16:59	16:04 (11) 16:25 (11)	06:52 18:04	06:25 17:19 (12)	04:19 22:13
10	08:55 15:53	08:01 17:01	16:03 (11) 16:27 (11)	06:49 18:06	06:23 17:17 (12)	04:18 22:14
11	08:54 15:55	07:59 17:03	16:03 (11) 16:28 (11)	06:46 18:08	06:20 17:13 (12)	04:17 22:15
12	08:53 15:57	07:56 17:06	16:03 (11) 16:28 (11)	06:43 18:11	06:17 20:19	04:17 22:16
13	08:52 15:58	07:54 17:08	16:03 (11) 16:29 (11)	06:41 18:13	06:14 20:21	04:16 22:17
14	08:50 16:00	07:52 17:11	16:03 (11) 16:28 (11)	06:38 18:15	06:12 20:23	04:16 22:18
15	08:49 16:02	07:49 17:13	16:03 (11) 16:28 (11)	06:35 18:17	06:09 20:26	04:15 22:18
16	08:48 16:04	07:47 17:15	16:04 (11) 16:28 (11)	06:32 18:20	06:06 20:28	04:15 22:19
17	08:47 16:06	07:44 17:18	16:04 (11) 16:27 (11)	06:29 18:22	06:04 20:30	04:15 22:19
18	08:45 16:08	07:42 17:20	16:04 (11) 16:26 (11)	06:27 18:24	06:01 20:32	04:15 22:20
19	08:44 16:11	07:39 17:22	16:06 (11) 16:25 (11)	06:24 18:26	17:55 (14) 20:35	04:15 22:20
20	08:42 16:13	07:37 17:25	16:07 (11) 16:23 (11)	06:21 18:28	17:53 (14) 17:59 (4)	04:15 22:21
21	08:41 16:15	07:34 17:27	16:09 (11) 16:21 (11)	06:18 18:31	17:50 (4) 18:01 (4)	04:15 22:21
22	08:39 16:17	07:32 17:29	06:15 18:33	17:47 (4) 18:03 (4)	05:50 20:41	04:15 21:45
23	08:38 16:19	07:29 17:32	06:13 18:35	17:47 (4) 18:06 (4)	1 20:09 (2) 20:43	21:45 21:47
24	08:36 16:21	07:26 17:34	06:10 18:37	17:45 (4) 18:08 (4)	20:04 (2) 20:46	04:16 21:49
25	08:34 16:24	07:24 17:36	06:07 18:39	17:44 (4) 18:09 (4)	05:43 20:48	04:16 22:21
26	08:32 16:26	07:21 17:39	06:04 18:42	17:43 (4) 18:09 (4)	05:40 20:50	04:16 22:21
27	08:31 16:28	07:19 17:41	17:07 (12) 17:11 (12)	06:01 18:44	20:52 20:52	04:17 22:21
28	08:29 16:30	07:16 17:43	17:05 (12) 17:13 (12)	05:59 18:46	05:35 18:09 (4)	04:18 22:21
29	08:27 16:33			06:56 19:48	20:57 20:23 (2)	04:18 22:21
30	08:25 16:35			06:53 19:50	18:41 (4) 19:08 (4)	04:19 22:20
31	08:23 16:37			06:50 19:53	18:41 (4) 19:07 (4)	04:28 22:01
Potential sun hours	227	262	365	429	515	539
Total, worst case		348	431	222	138	
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		68	174	94	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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SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 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	07:18 18:53	07:27 16:32	15:33 (11) 15:37
2	04:21 22:19	05:11 21:33	06:17 20:14	07:20 18:50	23 16:29	15:34 (11) 15:36
3	04:22 22:19	05:13 21:31	06:19 20:12	07:22 18:48	17:45 (12) 9 17:54 (12)	15:34 (11) 15:35
4	04:23 22:18	05:15 21:28	20:19 (2) 20:09	06:21 18:45	17:42 (12) 14 17:56 (12)	15:35 (11) 15:34
5	04:24 22:17	05:17 21:26	20:16 (2) 20:06	06:23 18:42	17:41 (12) 17 17:58 (12)	15:36 (11) 15:33
6	04:25 22:16	05:19 21:24	20:14 (2) 20:03	06:25 18:39	17:39 (12) 19 17:58 (12)	15:38 (11) 15:33
7	04:26 22:15	05:21 21:22	20:13 (2) 20:01	06:27 18:43 (4)	17:38 (12) 07:31	15:44 (11) 15:32
8	04:27 22:14	05:23 21:19	20:29 (2) 19:58	12 18:55 (4)	18:37 20 17:58 (12)	16:18 15:32
9	04:28 22:13	05:26 21:17	20:12 (2) 19:55	06:29 18:40 (4)	07:33 18:36 (4)	17:37 (12) 07:43
10	04:29 22:12	05:28 21:14	20:30 (2) 19:52	17 18:57 (4)	18:34 21 17:58 (12)	16:16 15:31
11	04:30 22:11	05:30 21:12	20:11 (2) 19:55	06:32 18:38 (4)	07:36 17:37 (12)	07:46 15:31
12	04:31 22:10	05:32 21:10	20:10 (2) 19:52	20 18:58 (4)	18:31 22 17:59 (12)	16:14 15:31
13	04:32 22:09	05:34 21:07	20:10 (2) 19:52	22 18:58 (4)	18:28 19 17:56 (12)	16:12 15:30
14	04:33 22:08	05:36 21:05	20:10 (2) 19:52	24 18:59 (4)	18:26 16 17:53 (12)	16:10 15:30
15	04:34 22:07	05:38 21:02	20:08 (2) 19:49	24 18:59 (4)	18:26 16 17:53 (12)	16:10 15:30
16	04:35 22:06	05:39 21:01	20:08 (2) 19:49	24 18:59 (4)	18:26 16 17:53 (12)	16:10 15:30
17	04:36 22:05	05:40 21:00	20:08 (2) 19:49	24 18:59 (4)	18:26 16 17:53 (12)	16:10 15:30
18	04:37 22:04	05:41 20:59	20:08 (2) 19:49	24 18:59 (4)	18:26 16 17:53 (12)	16:10 15:30
19	04:38 22:03	05:42 20:58	20:08 (2) 19:49	24 18:59 (4)	18:26 16 17:53 (12)	16:10 15:30
20	04:39 22:02	05:43 20:57	20:08 (2) 19:49	24 18:59 (4)	18:26 16 17:53 (12)	16:10 15:30
21	04:40 22:01	05:44 20:56	20:08 (2) 19:49	24 18:59 (4)	18:26 16 17:53 (12)	16:10 15:30
22	04:41 22:00	05:45 20:55	20:08 (2) 19:49	24 18:59 (4)	18:26 16 17:53 (12)	16:10 15:30
23	04:42 21:59	05:46 20:54	20:08 (2) 19:49	24 18:59 (4)	18:26 16 17:53 (12)	16:10 15:30
24	04:43 21:58	05:47 20:53	20:08 (2) 19:49	24 18:59 (4)	18:26 16 17:53 (12)	16:10 15:30
25	04:44 21:57	05:48 20:52	20:08 (2) 19:49	24 18:59 (4)	18:26 16 17:53 (12)	16:10 15:30
26	04:45 21:56	05:49 20:51	20:08 (2) 19:49	24 18:59 (4)	18:26 16 17:53 (12)	16:10 15:30
27	04:46 21:55	05:50 20:50	20:08 (2) 19:49	24 18:59 (4)	18:26 16 17:53 (12)	16:10 15:30
28	04:47 21:54	05:51 20:49	20:08 (2) 19:49	24 18:59 (4)	18:26 16 17:53 (12)	16:10 15:30
29	04:48 21:53	05:52 20:48	20:08 (2) 19:49	24 18:59 (4)	18:26 16 17:53 (12)	16:10 15:30
30	04:49 21:52	05:53 20:47	20:08 (2) 19:49	24 18:59 (4)	18:26 16 17:53 (12)	16:10 15:30
31	04:50 21:51	05:54 20:46	20:08 (2) 19:49	24 18:59 (4)	18:26 16 17:53 (12)	16:10 15:30
Potential sun hours	538	474	386	321	241	207
Total, worst case		268	366	439	90	
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		135	169	124	7	

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_Vestas162

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 15:10/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 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	17:56 (2) 18:05 (2)	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 22:19	05:11 21:33	06:17 20:14	07:20 18:50	17:53 (2) 18:07 (2)	07:30 16:29	08:34 15:36
3	09:00 15:42	08:17 16:44	07:08 17:50	17:16 (2) 17:20 (2)	06:42 19:59	05:23 21:06	04:24 22:05	05:13 21:31	06:19 20:12	07:22 18:48	17:51 (2) 18:07 (2)	07:32 16:27	08:36 15:35
4	08:59 15:43	08:15 16:47	07:05 17:52	17:15 (2) 17:22 (2)	06:39 20:01	05:20 21:08	04:23 22:07	05:15 21:28	06:21 20:09	07:25 18:45	17:50 (2) 18:08 (2)	07:34 16:25	08:38 15:34
5	08:59 15:45	08:12 16:49	07:02 17:55	17:14 (2) 17:25 (2)	06:36 20:04	05:18 21:10	04:22 22:08	05:17 21:26	06:23 20:06	07:27 18:42	17:50 (2) 18:08 (2)	07:37 16:22	08:40 15:33
6	08:58 15:46	08:10 16:52	07:00 17:57	17:14 (2) 17:28 (2)	06:34 20:06	05:15 21:12	04:21 22:09	05:19 21:24	06:25 20:03	07:29 18:39	17:49 (2) 18:07 (2)	07:39 16:20	08:41 15:32
7	08:57 15:48	08:08 16:54	06:57 17:59	17:13 (2) 17:30 (2)	06:31 20:08	05:13 21:14	04:20 22:11	05:21 21:22	06:27 20:01	07:31 18:37	17:49 (2) 18:04 (2)	07:41 16:18	08:43 15:32
8	08:56 15:49	08:06 16:56	06:54 18:02	17:13 (2) 17:31 (2)	06:28 20:10	05:11 21:16	04:19 22:12	05:23 21:19	06:29 19:58	07:33 18:34	17:49 (2) 18:01 (2)	07:43 16:16	08:44 15:31
9	08:56 15:51	08:03 16:59	06:52 18:04	17:13 (2) 17:31 (2)	06:25 20:12	05:09 21:19	04:18 22:13	05:26 21:17	06:32 19:55	07:35 18:31	17:50 (2) 17:59 (2)	07:46 16:14	08:46 15:30
10	08:55 15:53	08:01 17:01	06:49 18:06	17:13 (2) 17:30 (2)	06:23 20:15	05:06 21:21	04:18 22:14	05:28 21:14	06:34 19:52	07:38 18:28	17:50 (2) 17:56 (2)	07:48 16:12	08:47 15:30
11	08:54 15:55	07:59 17:03	06:46 18:08	17:15 (2) 17:29 (2)	06:20 20:17	05:04 21:23	04:17 22:15	05:30 21:12	06:36 19:49	07:40 18:26	17:51 (2) 17:53 (2)	07:50 16:09	08:49 15:30
12	08:53 15:56	07:56 17:06	06:43 18:11	17:16 (2) 17:27 (2)	06:17 20:19	05:02 21:25	04:17 22:16	05:32 21:10	06:38 19:47	07:42 18:23	17:53 (2) 18:02	07:53 16:07	08:50 15:29
13	08:52 15:58	07:54 17:08	06:41 18:13	17:19 (2) 17:23 (2)	06:14 20:21	05:00 21:27	04:16 22:17	05:34 21:07	06:40 19:44	07:44 18:20	17:55 (2) 18:04	07:55 16:05	08:51 15:29
14	08:51 16:00	07:52 17:11	06:38 18:15	17:23 (2) 20:23	06:12 20:23	04:58 21:29	04:16 22:18	05:36 21:05	06:42 19:41	07:46 18:17	17:57 (2) 18:03	07:57 16:03	08:52 15:29
15	08:49 16:02	07:49 17:13	06:35 18:17	20:23 20:26	06:09 21:31	04:56 22:18	04:15 22:06	05:38 21:02	06:44 19:38	07:49 18:15	17:59 (2) 18:02	07:59 16:02	08:53 15:29
16	08:48 16:04	07:47 17:15	06:32 18:20	20:26 20:28	06:06 21:33	04:53 22:19	04:15 22:05	05:40 21:00	06:46 19:35	07:51 18:12	18:02 18:04	08:02 16:00	08:54 15:29
17	08:47 16:06	07:44 17:18	06:29 18:22	20:28 20:30	06:04 21:35	04:51 22:20	04:15 22:03	05:43 20:57	06:48 19:32	07:53 18:10	18:04 18:06	08:04 15:58	08:55 15:29
18	08:45 16:08	07:42 17:20	06:27 18:24	20:30 20:32	06:01 21:37	04:49 22:20	04:15 22:02	05:45 20:54	06:51 19:30	07:55 18:07	18:06 18:08	08:06 15:56	08:56 15:29
19	08:44 16:10	07:39 17:22	06:24 18:26	20:32 20:35	05:58 21:39	04:48 22:20	04:15 22:00	05:47 20:52	06:53 19:27	07:58 18:04	18:07 18:08	08:08 15:54	08:57 15:29
20	08:42 16:13	07:37 17:25	06:21 18:28	20:35 20:37	05:56 21:41	04:46 22:21	04:15 21:58	05:49 20:49	06:55 19:24	08:00 18:02	18:09 18:10	08:10 15:52	08:58 15:29
21	08:41 16:15	07:34 17:27	06:18 18:31	20:37 20:39	05:53 21:43	04:44 22:21	04:15 21:57	05:51 20:47	06:57 19:21	08:02 17:59	18:11 18:12	08:13 15:51	08:58 15:30
22	08:39 16:17	07:32 17:29	06:15 18:33	20:40 20:41	05:50 21:45	04:42 22:21	04:15 21:55	05:53 20:44	06:59 19:18	08:04 17:56	18:12 18:13	08:15 15:49	08:59 15:30
23	08:38 16:19	07:29 17:32	06:13 18:35	20:41 20:43	05:48 21:47	04:40 22:21	04:15 21:53	05:55 20:41	07:01 19:16	08:07 17:54	18:14 18:15	08:17 15:48	08:59 15:31
24	08:36 16:21	07:26 17:34	06:10 18:37	20:43 20:46	05:45 21:49	04:38 22:22	04:15 21:51	05:58 20:39	07:03 19:13	08:09 17:51	18:15 18:16	08:19 15:46	09:00 15:31
25	08:34 16:24	07:24 17:36	06:07 18:39	20:46 20:48	05:43 21:51	04:37 22:21	04:16 21:49	06:00 20:36	07:05 19:10	07:11 16:49	18:16 18:17	08:21 15:45	09:00 15:32
26	08:32 16:26	07:21 17:39	06:04 18:42	20:49 20:50	05:40 21:52	04:35 22:21	04:16 21:47	06:02 20:33	07:07 19:07	07:14 16:46	18:17 18:18	08:23 15:43	09:00 15:33
27	08:31 16:28	07:19 17:41	06:01 18:44	20:51 20:52	05:37 21:54	04:34 22:21	04:17 21:45	06:04 20:31	07:10 19:04	07:16 16:44	18:19 18:20	08:25 15:42	09:01 15:34
28	08:29 16:30	07:16 17:43	05:59 18:46	20:53 20:54	05:35 21:56	04:32 22:21	04:17 21:43	06:06 20:28	07:12 19:02	07:18 16:41	18:21 18:22	08:27 15:41	09:01 15:34
29	08:27 16:33		06:56 19:48	20:55 20:57	05:32 21:58	04:31 22:21	04:18 21:41	06:08 20:25	07:14 18:59	07:20 16:39	18:23 18:24	08:29 15:39	09:01 15:35
30	08:25 16:35		06:53 19:50	20:58 20:59	05:30 21:59	04:29 22:20	04:19 21:39	06:10 20:23	07:16 18:56	07:23 16:37	18:24 18:25	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	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			135							137			
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			54							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) Minutes with flicker Last time (hh:mm) with flicker (WTG causing flicker last time)

Project:

Flickering_Valka_Vestas162

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 15:10/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 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
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
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
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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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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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SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 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	08:21	07:13	06:48	05:27	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	07:20	07:30	08:35
	15:40	16:42	17:48	19:57	21:04	22:04	22:20	21:33	20:15	18:50	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	06:36	05:18	04:22	04:23	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	05:15	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	20:03	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	06:54	06:28	05:11	04:19	04:27	05:23	06:30	07:33	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	15:30
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	17:03	18:08	20:17	21:23	22:15	22:12	21:12	19:50	18:26	16:10	15:30
12	08:53	07:57	06:43	06:17	05:02	04:16	04:33	05:32	06:38	07:42	07:53	08:50
	15:56	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	20:21	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	16:03	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	04:53	04:15	04:39	05:40	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	04:49	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	04:14	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	15:52	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	05:55	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	04:38	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	05:37	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	19:04	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	15:36
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_Vestas162

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 15:10/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Rigas iela 31A - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (603)
 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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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 21:38	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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SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Rigas iela 31B - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (740)
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
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_Vestas162

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 15:10/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 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	08:21	07:13	06:48	05:27	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	07:20	07:30	08:35
	15:40	16:42	17:48	19:57	21:04	22:04	22:20	21:33	20:15	18:50	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	06:36	05:18	04:22	04:23	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	05:15	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	20:03	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	06:54	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	15:30
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	17:03	18:08	20:17	21:23	22:15	22:12	21:12	19:50	18:26	16:10	15:30
12	08:53	07:57	06:43	06:17	05:02	04:16	04:33	05:32	06:38	07:42	07:53	08:50
	15:56	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	20:21	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	16:03	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	04:53	04:15	04:39	05:40	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	04:49	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	04:14	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	15:52	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	05:55	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	04:38	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	05:37	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	19:04	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	15:36
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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SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 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
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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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		

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Rigas iela 35 - Shadow Receptor: 1.0×1.0 Azimuth: 3.1° Slope: 90.0° (620)
 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		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_Vestas162

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 15:10/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Rigas iela 35A - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (615)
 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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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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SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 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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SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 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
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
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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		

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Rigas iela 40 - Shadow Receptor: 1.0×1.0 Azimuth: 3.1° Slope: 90.0° (601)
 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
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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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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												
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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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SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 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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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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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		

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Rigas iela 41 (94010020105003) - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (581) 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
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	Minutes with flicker		

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Rigas iela 42 - Shadow Receptor: 1.0×1.0 Azimuth: 3.1° Slope: 90.0° (641)
 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	06:55 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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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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SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Rigas iela 44 - Shadow Receptor: 1.0×1.0 Azimuth: 3.1° Slope: 90.0° (643)
 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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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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SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Rigas iela 45 - Shadow Receptor: 1.0×1.0 Azimuth: 3.1° Slope: 90.0° (578)
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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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 21:38	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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SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Rigas iela 45A - Shadow Receptor: 1.0×1.0 Azimuth: 3.1° Slope: 90.0° (573)
 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 20:04	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 18:08	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
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	04:50 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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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
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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 21:38	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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SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 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
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
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
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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
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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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		

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 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
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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		

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Rigas iela 47 - Shadow Receptor: 1.0×1.0 Azimuth: 3.1° Slope: 90.0° (557)
 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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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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SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Rigas iela 48 - Shadow Receptor: 1.0×1.0 Azimuth: 3.1° Slope: 90.0° (622)
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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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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SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Rigas iela 49 - Shadow Receptor: 1.0×1.0 Azimuth: 3.1° Slope: 90.0° (522)
 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 22:08	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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SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Rigas iela 50 - Shadow Receptor: 1.0×1.0 Azimuth: 3.1° Slope: 90.0° (616)
 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 22:08	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
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 21:38	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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SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Rigas iela 50A - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (614)
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 22:08	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
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
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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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SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Rigas iela 51 - Shadow Receptor: 1.0×1.0 Azimuth: 3.1° Slope: 90.0° (556)
 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 22:08	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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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
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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
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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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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SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Rigas iela 52 - Shadow Receptor: 1.0×1.0 Azimuth: 3.1° Slope: 90.0° (687)
 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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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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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
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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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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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SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Rigas iela 53 - Shadow Receptor: 1.0×1.0 Azimuth: 3.1° Slope: 90.0° (568)
 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	06:37 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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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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SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Rigas iela 54 - Shadow Receptor: 1.0×1.0 Azimuth: 3.1° Slope: 90.0° (756)
 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	06:36 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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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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SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Rigas iela 55 - Shadow Receptor: 1.0×1.0 Azimuth: 3.1° Slope: 90.0° (513)
 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 15:35
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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SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Rigas iela 56 - Shadow Receptor: 1.0×1.0 Azimuth: 3.1° Slope: 90.0° (731)
 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 20:04	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	05:55 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 21:38	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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SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Rigas iela 57 - Shadow Receptor: 1.0×1.0 Azimuth: 3.1° Slope: 90.0° (534)
 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
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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 16:06	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 16:41	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)	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		

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Rigas iela 58 - Shadow Receptor: 1.0×1.0 Azimuth: 3.1° Slope: 90.0° (751)
 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	07:34	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	06:36	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	05:15	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	15:30
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	17:03	18:08	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	16:03	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	04:53	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	15:52	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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SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Rigas iela 59 - Shadow Receptor: 1.0×1.0 Azimuth: 3.1° Slope: 90.0° (569)
 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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SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Rigas iela 60 - Shadow Receptor: 1.0×1.0 Azimuth: 3.1° Slope: 90.0° (748)
 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 20:04	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 18:08	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	04:54 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 21:38	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
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Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

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SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Rigas iela 61 - Shadow Receptor: 1.0×1.0 Azimuth: 3.1° Slope: 90.0° (570)
 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
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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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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
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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		

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Rigas iela 62 - Shadow Receptor: 1.0×1.0 Azimuth: 3.1° Slope: 90.0° (749)
 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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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_Vestas162

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 15:10/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Rigas iela 62A - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (695)
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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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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SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Rigas iela 63 - Shadow Receptor: 1.0×1.0 Azimuth: 3.1° Slope: 90.0° (535)
 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 16:11	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
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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SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 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	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	16:08	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	19:35	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	17:30	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	15:34
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)	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_Vestas162

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 15:10/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 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
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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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SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Rigas iela 65 - Shadow Receptor: 1.0×1.0 Azimuth: 3.1° Slope: 90.0° (560)
 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)
	Minutes with flicker		

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Rigas iela 67 - Shadow Receptor: 1.0×1.0 Azimuth: 3.1° Slope: 90.0° (551)
 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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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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SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Rigas iela 68 - Shadow Receptor: 1.0×1.0 Azimuth: 3.1° Slope: 90.0° (735)
 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
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		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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SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Rigas iela 69 - Shadow Receptor: 1.0×1.0 Azimuth: 3.1° Slope: 90.0° (531)
 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	04:22 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
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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 16:11	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	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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SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Rigas iela 70 - Shadow Receptor: 1.0×1.0 Azimuth: 3.1° Slope: 90.0° (794)
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
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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
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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		

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Rigas iela 71 - Shadow Receptor: 1.0×1.0 Azimuth: 3.1° Slope: 90.0° (509)
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 15:49	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
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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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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
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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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SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Rigas iela 72 - Shadow Receptor: 1.0×1.0 Azimuth: 3.1° Slope: 90.0° (727)
 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
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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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SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Rigas iela 73 - Shadow Receptor: 1.0×1.0 Azimuth: 3.1° Slope: 90.0° (563)
 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
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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	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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SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Rigas iela 74 - Shadow Receptor: 1.0×1.0 Azimuth: 3.1° Slope: 90.0° (755)
 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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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)	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		

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Rigas iela 75 - Shadow Receptor: 1.0×1.0 Azimuth: 3.1° Slope: 90.0° (510)
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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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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SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Rigas iela 76 - Shadow Receptor: 1.0×1.0 Azimuth: 3.1° Slope: 90.0° (747)
 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	06:47 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
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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
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												
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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		

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Rigas iela 78 - Shadow Receptor: 1.0×1.0 Azimuth: 3.1° Slope: 90.0° (693)
 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	04:22 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
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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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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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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
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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
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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
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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.												
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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_Vestas162

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 15:10/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 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 15:39	09:55 (1) 10:17 (1)	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 16:32
2	09:00 15:41	09:56 (1) 10:18 (1)	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 16:30
3	09:00 15:42	09:56 (1) 10:18 (1)	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 16:27
4	08:59 15:43	09:56 (1) 10:18 (1)	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	08:38 16:25
5	08:59 15:45	09:57 (1) 10:19 (1)	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 16:23
6	08:58 15:46	09:58 (1) 10:20 (1)	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 16:20
7	08:58 15:48	09:58 (1) 10:19 (1)	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	08:43 16:18
8	08:57 15:50	09:58 (1) 10:20 (1)	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 16:16
9	08:56 15:51	09:59 (1) 10:20 (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 16:14
10	08:55 15:53	10:00 (1) 10:20 (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 16:12
11	08:54 15:55	10:01 (1) 10:21 (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	08:49 16:10
12	08:53 15:57	10:01 (1) 10:20 (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 16:08
13	08:52 15:59	10:03 (1) 10:20 (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 16:06
14	08:51 16:00	10:03 (1) 10:20 (1)	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	08:53 16:04
15	08:50 16:02	10:05 (1) 10:20 (1)	07:49 17:13	06:35 18:18	06:09 20:26	04:56 21:32	04:15 22:19	04:37 22:06	05:39 21:02	06:44 19:38	07:49 18:15	08:54 16:02
16	08:48 16:04	10:06 (1) 10:19 (1)	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	08:55 16:00
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18	08:46 16:09	10:10 (1) 10:16 (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	08:56 15:56
19	08:44 16:11	10:11 (1) 10:16 (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 18:04	08:57 15:54
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22	08:40 16:17	10:14 (1) 10:16 (1)	07:32 17:30	06:16 18:33	05:51 20:42	04:42 21:45	04:15 22:22	04:49 21:55	05:53 20:44	06:59 19:19	08:05 17:57	08:59 15:49
23	08:38 16:19	10:15 (1) 10:16 (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 15:48
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31	08:23 16:38	10:23 (1) 10:16 (1)	07:12 17:53	05:51 19:53	05:28 20:59	04:28 22:01	04:18 22:21	05:07 21:38	06:13 20:20	07:17 18:56	07:25 16:34	08:32 15:38
Potential sun hours	227	262	365	429	515	539	539	475	386	321	241	207
Total, worst case	334										99	684
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	36										8	42

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		

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Rigas iela 82 - Shadow Receptor: 1.0×1.0 Azimuth: 3.1° Slope: 90.0° (752)
 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
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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
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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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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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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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
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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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SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Rigas iela 90 - Shadow Receptor: 1.0×1.0 Azimuth: 3.1° Slope: 90.0° (686)
 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	07:35 16:25	08:38 15:34
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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 16:31	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)
--------------	------------------	-----------------	----------------------	---------------------------------	--------------------------------	----------------------------------	---------------------------------

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 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.

	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 15:37
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 20:06	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	04:21 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	06:28 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 15:52	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	08:01 17:01	06:49 18:06	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	06:46 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	06:17 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 15:30
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	04:34 22:09	05:34 21:07	06:40 19:44	07:45 18:21	07:55 16:06	08:51 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	05:37 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	04:15 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	08:06 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	06:21 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	05:52 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 16:19	07:29 17:32	06:13 18:35	05:48 20:44	04:41 21:47	04:15 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 15:46	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 20:36	07:06 19:10	07:12 16:49	08:21 15:45	09:00 15:32
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 16:47	08:23 15:44	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 17:44	05:59 18:46	05:35 20:55	04:33 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	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 15:39	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)	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_Vestas162

SIA Estonian, Latvian & Lithuanian environment
Vilandes 3-6
LV-1010 Riga
0037167242411
Baiba / baiba.ozolina@environment.lv
Calculated:
15/01/2026 15:10/4.1.254

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Saulieš i - Shadow Receptor: 1.0 x 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

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
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 15:40	08:21 16:40	07:14 17:46	06:48 19:55	05:28 21:01	04:23 22:03	04:20 22:20	05:09 21:35	06:15 20:17	07:19 18:54	08:00 (5) 16:32	07:28 16:32	08:08 (6) 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	07:59 (5) 16:30	07:30 16:30	08:07 (6) 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	07:58 (5) 16:27	07:32 16:27	08:08 (6) 15:35
4	08:59 15:44	08:15 16:47	07:06 17:53	07:33 (5) 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	07:57 (5) 16:25	07:35 16:25	08:09 (6) 15:34
5	08:59 15:45	08:13 16:49	07:03 17:55	07:30 (5) 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	07:57 (5) 16:23	07:37 16:23	08:12 (6) 15:34
6	08:58 15:47	08:11 16:52	07:00 17:57	07:27 (5) 20:06	06:34 21:12	05:16 22:10	04:21 22:17	05:20 21:24	06:26 20:04	07:29 18:40	07:59 (5) 16:21	07:39 16:21	08:14 (6) 15:33
7	08:58 15:48	08:08 16:54	06:57 18:00	07:24 (5) 20:08	06:31 21:15	05:13 22:11	04:20 22:16	05:22 21:22	06:28 20:01	07:32 18:37	08:01 (5) 16:18	07:42 16:18	08:17 (6) 15:32
8	08:57 15:50	08:06 16:57	06:55 18:02	07:21 (5) 20:11	06:28 21:17	05:11 22:12	04:20 22:15	05:24 21:20	06:30 19:58	07:34 18:34	08:04 (5) 16:16	07:44 16:16	08:20 (6) 15:31
9	08:56 15:51	08:04 16:59	06:52 18:04	07:20 (5) 20:13	06:26 21:19	05:09 22:13	04:29 22:14	05:26 21:17	06:32 19:55	07:36 18:31	08:06 (5) 16:14	07:46 16:14	08:24 (6) 15:31
10	08:55 15:53	08:01 17:01	06:49 18:06	07:20 (5) 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	08:08 (5) 16:12	07:48 16:12	08:25 (6) 15:30
11	08:54 15:55	07:59 17:04	06:46 18:09	07:20 (5) 20:17	06:20 21:23	05:04 22:15	04:31 22:12	05:30 21:12	06:36 19:50	07:40 18:26	08:09 (5) 16:10	07:51 16:10	08:26 (6) 15:30
12	08:53 15:57	07:57 17:06	06:44 18:11	07:21 (5) 20:19	06:17 21:25	05:02 22:16	04:33 22:10	05:32 21:10	06:38 19:47	07:42 18:23	08:10 (5) 16:08	07:53 16:08	08:27 (6) 15:30
13	08:52 15:59	07:54 17:09	06:40 18:13	07:22 (5) 20:22	06:15 21:27	05:00 22:17	04:34 22:09	05:34 21:07	06:40 19:44	07:45 18:21	08:11 (5) 16:06	07:55 16:06	08:28 (6) 15:29
14	08:51 16:01	07:52 17:11	06:38 18:15	07:24 (5) 20:24	06:12 21:30	04:58 22:18	04:36 22:08	05:37 21:05	06:42 19:41	07:47 18:18	08:12 (5) 16:04	07:58 16:04	08:29 (6) 15:29
15	08:50 16:03	07:50 17:13	06:35 18:18	06:09 20:26	04:56 21:32	04:38 22:19	05:39 22:06	06:45 21:02	06:45 19:38	07:49 18:15	08:13 (5) 16:02	07:59 16:02	08:30 (6) 15:29
16	08:48 16:05	07:47 17:16	06:33 18:20	06:07 20:28	04:54 21:34	04:15 22:19	05:49 22:05	06:47 21:00	06:47 19:36	07:51 18:13	08:14 (5) 16:00	07:57 16:00	08:31 (6) 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	05:41 22:04	06:49 20:57	06:49 19:33	07:54 18:10	08:15 (5) 16:00	08:04 16:00	08:32 (6) 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	05:43 22:02	06:45 20:55	06:51 19:30	07:56 18:07	08:16 (5) 15:56	08:06 15:56	08:33 (6) 15:29
19	08:44 16:11	07:40 17:23	06:24 18:21	05:54 20:35	04:48 21:40	04:15 22:00	05:44 21:52	06:47 20:52	06:53 19:27	07:58 18:05	08:17 (5) 15:55	08:09 15:55	08:34 (6) 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	05:46 21:59	06:49 20:50	06:55 19:24	07:59 18:02	08:18 (5) 15:53	08:08 15:53	08:35 (6) 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	05:48 21:57	06:51 20:47	06:57 19:22	08:03 17:59	08:19 (5) 15:51	08:09 15:51	08:36 (6) 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	05:50 21:55	06:54 20:44	06:59 19:19	08:05 17:57	08:20 (5) 15:50	08:10 15:50	08:37 (6) 15:31
23	08:38 16:19	07:29 17:32	06:13 18:35	05:48 20:44	04:41 21:47	04:15 22:22	05:51 21:53	06:56 20:42	07:01 19:16	08:07 17:54	08:21 (5) 15:48	08:07 15:48	08:38 (6) 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	05:53 21:52	06:58 20:39	07:04 19:13	08:09 17:52	08:22 (5) 15:46	08:08 15:46	08:39 (6) 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	05:55 21:50	06:59 20:36	07:06 19:10	07:12 16:49	08:14 (6) 15:45	08:21 15:45	08:40 (6) 15:32
26	08:33 16:26	07:22 17:39	06:06 18:42	05:42 20:50	04:36 21:53	04:17 22:22	06:02 21:48	07:04 20:34	07:08 19:08	07:14 16:47	08:15 (6) 15:44	08:09 15:44	08:41 (6) 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	05:59 21:46	07:04 20:31	07:10 19:05	07:16 16:44	08:16 (6) 15:42	08:10 15:42	08:42 (6) 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 22:21	06:01 21:44	07:06 20:28	07:12 19:02	07:18 16:42	08:17 (6) 15:41	08:09 (6) 15:41	08:43 (6) 15:35
29	08:27 16:33	07:14 17:49	05:56 19:49	05:33 20:57	04:31 21:58	04:18 22:21	06:03 21:42	07:09 20:26	07:14 18:59	07:21 16:39	08:18 (6) 15:40	08:08 (6) 15:40	08:44 (6) 15:36
30	08:25 16:35	07:11 19:51	05:53 19:51	05:30 20:59	04:30 22:00	04:19 22:21	06:05 21:40	07:11 20:23	07:16 18:56	07:23 16:37	08:19 (5) 15:38	08:07 (6) 15:38	08:45 (6) 15:37
31	08:23 16:38	07:07 19:53	05:51 19:53	05:28 20:59	04:28 22:01	04:19 22:21	06:07 21:38	07:13 20:20	07:21 20:20	07:25 16:34	08:20 (6) 15:36	08:07 (6) 15:36	08:46 (6) 15:38
Potential sun hours	227	262	365	429	515	539	538	474	386	321	241	207	
Total, worst case		232	137						9	244	118		
Sun reduction		0.19	0.40						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		0.19	0.40						0.46	0.28	0.08		
Total, real		45	55						4	69	9		

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_Vestas162

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 15:10/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 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 15:40	08:21 16:40	16:02 (2) 17:46	07:13 17:46	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	07:27 16:32
2	09:00 15:40	08:19 16:42	16:00 (2) 17:48	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	07:30 16:29
3	09:00 15:42	08:17 16:44	16:00 (2) 17:50	07:08 17:50	06:42 19:59	05:23 21:06	04:24 22:05	04:21 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27
4	08:59 15:43	08:15 16:47	15:58 (2) 17:53	07:05 17:53	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	08:59 15:45	08:12 16:49	15:58 (2) 17:55	07:03 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	07:37 16:22
6	08:58 15:46	08:10 16:52	15:57 (2) 17:57	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	15:57 (2) 17:59	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
8	08:57 15:49	08:06 16:56	15:57 (2) 18:02	06:54 18:02	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	07:43 16:16
9	08:56 15:51	08:03 16:59	15:57 (2) 18:04	06:52 18:04	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	07:46 16:14
10	08:55 15:53	08:01 17:01	15:57 (2) 18:06	06:49 18:06	06:23 20:15	05:06 21:21	04:18 22:14	04:30 22:14	05:28 19:52	06:34 18:28	07:38 18:28	07:48 16:12
11	08:54 15:55	07:59 17:03	15:58 (2) 18:08	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
12	08:53 15:56	07:56 17:06	15:58 (2) 18:11	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
13	08:52 15:58	07:54 17:08	15:59 (2) 18:13	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
14	08:51 16:00	07:52 17:11	16:00 (2) 18:15	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
15	08:49 16:02	07:49 17:13	16:01 (2) 18:17	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 16:02
16	08:48 16:04	07:47 17:15	16:04 (2) 18:20	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
17	08:47 16:06	07:44 17:18	16:13 (2) 18:22	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 19:33	07:53 18:10	08:04 15:58
18	08:45 16:08	07:42 17:20	18:24 18:24	06:27 20:32	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	08:06 15:56
19	08:44 16:10	07:39 17:22	18:26 18:26	06:24 20:35	05:58 21:39	04:48 22:21	04:15 22:21	04:44 22:02	05:47 20:52	06:53 19:27	07:58 18:04	08:08 15:54
20	08:42 16:13	07:37 17:25	18:28 18:28	06:21 20:37	05:56 21:41	04:46 22:21	04:15 22:21	04:46 21:58	05:49 20:49	06:55 19:24	08:00 18:02	08:10 15:52
21	08:41 16:15	07:34 17:27	18:31 18:31	06:18 20:39	05:53 21:43	04:44 22:21	04:15 22:21	04:47 21:57	05:51 20:47	06:57 19:21	08:02 17:59	08:13 15:51
22	08:39 16:17	07:32 17:29	18:33 18:33	06:16 20:41	05:50 21:45	04:42 22:21	04:15 22:21	04:49 21:55	05:53 20:44	06:59 19:18	08:04 17:56	08:15 15:49
23	08:38 16:19	07:29 17:32	18:35 18:35	06:13 20:43	05:48 21:47	04:40 22:22	04:15 22:22	04:51 21:53	05:55 20:41	07:01 19:16	08:07 17:54	08:17 15:48
24	08:36 16:21	07:26 17:34	18:37 18:37	06:10 20:46	05:45 21:49	04:38 22:22	04:15 22:22	04:53 21:51	05:58 20:39	07:03 19:13	08:09 17:51	08:19 15:46
25	08:34 16:24	07:24 17:36	18:39 18:39	06:07 20:48	05:43 21:51	04:37 22:22	04:16 22:22	04:55 21:49	06:00 20:36	07:05 19:10	07:11 16:49	08:21 15:45
26	08:32 16:26	07:21 17:39	18:42 18:42	06:04 20:50	05:40 21:53	04:35 22:21	04:16 22:21	04:57 21:47	06:02 20:33	07:08 19:07	07:14 16:46	08:23 15:43
27	08:31 16:28	07:19 17:41	18:44 18:44	06:02 20:52	05:37 21:54	04:34 22:21	04:17 22:21	04:59 21:45	06:04 20:31	07:10 19:04	07:16 16:44	08:25 15:42
28	08:29 16:30	07:16 17:43	18:46 18:46	05:59 20:55	05:35 21:56	04:32 22:21	04:17 22:21	05:01 21:43	06:06 20:28	07:12 19:02	07:18 16:41	08:27 15:41
29	08:27 16:33		18:46 19:48	05:56 20:57	05:32 21:58	04:31 22:21	04:18 22:21	05:03 21:41	06:08 20:25	07:14 18:59	07:20 16:39	08:29 15:39
30	08:25 16:35		18:46 19:50	05:53 20:59	05:30 21:59	04:29 22:20	04:19 22:20	05:05 21:39	06:10 20:23	07:16 18:56	07:23 16:37	08:31 15:38
31	08:23 16:37		18:46 19:53	05:50 20:59	05:28 21:59	04:28 22:01	04:18 22:01	05:07 21:37	06:13 20:20	07:16 18:56	07:25 16:34	08:31 15:38
Potential sun hours	227	262	365	429	515	539	538	474	386	321	241	207
Total, worst case		250								101	149	
Sun reduction		0.19								0.28	0.08	
Oper. time red.		1.00								1.00	1.00	
Wind dir. red.		1.00								1.00	1.00	
Total reduction		0.19								0.28	0.08	
Total, real		49								29	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)

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 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	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	07:11 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	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	07:37 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 22:09	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 21:22	06:27 20:00	07:31 18:37	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 22:15	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	05:09 21:19	04:18 22:13	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	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	08:49 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 21:10	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 20:23	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	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 18:20	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	08:54 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 22:02	05:45 20:54	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	04:48 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	08:31 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	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 19:02	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 21:41	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	09:01 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		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)	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_Vestas162

SIA Estonian, Latvian & Lithuanian environment
Vilandes 3-6
LV-1010 Riga
0037167242411
Baiba / baiba.ozolina@environment.lv
Calculated:
15/01/2026 15:10/4.1.254

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Sedaskalni (94880100255001) - Shadow Receptor: 1.0 x 1.0 Azimuth: 3.1° Slope: 90.0° (584)
Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) []

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
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			12:42 (2)	08:21			07:13	06:48	05:28		04:27	04:20	05:09	06:15	07:18			07:27			08:33			14:12 (3)											
15:39	43		14:47 (3)	16:40			17:46	19:55	21:01	22:03	22:20	22:20	21:35	20:17	18:53			16:32			15:37	21		14:33 (3)											
09:00			12:43 (2)	08:19			07:11	06:45	05:25	04:25	04:21	05:11	06:11	06:17	07:20			07:30			08:35			12:36 (2)											
15:41	43		14:48 (3)	16:42			17:48	19:57	21:03	22:04	22:19	21:33	20:14	18:50				16:29			15:36	28		14:33 (3)											
09:00			12:44 (2)	08:17			07:08	06:42	05:23	04:24	04:22	05:13	06:19	07:23				07:32			08:36			12:34 (2)											
15:42	42		14:48 (3)	16:44			17:50	19:59	21:06	22:06	22:19	21:31	20:12	18:48				16:27			15:35	33		14:34 (3)											
08:59			12:44 (2)	08:15			07:05	06:39	05:20	04:23	04:23	05:15	06:21	07:25				07:34			08:38			12:33 (2)											
15:43	43		14:49 (3)	16:47			17:53	20:02	21:08	22:07	22:18	21:29	20:09	18:45				16:25			15:34	35		14:34 (3)											
08:59			12:45 (2)	08:12			07:03	06:36	05:18	04:22	04:24	05:17	06:23	07:27				07:37			08:40			12:33 (2)											
15:45	41		14:49 (3)	16:49			17:55	20:04	21:10	22:08	22:17	21:26	20:06	18:42				16:23			15:33	38		14:35 (3)											
08:58			12:46 (2)	08:10			07:00	06:34	05:16	04:21	04:25	05:19	06:25	07:29				07:39			08:41			12:33 (2)											
15:46	39		14:49 (3)	16:52			17:57	20:06	21:12	22:10	22:17	21:24	20:03	18:39				16:20			15:32	38		14:35 (3)											
08:57			12:48 (2)	08:08			06:57	06:31	05:13	04:20	04:26	05:21	06:27	07:31				07:41			08:43			12:32 (2)											
15:48	38		14:50 (3)	16:54			17:59	20:08	21:14	22:11	22:16	21:22	20:01	18:37				16:18			15:32	41		14:36 (3)											
08:57			12:49 (2)	08:06			06:54	06:28	05:11	04:19	04:27	05:23	06:30	07:33				07:44			08:45			12:33 (2)											
15:49	35		14:50 (3)	16:56			18:02	20:10	21:17	22:12	22:15	21:19	19:58	18:34				16:16			15:31	42		14:37 (3)											
08:56			12:51 (2)	08:04			06:52	06:25	05:09	04:19	04:28	05:26	06:32	07:36				07:46			08:46			12:32 (2)											
15:51	33		14:51 (3)	16:59			18:04	20:13	21:19	22:13	22:14	21:17	19:55	18:31				16:14			15:31	43		14:37 (3)											
08:55			12:54 (2)	08:01			06:49	06:23	05:06	04:18	04:30	05:28	06:34	07:38				07:48			08:47			12:32 (2)											
15:53	28		14:51 (3)	17:01	2	16:25 (1)	16:27 (1)	18:06	20:15	21:21	22:14	22:13	21:15	19:52	18:28			16:12			15:30	43		14:37 (3)											
08:54			14:30 (3)	07:59																															

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		

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 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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Flickering_Valka_Vestas162

SIA Estonian, Latvian & Lithuanian environment
Vilandes 3-6
LV-1010 Riga
0037167242411
Baiba / baiba.ozolina@environment.lv
Calculated:
15/01/2026 15:10/4.1.254

Calculation: Flickering_Valke_Vestas162 Shadow receptor: Sietini - Shadow Receptor: 1.0 x 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

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
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	14:23 (4)	08:21	07:13	06:48	05:27	04:27	04:20	05:09	06:15	07:18	07:27	08:33
	15:39	22	14:45 (4)	16:40	17:46	19:55	21:01	22:02	22:20	21:35	20:17	18:53	14:10 (4)
2	09:00	14:23 (4)	08:19	07:11	06:45	05:25	04:25	04:21	05:11	06:17	07:20	07:30	14:30 (4)
	15:41	22	14:45 (4)	16:42	17:48	19:57	21:03	22:04	22:19	21:33	20:14	18:50	14:10 (4)
3	09:00	14:24 (4)	08:17	07:08	06:42	05:23	04:24	04:21	05:13	06:19	07:23	07:32	14:10 (4)
	15:42	23	14:47 (4)	16:44	17:50	19:59	21:06	22:05	22:19	21:31	20:12	18:48	14:32 (4)
4	08:59	14:25 (4)	08:15		16:05 (2)	07:05	06:39	05:20	04:23	04:22	05:15	06:21	14:11 (4)
	15:43	22	14:47 (4)	16:47	6	16:11 (2)	17:53	20:01	21:08	22:07	22:18	21:28	14:32 (4)
5	08:59	14:25 (4)	08:12		16:04 (2)	07:03	06:36	05:18	04:22	04:24	05:17	06:23	14:11 (4)
	15:45	22	14:47 (4)	16:49	10	16:14 (2)	17:55	20:04	21:10	22:08	22:17	21:26	14:33 (4)
6	08:58	14:25 (4)	08:10		16:02 (2)	07:00	06:34	05:15	04:21	04:25	05:19	06:25	14:11 (4)
	15:46	22	14:47 (4)	16:52	14	16:16 (2)	17:57	20:06	21:12	22:09	22:16	21:24	14:33 (4)
7	08:57	14:26 (4)	08:08		16:02 (2)	06:57	06:31	05:13	04:20	04:26	05:21	06:27	14:12 (4)
	15:48	22	14:48 (4)	16:54	17	16:19 (2)	17:59	20:08	21:14	22:11	22:16	21:22	14:34 (4)
8	08:57	14:27 (4)	08:06		16:01 (2)	06:54	06:28	05:11	04:19	04:27	05:23	06:29	14:13 (4)
	15:49	21	14:48 (4)	16:56	21	16:22 (2)	18:02	20:10	21:16	22:12	22:15	21:19	14:35 (4)
9	08:56	14:27 (4)	08:03		16:00 (2)	06:52	06:25	05:09	04:18	04:28	05:26	06:32	14:12 (4)
	15:51	21	14:48 (4)	16:59	25	16:25 (2)	18:04	20:13	21:19	22:13	22:14	21:17	14:35 (4)
10	08:55	14:28 (4)	08:01		16:00 (2)	06:49	06:23	05:06	04:18	04:30	05:28	06:34	14:13 (4)
	15:53	21	14:49 (4)	17:01	25	16:25 (2)	18:06	20:15	21:21	22:14	22:12	21:14	14:36 (4)
11	08:54	14:28 (4)	07:59		16:00 (2)	06:46	06:20	05:04	04:17	04:31	05:30	06:36	14:13 (4)
	15:55	20	14:48 (4)	17:03	26	16:26 (2)	18:08	20:17	21:23	22:15	22:11	21:12	14:35 (4)
12	08:53	14:29 (4)	07:56		15:59 (2)	06:43	06:17	05:02	04:17	04:33	05:32	06:38	14:14 (4)
	15:57	20	14:49 (4)	17:06	26	16:25 (2)	18:11	20:19	21:25	22:16	22:10	21:10	14:37 (4)
13	08:52	14:30 (4)	07:54		16:00 (2)	06:41	06:16	05:00	04:16	04:34	05:35	06:41	14:15 (4)
	15:58	18	14:48 (4)	17:08	26	16:26 (2)	18:13	20:21	21:27	22:17	22:09	21:07	14:37 (4)
14	08:51	14:31 (4)	07:52		16:00 (2)	06:38	06:12	04:58	04:16	04:36	05:36	06:42	14:15 (4)
	16:00	18	14:49 (4)	17:11	25	16:25 (2)	18:15	20:24	21:29	22:18	22:08	21:05	14:37 (4)
15	08:49	14:32 (4)	07:49		16:00 (2)	06:35	06:09	04:56	04:15	04			

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)

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Silkalni - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (774)
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 21:02	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	09:00 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 22:21	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	04:15 22:22	04:52 21:54	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 15:46	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	04:18 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		06:54 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)	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_Vestas162

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 15:10/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 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	08:21	08:54 (6)	07:14	06:48	05:28
	15:40	16:40	10 09:04 (6)	17:46	19:55	21:01
2	09:00	08:19	08:51 (6)	07:11	06:45	05:25
	15:41	16:42	13 09:04 (6)	17:48	2 07:38 (5)	19:57
3	09:00	08:17	08:49 (6)	07:08	07:35 (5)	06:42
	15:42	16:45	17 09:06 (6)	17:51	6 07:41 (5)	20:00
4	08:59	08:15	08:46 (6)	07:06	07:33 (5)	06:40
	15:44	16:47	20 09:06 (6)	17:53	10 07:43 (5)	20:02
5	08:59	08:13	08:46 (6)	07:03	07:30 (5)	06:37
	15:45	16:49	21 09:07 (6)	17:55	13 07:43 (5)	20:04
6	08:58	08:11	08:46 (6)	07:00	07:27 (5)	06:34
	15:47	16:52	22 09:08 (6)	17:57	16 07:43 (5)	20:06
7	08:58	08:08	08:46 (6)	06:57	07:24 (5)	06:31
	15:48	16:54	21 09:07 (6)	18:00	19 07:43 (5)	20:08
8	08:57	08:06	08:46 (6)	06:55	07:24 (5)	06:28
	15:50	16:57	22 09:08 (6)	18:02	19 07:43 (5)	20:11
9	08:56	08:04	08:46 (6)	06:52	07:24 (5)	06:26
	15:51	16:59	21 09:07 (6)	18:04	19 07:43 (5)	20:13
10	08:55	08:01	08:47 (6)	06:49	07:25 (5)	06:23
	15:53	17:01	21 09:08 (6)	18:06	17 07:42 (5)	20:15
11	08:54	07:59	08:47 (6)	06:46	07:25 (5)	06:20
	15:55	17:04	20 09:07 (6)	18:09	16 07:41 (5)	20:17
12	08:53	07:57	08:49 (6)	06:44	07:26 (5)	06:17
	15:57	17:06	17 09:06 (6)	18:11	13 07:39 (5)	20:19
13	08:52	07:54	08:49 (6)	06:41	07:28 (5)	06:15
	15:59	17:09	16 09:05 (6)	18:13	8 07:36 (5)	20:22
14	08:51	07:52	08:51 (6)	06:38	06:12	04:58
	16:01	17:11	12 09:03 (6)	18:15	20:24	21:30
15	08:50	07:50	08:54 (6)	06:35	06:09	04:56
	16:03	17:13	6 09:00 (6)	18:18	20:26	21:32
16	08:48	07:47		06:33	06:07	04:54
	16:05	17:16		18:20	20:28	21:34
17	08:47	07:45		06:30	06:04	04:52
	16:07	17:18		18:22	20:31	21:36
18	08:46	07:42		06:27	06:01	04:50
	16:09	17:20		18:24	20:33	21:38
19	08:44	07:40		06:24	05:59	04:48
	16:11	17:23		18:27	20:35	21:40
20	08:43	07:37		06:21	05:56	04:46
	16:13	17:25		18:29	20:37	21:42
21	08:41	07:35		06:19	05:53	04:44
	16:15	17:27		18:31	20:39	21:44
22	08:40	07:32		06:16	05:51	04:42
	16:17	17:30		18:33	20:42	21:46
23	08:38	07:29		06:13	05:48	04:41
	16:19	17:32		18:35	20:44	21:47
24	08:36	07:27		06:10	05:45	04:39
	16:22	17:34		18:38	20:46	21:49
25	08:35	07:24		06:07	05:43	04:37
	16:24	17:37		18:40	20:48	21:51
26	08:33	07:22		06:05	05:40	04:36
	16:26	17:39		18:42	20:50	21:53
27	08:31	07:19		06:02	05:38	04:34
	16:28	17:41		18:44	20:53	21:55
28	08:29	07:16		05:59	05:35	04:32
	16:31	17:44		18:46	20:55	21:56
29	08:27			06:56	05:33	04:31
	16:33			19:49	20:57	21:58
30	08:25	08:58 (6)		06:53	05:30	04:30
	16:35	1 08:59 (6)		19:51	20:59	22:00
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	7	259	158			
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	50	64			

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_Vestas162

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 15:10/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 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	08:06 (5)	07:28
	22:20	21:35	20:17	18:54	11 08:17 (5)	16:32
2	04:21	05:11	06:17	07:21	08:04 (5)	07:30
	22:20	21:33	20:15	18:51	14 08:18 (5)	16:30
3	04:22	05:13	06:19	07:23	08:03 (5)	07:32
	22:19	21:31	20:12	18:48	17 08:20 (5)	16:27
4	04:23	05:15	06:21	07:25	08:02 (5)	07:35
	22:18	21:29	20:09	18:45	18 08:20 (5)	16:25
5	04:24	05:17	06:23	07:27	08:01 (5)	07:37
	22:18	21:27	20:06	18:42	19 08:20 (5)	16:23
6	04:25	05:20	06:26	07:29	08:00 (5)	07:39
	22:17	21:24	20:04	18:40	20 08:20 (5)	16:21
7	04:26	05:22	06:28	07:32	08:01 (5)	07:42
	22:16	21:22	20:01	18:37	18 08:19 (5)	16:18
8	04:27	05:24	06:30	07:34	08:04 (5)	07:44
	22:15	21:20	19:58	18:34	15 08:19 (5)	16:16
9	04:29	05:26	06:32	07:36	08:06 (5)	07:46
	22:14	21:17	19:55	18:31	12 08:18 (5)	16:14
10	04:30	05:28	06:34	07:38	08:08 (5)	07:48
	22:13	21:15	19:53	18:29	8 08:16 (5)	16:12
11	04:31	05:30	06:36	07:40	08:11 (5)	07:51
	22:12	21:12	19:50	18:26	4 08:15 (5)	16:10
12	04:33	05:32	06:38	07:42		07:53
	22:10	21:10	19:47	18:23		16:08
13	04:34	05:34	06:40	07:45		07:55
	22:09	21:07	19:44	18:21		16:06
14	04:36	05:37	06:42	07:47		07:58
	22:08	21:05	19:41	18:18		16:04
15	04:38	05:39	06:45	07:49		08:00
	22:06	21:02	19:38	18:15		16:02
16	04:39	05:41	06:47	07:51		08:02
	22:05	21:00	19:36	18:13		16:00
17	04:41	05:43	06:49	07:54		08:04
	22:04	20:57	19:33	18:10		15:58
18	04:43	05:45	06:51	07:56		08:06
	22:02	20:55	19:30	18:07		15:56
19	04:44	05:47	06:53	07:58		08:09
	22:00	20:52	19:27	18:05		15:55
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		08:19
	21:52	20:39	19:13	17:52		15:46
25	04:55	06:00	07:06	07:12		08:21
	21:50	20:36	19:10	16:49		15:45
26	04:57	06:02	07:08	07:14		08:23
	21:48	20:34	19:08	16:47		15:44
27	04:59	06:04	07:10	07:16	08:23 (6)	08:25
	21:46	20:31	19:05	16:44	8 08:31 (6)	15:42
28	05:01	06:06	07:12	07:18	08:20 (6)	08:27
	21:44	20:28	19:02	16:42	13 08:33 (6)	15:41
29	05:03	06:09	07:14	07:21	08:19 (6)	08:29
	21:42	20:26	18:59	16:39	16 08:35 (6)	15:40
30	05:05	06:11	07:16	07:23	08:17 (6)	08:31
	21:40	20:23	18:56	16:37	18 08:35 (6)	15:38
31	05:07	06:13		07:25	08:17 (6)	
	21:38	20:20		16:34	19 08:36 (6)	
Potential sun hours	538	474	386	321	241	207
Total, worst case			4	230	190	
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			2	65	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)	Last time (hh:mm) with flicker	(WTG causing flicker last time)

Project:

Flickering_Valka_Vestas162

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 15:10/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Sviestini - Shadow Receptor: 1.0×1.0 Azimuth: 3.1° Slope: 90.0° (471)
 Sunshine probability S (Average daily sunshine hours) []

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

No operational time reduction. It is assumed 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
2	09:00 15:40	08:19 16:42	07:11 17:48	17:15 (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	07:30 16:29
3	09:00 15:42	08:17 16:44	07:08 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	07:32 16:27
4	08:59 15:43	08:15 16:47	07:05 17:52	17:12 (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	07:34 16:25
5	08:59 15:45	08:12 16:49	07:02 17:55	17:11 (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	07:37 16:22
6	08:58 15:46	08:10 16:52	07:00 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	07:39 16:20
7	08:57 15:48	08:08 16:54	06:57 17:59	17:11 (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	07:41 16:18
8	08:56 15:49	08:06 16:56	06:54 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 19:58	07:33 18:34	07:43 16:16
9	08:56 15:51	08:03 16:59	06:52 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 19:55	07:35 18:31	07:46 16:14
10	08:55 15:53	08:01 17:01	06:49 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 19:52	07:38 18:28	07:48 16:12
11	08:54 15:55	07:59 17:03	06:46 18:08	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	07:50 16:09
12	08:53 15:56	07:56 17:06	06:43 18:11	17:17 (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	07:53 16:07
13	08:52 15:58	07:54 17:08	06:41 18:13	17:22 (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	07:55 16:05
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 22:07	05:36 21:05	06:42 19:41	07:46 18:17	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	04:37 22:06	05:38 21:02	06:44 19:38	07:49 18:15	07:59 16:01
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
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	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	04:42 22:02	05:45 20:54	06:51 19:30	07:55 18:07	08:06 15:56
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 19:27	07:58 18:04	08:08 15:54
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
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
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
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
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	08:19 15:46
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
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	07:14 16:46	08:23 15:43
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	08:25 15:42
28	08:30 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	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	05:03 21:41	06:08 20:25	07:14 18:59	07:20 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	05:05 21:39	06:10 20:23	07:16 18:56	07:23 16:37	08:31 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	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			135							132		
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			54							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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SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 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	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	07:11 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	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 16:52	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 21:22	06:27 20:00	07:31 18:37	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	05:09 21:19	04:18 22:13	04:28 22:13	05:26 21:17	06:32 19:55	07:35 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 22:12	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	08:49 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 21:10	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 20:23	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	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 16:02	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	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 22:02	05:45 20:54	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	04:48 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	04:39 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
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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	08:31 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	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 19:02	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 21:41	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	09:01 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		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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SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 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	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	07:11 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	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 16:52	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 21:22	06:27 20:00	07:31 18:37	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	05:09 21:19	04:18 22:13	04:28 22:13	05:26 21:17	06:32 19:55	07:35 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 22:12	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	08:49 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 21:10	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 20:23	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	08:52 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 21:39	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
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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	04:39 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
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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	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 16:37	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	06:12 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)	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_Vestas162

SIA Estonian, Latvian & Lithuanian environment
Vilandes 3-6
LV-1010 Riga
0037167242411
Baiba / baiba.ozolina@environment.lv
Calculated:
15/01/2026 15:10/4.1.254

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Seli Maja 18 - Shadow Receptor: 1.0×1.0 Azimuth: 3.1° Slope: 90.0° (464)
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 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	18:10 (2) 18:22 (2)	07:27 16:32	15:53 (4) 15:56 (4)	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 22:19	05:11 21:33	06:17 20:14	07:20 18:50	18:10 (2) 18:19 (2)	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	18:11 (2) 18:16 (2)	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	18:12 (2) 18:13 (2)	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		07:37 16:22		08:40 15:33
6	08:58 15:46	08:10 16:52	07:00 17:57	06:34 20:06	05:10 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 21:22	06:27 20:01	07:31 18:37		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 22:15	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	05:09 21:19	04:18 22:13	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	08:55 15:53	08:01 17:01	16:23 (4) 18:06	06:49 17:36 (2)	05:06 20:15	04:18 21:21	04:30 22:14	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	16:22 (4) 18:08	06:46 17:39 (2)	05:04 20:17	04:17 21:23	04:31 22:15	05:30 22:11	06:36 19:49	07:40 18:26		07:50 16:09		08:49 15:30
12	08:53 15:56	07:56 17:06	16:21 (4) 18:11	06:43 17:32 (2)	05:02 20:19	04:17 21:25	04:33 22:16	05:32 22:10	06:38 19:47	07:42 18:23		07:53 16:07		08:50 15:29
13	08:51 15:58	07:54 17:08	16:21 (4) 18:13	06:41 17:44 (2)	05:00 20:21	04:16 21:27	04:34 22:17	05:40 22:09	07:44 19:44	07:45 18:20		07:54 16:05		08:51 15:29
14	08:51 16:00	07:52 17:11	16:21 (4) 18:15	06:38 17:46 (2)	04:58 20:23	04:16 21:29	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	16:20 (4) 18:17	06:35 17:48 (2)	04:56 20:26	04:15 21:31	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	08:48 16:04	07:47 17:15	16:21 (4) 18:20	06:32 17:29 (2)	04:53 20:28	04:15 21:33	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	08:47 16:06	07:44 17:18	16:21 (4) 18:22	06:29 17:47 (2)	04:51 20:30	04:15 21:35	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	08:45 16:08	07:42 17:20	16:21 (4) 18:24	06:27 17:31 (2)	04:49 20:32	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)

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Sili - Shadow Receptor: 1.0×1.0 Azimuth: 3.1° Slope: 90.0° (446)
 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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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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Project:

Flickering_Valka_Vestas162

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 15:10/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Taigas - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (466)
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									
2	09:00 15:40	08:19 16:42	07:11 17:48									
3	09:00 15:42	08:17 16:44	07:08 17:50	17:19 (2)								
4	08:59 15:43	08:15 16:47	07:05 17:52	17:17 (2)								
5	08:59 15:45	08:12 16:49	07:02 17:55	17:15 (2)								
6	08:58 15:46	08:10 16:52	07:00 17:57	17:14 (2)								
7	08:57 15:48	08:08 16:54	06:57 17:59	17:14 (2)								
8	08:56 15:49	08:06 16:56	06:54 18:02	17:14 (2)								
9	08:56 15:51	08:03 16:59	06:52 18:04	17:14 (2)								
10	08:55 15:53	08:01 17:01	06:49 18:06	17:14 (2)								
11	08:54 15:55	07:59 17:03	06:46 18:08	17:15 (2)								
12	08:53 15:56	07:56 17:06	06:43 18:11	17:16 (2)								
13	08:52 15:58	07:54 17:08	06:41 18:13	17:17 (2)								
14	08:51 16:00	07:52 17:11	06:38 18:15	17:28 (2)								
15	08:49 16:02	07:49 17:13	06:35 18:17	20:23								
16	08:48 16:04	07:47 17:15	06:32 18:20	20:26								
17	08:47 16:06	07:44 17:18	06:29 18:22	20:28								
18	08:45 16:08	07:42 17:20	06:27 18:24	20:30								
19	08:44 16:10	07:39 17:22	06:24 18:26	20:32								
20	08:42 16:13	07:37 17:25	06:21 18:28	20:35								
21	08:41 16:15	07:34 17:27	06:18 18:31	20:38								
22	08:39 16:17	07:32 17:29	06:15 18:33	20:41								
23	08:38 16:19	07:29 17:32	06:13 18:35	20:44								
24	08:36 16:21	07:26 17:34	06:10 18:37	20:47								
25	08:34 16:24	07:24 17:36	06:07 18:39	20:50								
26	08:32 16:26	07:21 17:39	06:04 18:42	20:53								
27	08:31 16:28	07:19 17:41	06:01 18:44	20:56								
28	08:29 16:30	07:16 17:43	05:59 18:46	20:59								
29	08:27 16:33		06:56 19:48									
30	08:25 16:35		06:53 19:50									
31	08:23 16:37		06:50 19:53									
Potential sun hours	227	262	365	429	515	539	538	474	386	321	241	207
Total, worst case			140						8	135		
Sun reduction			0.40						0.46	0.28		
Oper. time red.			1.00						1.00	1.00		
Wind dir. red.			1.00						1.00	1.00		
Total reduction			0.40						0.46	0.28		
Total, real			56						4	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)
	Minutes with flicker		

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 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
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	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 21:10	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 18:18	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 22:22	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 20:41	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 16:31	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	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_Vestas162

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 15:10/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 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	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	07:35	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	21:26	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	21:20	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	16:06	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	19:36	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	07:39	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	17:30	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	16:41	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)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
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Project:

Flickering_Valka_Vestas162

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 15:10/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Valdemara iela 13 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (706)
 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	06:46 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		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_Vestas162

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 15:10/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Valdemarskaja 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
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
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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_Vestas162

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 15:10/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Valdemara iela 1A - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (754)
 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
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
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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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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
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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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SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Valdemara iela 3 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (742)
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												

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SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 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
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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 22:22	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
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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	07:11 16:49	08:21 15:45	09:00 15:32
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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												
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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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SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Valdemara iela 7 (94010040129001) - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (711) 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
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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.												
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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		

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Valdemara iela 7 (94010040129004) - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (712) 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
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Table layout: For each day in each month the following matrix apply

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	Minutes with flicker		

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Valdemara iela 9 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (750)
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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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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SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Valmieras iela 11 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (691)
 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 21:26	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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SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Valmieras iela 3 - Shadow Receptor: 1.0×1.0 Azimuth: 3.1° Slope: 90.0° (763) 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
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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)	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_Vestas162

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 15:10/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 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
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 15:30
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
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_Vestas162

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 15:10/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 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
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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SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Valmieras iela 7A - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (724)
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
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_Vestas162

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 15:10/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 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
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	2.93	0.63	0.41

No operational time reduction. It is assumed 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
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_Vestas162

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 15:10/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Vanagi - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (771)
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	10:47 (6) 10:50 (6)	08:21 16:40	09:19 (5) 17:46	07:14 19:55	06:48 21:01	05:28 22:03	04:27 22:20	04:20 21:35	05:09 20:17	06:15 18:53	07:19 16:32
2	09:00 15:41	08:19 16:42	09:19 (5) 17:48	07:11 19:57	06:45 21:04	05:25 22:04	04:26 22:20	04:21 21:33	05:11 20:15	06:17 18:51	07:21 16:30	07:30 15:36
3	09:00 15:42	08:17 16:45	09:21 (5) 17:50	07:08 19:50	06:42 21:06	05:23 22:06	04:24 22:19	04:22 21:31	05:13 20:12	06:19 18:48	07:23 16:27	07:32 15:35
4	08:59 15:43	08:15 16:47	09:22 (5) 17:53	07:06 19:52	06:39 21:08	05:20 22:07	04:23 22:18	04:23 21:29	05:15 20:09	06:21 18:45	07:25 16:25	07:35 15:34
5	08:59 15:45	08:13 16:49	09:25 (5) 17:55	07:03 19:54	06:37 21:10	05:18 22:09	04:22 22:18	04:24 21:27	05:17 20:06	06:23 18:42	07:27 16:23	07:37 15:33
6	08:58 15:46	08:11 16:52	09:26 (5) 17:56	07:00 19:55	06:34 21:12	05:16 22:10	04:21 22:17	04:25 21:24	05:19 20:04	06:26 18:40	07:29 16:21	07:39 15:33
7	08:58 15:48	08:08 16:54	09:27 (5) 17:57	06:57 19:56	06:31 21:15	05:13 22:11	04:20 22:16	04:26 21:22	05:22 20:01	06:28 18:37	07:31 16:18	07:41 15:32
8	08:57 15:50	08:06 16:57	09:28 (5) 18:02	06:55 19:58	06:28 21:17	05:11 22:12	04:19 22:15	04:27 21:20	05:24 20:00	06:30 18:34	07:34 16:16	07:44 15:31
9	08:56 15:51	08:04 16:59	09:29 (5) 18:04	06:52 19:59	06:26 21:19	05:09 22:13	04:19 22:14	04:29 21:17	05:26 20:00	06:32 18:31	07:36 16:14	07:46 15:31
10	08:55 15:53	08:01 17:01	09:30 (5) 18:06	06:49 19:58	06:23 21:21	05:07 22:14	04:18 22:13	04:30 21:15	05:28 20:00	06:34 18:29	07:38 16:12	07:48 15:30
11	08:54 15:55	07:59 17:04	09:31 (5) 18:09	06:46 19:57	06:20 21:23	05:04 22:15	04:17 22:12	05:30 21:12	06:36 20:00	06:40 18:26	07:40 16:10	07:51 15:30
12	08:53 15:57	07:57 17:06	09:32 (5) 18:11	06:44 19:58	06:17 21:25	05:02 22:16	04:17 22:10	05:32 21:10	06:38 20:00	07:42 18:23	07:53 16:08	08:04 15:29
13	08:52 15:59	07:54 17:08	09:33 (5) 18:13	06:41 19:59	06:15 21:27	05:00 22:17	04:16 22:09	05:34 21:07	06:40 20:00	07:45 18:20	07:55 16:06	08:05 15:29
14	08:51 16:01	07:52 17:11	09:34 (5) 18:15	06:38 19:59	06:12 21:30	04:58 22:18	04:16 22:08	05:36 21:05	06:42 20:00	07:47 18:18	07:57 16:04	08:07 15:29
15	08:50 16:03	07:50 17:13	09:35 (5) 18:16	06:35 19:59	06:09 21:32	04:56 22:19	04:15 22:06	05:39 21:02	06:45 20:00	07:49 18:15	07:59 16:02	08:09 15:29
16	08:48 16:05	09:26 (5) 17:16	09:36 (5) 18:17	06:33 19:59	06:07 21:34	04:54 22:19	04:15 22:05	05:41 21:00	06:47 20:00	07:51 18:12	08:02 16:00	08:12 15:29
17	08:47 16:07	09:24 (5) 17:18	09:37 (5) 18:18	06:30 19:59	06:04 21:36	04:52 22:20	04:15 22:03	05:43 20:57	06:49 19:33	07:53 18:10	08:04 15:58	08:14 15:29
18	08:46 16:09	09:23 (5) 17:20	09:38 (5) 18:19	06:27 19:59	06:01 21:38	04:50 22:20	04:15 22:02	05:45 20:55	06:51 19:30	07:56 18:07	08:06 15:56	08:16 15:29
19	08:44 16:11	09:21 (5) 17:23	09:39 (5) 18:21	06:24 19:59	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 15:54	08:19 15:29
20	08:43 16:13	09:19 (5) 17:25	09:40 (5) 18:23	06:21 19:59	05:56 21:42	04:46 22:21	04:15 22:00	05:49 20:52	06:55 19:27	08:00 18:05	08:11 15:54	08:21 15:29
21	08:41 16:15	09:17 (5) 17:27	09:41 (5) 18:25	06:19 19:59	05:53 21:44	04:44 22:22	04:15 22:00	05:51 20:47	06:57 19:22	08:02 17:59	08:13 15:51	08:23 15:29
22	08:40 16:17	09:16 (5) 17:30	09:42 (5) 18:26	06:16 19:59	05:51 21:46	04:42 22:22	04:15 22:00	05:54 20:44	06:59 19:19	08:05 17:57	08:15 15:49	08:25 15:29
23	08:38 16:19	09:15 (5) 17:32	09:43 (5) 18:27	06:13 19:59	05:48 21:47	04:40 22:22	04:15 22:00	05:56 20:42	07:01 19:16	08:07 17:54	08:17 15:48	08:27 15:29
24	08:36 16:22	09:14 (5) 17:34	09:44 (5) 18:28	06:10 19:59	05:45 21:49	04:39 22:22	04:16 22:00	05:58 20:39	07:04 19:13	08:09 17:52	08:19 15:46	08:29 15:29
25	08:35 16:24	09:13 (5) 17:37	09:45 (5) 18:29	06:07 19:59	05:43 21:51	04:37 22:22	04:16 22:00	06:00 20:36	07:06 19:10	07:12 16:49	08:21 15:45	08:31 15:29
26	08:33 16:26	09:12 (5) 17:40	09:46 (5) 18:30	06:05 19:59	05:40 21:53	04:35 22:22	04:16 22:00	06:02 20:34	07:08 19:07	07:14 16:47	08:23 15:43	08:33 15:29
27	08:31 16:28	09:11 (5) 17:41	09:47 (5) 18:31	06:02 19:59	05:38 21:55	04:34 22:22	04:17 22:00	06:04 20:31	07:10 19:05	07:16 16:44	08:25 15:42	08:35 15:29
28	08:29 16:31	09:10 (5) 17:44	09:48 (5) 18:32	05:59 19:59	05:35 21:56	04:32 22:21	04:18 22:00	06:06 20:28	07:12 19:02	07:18 16:42	08:27 15:41	08:37 15:29
29	08:27 16:33	09:09 (5) 17:46	09:49 (5) 18:33	05:56 19:59	05:33 21:58	04:31 22:21	04:18 22:00	06:09 20:26	07:14 18:59	07:21 16:39	08:29 15:40	08:39 15:29
30	08:25 16:35	09:08 (5) 17:48	09:50 (5) 18:34	05:53 19:59	05:30 21:59	04:29 22:21	04:19 22:00	06:11 20:23	07:16 18:56	07:23 16:37	08:31 15:38	08:41 15:29
31	08:23 16:37	09:07 (5) 17:50	09:51 (5) 18:35	05:51 19:59	05:28 22:01	04:28 22:21	04:19 22:00	06:13 20:20	07:17 18:56	07:25 16:34	08:33 15:38	08:43 15:29
Potential sun hours	227	262	365	429	515	539	538	475	386	321	241	207
Total, worst case	295	77										207
Sun reduction	0.11	0.19									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	0.11	0.19									0.08	0.06
Total, real	32	15									29	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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SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Vecrubeni - Shadow Receptor: 1.0×1.0 Azimuth: 3.1° Slope: 90.0° (507)
 Sunshine probability S (Average daily sunshine hours) []

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

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	16:59 (12) 17:16 (12)	06:48 19:55	18:38 (4) 21:01
2	09:00 15:41	08:19 16:42	07:11 17:48	16:58 (12) 17:18 (12)	06:45 19:57	18:59 (4) 21:03
3	08:59 15:42	08:17 16:44	07:08 17:50	16:58 (12) 17:19 (12)	06:42 19:59	18:41 (4) 21:05
4	08:59 15:43	08:14 16:47	07:05 17:53	16:57 (12) 17:19 (12)	06:39 20:01	18:43 (4) 21:08
5	08:58 15:45	08:12 16:49	07:02 17:55	16:57 (12) 17:18 (12)	06:36 20:04	18:53 (4) 21:10
6	08:58 15:46	08:10 16:52	07:00 17:57	16:59 (12) 17:18 (12)	06:34 20:06	19:58 (2) 21:12
7	08:57 15:48	08:08 16:54	06:57 17:59	16:59 (12) 17:16 (12)	06:31 20:08	20:03 (2) 21:14
8	08:56 15:50	08:06 16:56	06:54 18:02	17:01 (12) 17:14 (12)	06:28 20:10	20:05 (2) 21:16
9	08:56 15:51	08:03 16:59	06:52 18:04	17:03 (12) 17:11 (12)	06:25 20:12	20:11 (2) 21:19
10	08:55 15:53	08:01 17:01	06:49 18:06	06:23 20:15	05:06 21:21	22:13 22:14
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
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
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
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
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
16	08:48 16:04	07:47 17:15	06:32 18:20	06:06 20:28	04:54 21:33	04:15 22:19
17	08:47 16:06	07:44 17:18	06:29 18:22	06:04 20:30	04:52 21:35	04:15 22:19
18	08:45 16:08	07:42 17:20	06:27 18:24	17:51 (4) 17:55 (4)	06:01 20:32	04:50 21:37
19	08:44 16:11	07:39 17:22	06:24 18:26	17:46 (4) 17:57 (4)	05:58 20:35	04:48 21:39
20	08:42 16:13	07:37 17:25	06:21 18:28	17:44 (4) 17:59 (4)	05:56 20:37	04:46 21:41
21	08:41 16:15	07:34 17:27	06:18 18:31	17:42 (4) 18:01 (4)	05:53 20:39	04:44 21:43
22	08:39 16:17	07:32 17:29	06:15 18:33	17:40 (4) 18:03 (4)	05:50 20:41	04:42 21:45
23	08:38 16:19	07:29 17:32	06:13 18:35	17:40 (4) 18:06 (14)	05:48 20:43	04:40 21:47
24	08:36 16:21	07:26 17:34	06:10 18:37	17:38 (4) 18:06 (14)	05:45 20:46	04:39 21:49
25	08:34 16:24	07:24 17:36	06:07 18:39	17:38 (4) 18:05 (4)	05:43 20:48	04:37 21:51
26	08:32 16:26	07:21 17:39	06:04 18:42	17:37 (4) 18:04 (4)	05:40 20:50	04:35 21:52
27	08:31 16:28	07:19 17:41	06:01 18:44	17:36 (4) 18:04 (4)	05:37 20:52	04:34 21:54
28	08:29 16:30	07:16 17:43	05:59 18:46	17:37 (4) 18:04 (4)	05:35 20:54	04:32 21:56
29	08:27 16:33		06:56 19:48	18:37 (4) 19:03 (4)	05:32 20:57	04:31 21:58
30	08:25 16:35		06:53 19:50	18:37 (4) 19:02 (4)	05:30 20:59	04:29 21:59
31	08:23 16:37		06:50 19:53	18:37 (4) 19:01 (4)	04:28 22:01	22:20
Potential sun hours	227	262	365	429	515	539
Total, worst case		380	468	216	129	
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		74	189	92	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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SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Vecrubeni - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (507)
 Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	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	15:26 (11)
	22:20	21:35	20:17	18:53	16:32	25 15:51 (11)
2	04:21	05:11	06:17	07:20	07:30	15:26 (11)
	22:19	21:33	20:14	18:50	16:29	25 15:51 (11)
3	04:22	05:13	06:19	07:22	07:32	15:26 (11)
	22:19	21:31	20:12	18:48	16:27	24 15:50 (11)
4	04:23	05:15	06:21	07:25	17:42 (12)	07:34 15:27 (11)
	22:18	21:28	20:09	18:45	4 17:46 (12)	16:25 22 15:49 (11)
5	04:24	05:17	20:14 (2)	06:23	07:27	17:39 (12)
	22:17	21:26	9 20:23 (2)	20:06	18:42	11 17:50 (12)
6	04:25	05:19	20:12 (2)	06:25	07:29	17:36 (12)
	22:16	21:24	13 20:25 (2)	20:03	18:39	16 17:52 (12)
7	04:26	05:21	20:11 (2)	06:27	07:31	17:35 (12)
	22:15	21:22	15 20:26 (2)	20:01	18:37	17 17:52 (12)
8	04:27	05:23	20:10 (2)	06:29	18:39 (4)	07:33 17:33 (12)
	22:14	21:19	17 20:27 (2)	19:58	8 18:47 (4)	18:34 20 17:53 (12)
9	04:28	05:26	20:09 (2)	06:32	18:35 (4)	07:36 17:33 (12)
	22:13	21:17	19 20:28 (2)	19:55	15 18:50 (4)	18:31 21 17:54 (12)
10	04:30	05:28	20:08 (2)	06:34	18:33 (4)	07:38 17:32 (12)
	22:12	21:14	21 20:29 (2)	19:52	19 18:52 (4)	18:28 21 17:53 (12)
11	04:31	05:30	20:07 (2)	06:36	18:31 (4)	07:40 17:31 (12)
	22:11	21:12	22 20:29 (2)	19:49	22 18:53 (4)	18:26 22 17:53 (12)
12	04:33	05:32	20:06 (2)	06:38	18:29 (4)	07:42 17:31 (12)
	22:10	21:10	22 20:28 (2)	19:47	24 18:53 (4)	18:23 19 17:50 (12)
13	04:34	05:34	20:06 (2)	06:40	18:28 (4)	07:44 17:32 (12)
	22:09	21:07	22 20:28 (2)	19:44	26 18:54 (4)	18:20 16 17:48 (12)
14	04:36	05:36	20:05 (2)	06:42	18:27 (4)	07:46 17:32 (12)
	22:07	21:05	23 20:28 (2)	19:41	27 18:54 (4)	18:18 13 17:45 (12)
15	04:37	05:38	20:05 (2)	06:44	18:26 (4)	07:49 17:32 (12)
	22:06	21:02	23 20:28 (2)	19:38	28 18:54 (4)	18:15 10 17:42 (12)
16	04:39	05:40	20:05 (2)	06:46	18:26 (4)	07:51 17:34 (12)
	22:05	21:00	21 20:26 (2)	19:35	27 18:53 (4)	18:12 5 17:39 (12)
17	04:41	05:43	20:06 (2)	06:48	18:25 (4)	07:53 17:35 (12)
	22:03	20:57	17 20:23 (2)	19:32	28 18:53 (4)	18:10 1 17:36 (12)
18	04:42	05:45	20:06 (2)	06:51	18:25 (4)	07:55 18:06 08:06
	22:02	20:54	15 20:21 (2)	19:30	27 18:52 (4)	18:07 15:56 15:29
19	04:44	05:47	20:07 (2)	06:53	18:25 (4)	07:58 18:08 08:08
	22:00	20:52	12 20:19 (2)	19:27	27 18:52 (14)	18:04 15:54 15:29
20	04:46	05:49	20:08 (2)	06:55	18:25 (4)	08:00 18:10 08:58
	21:58	20:49	8 20:16 (2)	19:24	27 18:52 (14)	18:02 15:53 15:29
21	04:48	05:51	20:09 (2)	06:57	18:25 (4)	08:02 18:13 08:58
	21:57	20:47	5 20:14 (2)	19:21	25 18:50 (14)	17:59 15:51 15:30
22	04:49	05:53	20:05 (2)	06:59	18:26 (4)	08:04 16:36 (11)
	21:55	20:44	19:18	21 18:47 (4)	17:57 6 16:42 (11)	15:49 08:15 15:30
23	04:51	05:55	20:01	07:01	18:28 (4)	08:07 16:33 (11)
	21:53	20:41	19:16	17 18:45 (4)	17:54 13 16:46 (11)	15:48 08:17 15:31
24	04:53	05:58	20:03	07:03	18:29 (4)	08:09 16:31 (11)
	21:51	20:39	19:13	13 18:42 (4)	17:51 17 16:48 (11)	15:46 08:19 15:31
25	04:55	06:00	20:05	07:05	18:32 (4)	07:11 15:30 (11)
	21:49	20:36	19:10	7 18:39 (4)	16:49 19 15:49 (11)	15:45 08:21 15:32
26	04:57	06:02	20:07	07:08	18:35 (14)	07:13 15:28 (11)
	21:47	20:33	19:07	1 18:36 (14)	16:46 22 15:50 (11)	15:43 08:23 15:33
27	04:59	06:04	20:07	07:10	18:36 (14)	16:46 22 15:50 (11)
	21:45	20:31	19:04	16:44	23 15:51 (11)	15:42 08:25 15:34
28	05:01	06:06	20:07	07:12	18:37 (14)	16:46 23 15:51 (11)
	21:43	20:28	19:02	16:41	25 15:51 (11)	15:41 08:27 15:35
29	05:03	06:08	20:08	07:14	18:38 (14)	16:46 25 15:52 (11)
	21:41	20:25	18:59	16:39	25 15:52 (11)	15:39 08:29 15:36
30	05:05	06:10	20:09	07:16	18:39 (14)	16:46 25 15:52 (11)
	21:39	20:23	18:56	16:37	25 15:51 (11)	15:38 08:31 15:37
31	05:07	06:13	20:10	07:18	18:40 (14)	16:46 25 15:52 (11)
	21:37	20:20	19:00	16:34	26 15:52 (11)	15:40 08:32 15:38
Potential sun hours	538	474	386	321	241	207
Total, worst case		284	389	397	153	
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		143	180	112	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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SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Veikals Seli - Shadow Receptor: 1.0×1.0 Azimuth: 3.1° Slope: 90.0° (460) 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	09:00 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	07:11 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	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	07:37 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 22:09	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 21:22	06:27 20:01	07:31 18:37	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 22:15	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	05:09 21:19	04:18 22:13	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	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	08:49 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 21:10	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 20:23	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	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 16:02	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	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 18:09	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 22:02	05:45 20:54	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	04:48 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	08:31 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	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 19:02	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 21:41	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	07:16 20:23	07:23 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	06:12 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)	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_Vestas162

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 15:10/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 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 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	04:21 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 16:52	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 21:22	06:27 20:00	07:31 18:37	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 22:15	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	05:09 21:19	04:18 22:13	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	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	08:49 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 21:10	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 20:23	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	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 18:20	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	08:54 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 22:02	05:45 20:54	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	04:48 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	08:31 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	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 19:02	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 21:41	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	09:01 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		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_Vestas162

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 15:10/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 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.

	January	February	March	April	May	June
1	09:00	08:21	07:13	16:33 (2)	06:48	05:27
	15:39	16:40	17:46	19	16:52 (2)	19:55
2	09:00	08:19	07:11	16:34 (2)	06:45	05:25
	15:41	16:42	17:48	17	16:51 (2)	19:57
3	09:00	08:17	07:08	16:36 (2)	06:42	05:23
	15:42	16:44	17:50	12	16:48 (2)	19:59
4	08:59	14:56 (4)	08:15	07:05	06:39	05:20
	15:43	16:47	17:53		20:01	21:08
5	08:59	14:55 (4)	08:12	07:03	06:36	05:18
	15:45	16:49	17:55		20:04	21:10
6	08:58	14:55 (4)	08:10	07:00	06:34	05:15
	15:46	16:52	17:57		20:06	21:12
7	08:57	14:55 (4)	08:08	06:57	06:31	05:13
	15:48	16:54	17:59		20:08	21:14
8	08:57	14:55 (4)	08:06	06:54	06:28	05:11
	15:49	16:56	18:02		20:10	21:16
9	08:56	14:55 (4)	08:03	06:52	06:25	05:09
	15:51	16:59	18:04		20:12	21:19
10	08:55	14:56 (4)	08:01	06:49	06:23	05:06
	15:53	17:01	18:06		20:15	21:21
11	08:54	14:55 (4)	07:59	06:46	06:20	05:04
	15:55	17:03	18:08		20:17	21:23
12	08:53	14:55 (4)	07:56	06:43	06:17	05:02
	15:57	17:06	18:11		20:19	21:25
13	08:52	14:55 (4)	07:54	06:41	06:14	05:00
	15:58	17:08	18:13		20:21	21:27
14	08:51	14:55 (4)	07:52	06:38	06:12	04:58
	16:00	17:11	18:15		20:24	21:29
15	08:49	14:55 (4)	07:49	06:35	06:09	04:56
	16:02	17:13	18:17		20:26	21:31
16	08:48	14:56 (4)	07:47	16:38 (2)	06:32	06:06
	16:04	17:15	18:20	5	16:43 (2)	20:28
17	08:47	14:56 (4)	07:44	16:35 (2)	06:29	06:04
	16:06	17:18	18:22	10	16:45 (2)	20:30
18	08:45	14:56 (4)	07:42	16:34 (2)	06:27	06:01
	16:08	17:20	18:24	14	16:48 (2)	20:32
19	08:44	14:56 (4)	07:39	16:33 (2)	06:24	05:58
	16:10	17:22	18:26	18	16:51 (2)	20:35
20	08:42	14:57 (4)	07:37	16:32 (2)	06:21	05:56
	16:13	17:25	18:28	21	16:53 (2)	20:37
21	08:41	14:58 (4)	07:34	16:31 (2)	06:18	05:53
	16:15	17:27	18:31	24	16:55 (2)	20:39
22	08:39	14:58 (4)	07:32	16:31 (2)	06:16	05:50
	16:17	17:29	18:33	25	16:56 (2)	20:41
23	08:38	14:59 (4)	07:29	16:30 (2)	06:13	05:48
	16:19	17:32	18:35	26	16:56 (2)	20:43
24	08:36	15:00 (4)	07:26	16:30 (2)	06:10	05:45
	16:21	17:34	18:37	25	16:55 (2)	20:46
25	08:34	15:01 (4)	07:24	16:31 (2)	06:07	05:43
	16:24	17:36	18:39	25	16:56 (2)	20:48
26	08:32	15:02 (4)	07:21	16:31 (2)	06:04	05:40
	16:26	17:39	18:42	24	16:55 (2)	20:50
27	08:31	15:03 (4)	07:19	16:31 (2)	06:02	05:37
	16:28	17:41	18:44	23	16:54 (2)	20:52
28	08:29	15:05 (4)	07:16	16:31 (2)	05:59	05:35
	16:30	17:43	18:46	22	16:53 (2)	20:55
29	08:27	15:08 (4)		06:56	05:32	04:31
	16:33	15:13 (4)		19:48	20:57	21:58
30	08:25			06:53	05:30	04:29
	16:35			19:50	20:59	21:59
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	419	262	48			
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	46	51	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)

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 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	15:37
2	04:21	05:11	06:17	07:20		07:30	08:35
	22:19	21:33	20:14	18:50		16:29	15:36
3	04:21	05:13	06:19	07:23		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		07:37	08:40
	22:17	21:26	20:06	18:42		16:23	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
	22:16	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	07:36		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		17:13 (2)	07:48
	22:12	21:14	19:52	18:28	7	17:20 (2)	16:12
11	04:31	05:30	06:36	07:40		17:09 (2)	07:50
	22:11	21:12	19:49	18:26	14	17:23 (2)	16:10
12	04:33	05:32	06:38	07:42		17:06 (2)	07:53
	22:10	21:10	19:47	18:23	18	17:24 (2)	16:07
13	04:34	05:34	06:40	07:44		17:05 (2)	07:55
	22:09	21:07	19:44	18:20	21	17:26 (2)	16:05
14	04:36	05:36	06:42	07:47		17:04 (2)	07:57
	22:07	21:05	19:41	18:18	22	17:26 (2)	16:03
15	04:37	05:38	06:44	07:49		17:03 (2)	07:59
	22:06	21:02	19:38	18:15	23	17:26 (2)	16:02
16	04:39	05:40	06:46	07:51		17:03 (2)	08:02
	22:05	21:00	19:35	18:12	24	17:27 (2)	16:00
17	04:40	05:43	06:48	07:53		17:02 (2)	08:04
	22:03	20:57	19:33	18:10	25	17:27 (2)	15:58
18	04:42	05:45	06:51	07:55		17:02 (2)	08:06
	22:02	20:54	19:30	18:07	25	17:27 (2)	15:56
19	04:44	05:47	06:53	07:58		17:01 (2)	08:08
	22:00	20:52	19:27	18:04	26	17:27 (2)	15:54
20	04:46	05:49	06:55	08:00		17:01 (2)	08:10
	21:58	20:49	19:24	18:02	25	17:26 (2)	15:52
21	04:47	05:51	06:57	08:02		17:02 (2)	08:13
	21:57	20:47	19:21	17:59	24	17:26 (2)	15:51
22	04:49	05:53	06:59	08:04		17:02 (2)	08:15
	21:55	20:44	19:18	17:56	20	17:22 (2)	15:49
23	04:51	05:55	07:01	08:07		17:03 (2)	08:17
	21:53	20:41	19:16	17:54	17	17:20 (2)	15:48
24	04:53	05:58	07:03	08:09		17:04 (2)	08:19
	21:51	20:39	19:13	17:51	13	17:17 (2)	15:46
25	04:55	06:00	07:05	07:11		16:06 (2)	08:21
	21:49	20:36	19:10	16:49	9	16:15 (2)	15:45
26	04:57	06:02	07:08	07:14		16:08 (2)	08:23
	21:47	20:33	19:07	16:46	4	16:12 (2)	15:43
27	04:59	06:04	07:10	07:16		08:25	14:34 (4)
	21:45	20:31	19:04	16:44		15:42	14:57 (4)
28	05:01	06:06	07:12	07:18		08:27	14:36 (4)
	21:43	20:28	19:02	16:41		15:41	14:58 (4)
29	05:03	06:08	07:14	07:20		08:29	14:36 (4)
	21:41	20:25	18:59	16:39		15:39	14:56 (4)
30	05:05	06:10	07:16	07:23		08:31	14:36 (4)
	21:39	20:23	18:56	16:37		15:38	14:55 (4)
31	05:07	06:13		07:25			09:00
	21:37	20:20		16:34			15:38
Potential sun hours	538	474	386	321		241	207
Total, worst case				317		348	73
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				90		27	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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SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 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	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	06:36	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	05:15	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	20:03	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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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	15:30
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12	08:53	07:57	06:43	06:17	05:02	04:17	04:33	05:32	06:38	07:42	07:53	08:50
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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	20:21	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	16:03	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	04:53	04:15	04:39	05:41	06:46	07:51	08:02	08:55
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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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	16:13	17:25	18:29	20:37	21:42	22:21	21:59	20:50	19:24	18:02	15:52	15:29
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	16:19	17:32	18:35	20:44	21:47	22:22	21:53	20:42	19:16	17:54	15:48	15:31
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	16:24	17:36	18:40	20:48	21:51	22:22	21:50	20:36	19:10	16:49	15:45	15:32
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	16:28	17:41	18:44	20:53	21:55	22:22	21:46	20:31	19:04	16:44	15:42	15:34
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	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)	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		

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Vienibas gatve 7 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (576)
 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
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)	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		

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 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 15:39	08:21 16:40	07:13 17:46	16:17 (11) 19:55	06:48 23	18:34 (12) 21:01	05:28 28	19:49 (4) 20:17 (4)	04:27 22:02	19:56 (4) 20:11 (4)
2	09:00 15:41	08:19 16:42	07:11 17:48	16:17 (11) 19:57	06:45 21	18:35 (12) 21:03	05:25 30	19:47 (4) 20:17 (4)	04:26 22:04	19:58 (4) 20:09 (4)
3	08:59 15:42	08:17 16:45	07:08 17:50	16:16 (11) 19:59	06:42 17	18:36 (12) 21:05	05:23 31	19:47 (4) 20:18 (4)	04:24 22:05	20:00 (4) 20:07 (4)
4	08:59 15:43	08:14 16:47	07:05 17:53	16:15 (11) 20:01	06:39 12	18:38 (12) 21:08	05:20 33	19:46 (4) 20:19 (4)	04:23 22:07	21:22 (2) 21:25 (2)
5	08:58 15:45	08:12 16:49	07:03 17:55	16:15 (11) 20:04	06:36 40	18:50 (12) 21:10	05:18 34	19:46 (4) 20:20 (4)	04:22 22:08	21:22 (2) 21:27 (2)
6	08:58 15:46	08:10 16:52	07:00 17:57	16:16 (11) 20:06	06:34 39	19:44 (4) 21:12	05:16 35	19:44 (4) 20:19 (4)	04:21 22:09	21:21 (2) 21:28 (2)
7	08:57 15:48	08:08 16:54	06:57 17:59	16:15 (11) 20:08	06:31 40	19:44 (4) 21:14	05:13 36	19:44 (4) 20:20 (4)	04:20 22:11	21:20 (2) 21:29 (2)
8	08:56 15:50	08:06 16:56	06:54 18:02	16:15 (11) 20:10	06:28 39	19:43 (14) 21:16	05:11 36	19:44 (4) 20:20 (4)	04:19 22:12	21:19 (2) 21:29 (2)
9	08:56 15:51	08:03 16:59	06:52 18:04	16:15 (11) 20:12	06:25 6	19:37 (14) 21:19	05:09 37	19:43 (4) 20:20 (4)	04:19 22:13	21:19 (2) 21:31 (2)
10	08:55 15:53	08:01 17:01	06:49 18:06	16:16 (11) 20:15	06:23 10	19:34 (14) 21:21	05:06 37	19:43 (4) 20:20 (4)	04:18 22:14	21:19 (2) 21:31 (2)
11	08:54 15:55	07:59 17:03	06:46 18:08	16:17 (11) 20:17	06:20 14	19:32 (14) 21:23	05:04 38	19:43 (4) 20:21 (4)	04:17 22:15	21:19 (2) 21:33 (2)
12	08:53 15:57	07:56 17:06	06:43 18:11	16:18 (11) 20:19	06:17 18	19:31 (14) 21:25	05:02 37	19:43 (4) 20:20 (4)	04:17 22:16	21:19 (2) 21:34 (2)
13	08:52 15:59	07:54 17:08	06:41 18:13	16:18 (11) 20:21	06:14 21	19:30 (14) 21:27	05:00 37	19:43 (4) 20:20 (4)	04:16 22:17	21:19 (2) 21:34 (2)
14	08:50 16:00	07:52 17:11	06:38 18:15	16:20 (11) 20:24	06:12 23	19:29 (14) 21:29	04:58 37	19:43 (4) 20:20 (4)	04:16 22:17	21:19 (2) 21:35 (2)
15	08:49 16:02	07:49 17:13	06:35 18:17	16:21 (11) 20:26	06:09 23	19:29 (14) 21:31	04:56 37	19:44 (4) 20:21 (4)	04:15 22:18	21:19 (2) 21:36 (2)
16	08:48 16:04	07:47 17:15	06:32 18:20	16:23 (11) 20:28	06:06 23	19:28 (14) 21:33	04:54 36	19:44 (4) 20:20 (4)	04:15 22:19	21:19 (2) 21:36 (2)
17	08:47 16:06	07:44 17:18	06:29 18:22	16:28 (11) 20:30	06:04 23	19:29 (14) 21:35	04:52 36	19:44 (4) 20:20 (4)	04:15 22:19	21:19 (2) 21:37 (2)
18	08:45 16:08	07:42 17:20	06:27 18:24	17:44 (12) 20:32	06:01 22	19:29 (14) 21:37	04:50 35	19:44 (4) 20:19 (4)	04:15 22:20	21:20 (2) 21:37 (2)
19	08:44 16:11	07:39 17:22	06:24 18:26	17:41 (12) 20:35	05:58 21	19:28 (14) 21:39	04:48 35	19:45 (4) 20:20 (4)	04:15 22:20	21:20 (2) 21:38 (2)
20	08:42 16:13	07:37 17:25	06:21 18:28	17:38 (12) 20:37	05:56 19	19:30 (14) 21:41	04:46 34	19:45 (4) 20:19 (4)	04:15 22:21	21:20 (2) 21:38 (2)
21	08:41 16:15	07:34 17:27	06:18 18:31	17:37 (12) 20:39	05:53 17	19:30 (14) 21:43	04:44 32	19:46 (4) 20:18 (4)	04:15 22:21	21:20 (2) 21:38 (2)
22	08:39 16:17	07:32 17:29	06:16 18:33	17:35 (12) 20:41	05:50 14	19:32 (14) 21:45	04:42 31	19:47 (4) 20:18 (4)	04:15 22:21	21:20 (2) 21:38 (2)
23	08:38 16:19	07:29 17:32	06:13 18:35	17:35 (12) 20:43	05:48 10	19:33 (14) 21:47	04:40 30	19:47 (4) 20:17 (4)	04:15 22:21	21:20 (2) 21:38 (2)
24	08:36 16:21	07:26 17:34	06:10 18:37	17:34 (12) 20:46	05:45 30	19:43 (14) 21:49	04:39 29	19:48 (4) 20:17 (4)	04:16 22:21	21:21 (2) 21:39 (2)
25	08:34 16:24	07:24 17:36	06:07 18:39	17:33 (12) 20:48	05:43 31	19:49 (4) 21:51	04:37 28	19:49 (4) 20:17 (4)	04:16 22:21	21:20 (2) 21:38 (2)
26	08:32 16:26	07:21 17:39	06:04 18:42	17:32 (12) 20:50	05:40 31	19:49 (4) 21:52	04:35 27	19:49 (4) 20:16 (4)	04:16 22:21	21:21 (2) 21:39 (2)
27	08:31 16:28	07:19 17:41	06:02 18:44	17:32 (12) 20:52	05:38 13	19:51 (4) 21:54	04:34 24	19:51 (4) 20:15 (4)	04:17 22:21	21:21 (2) 21:38 (2)
28	08:29 16:31	07:16 17:43	05:59 18:46	17:32 (12) 20:54	05:35 19	19:53 (4) 21:56	04:32 23	19:52 (4) 20:15 (4)	04:18 22:21	21:22 (2) 21:38 (2)
29	08:27 16:33		05:56 19:48	18:32 (12) 20:57	05:32 22	19:52 (4) 21:58	04:31 21	19:52 (4) 20:13 (4)	04:18 22:21	21:22 (2) 21:37 (2)
30	08:25 16:35		05:53 19:50	18:32 (12) 20:59	05:30 26	19:50 (4) 21:59	04:29 20	19:53 (4) 20:13 (4)	04:19 22:20	21:22 (2) 21:37 (2)
31	08:23 16:37		05:50 19:53	18:33 (12) 20:58		20:16 (4) 22:01	04:28 17	19:55 (4) 20:12 (4)		
Potential sun hours	227	262	365	429	515	539				
Total, worst case		241	929	417	981	427				
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		47	374	177	571	239				

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)

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Veverzemnieki - Shadow Receptor: 1.0×1.0 Azimuth: 3.1° Slope: 90.0° (586)
 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	21:23 (2)	05:09	19:53 (4)	06:15	19:31 (14)	07:18	16:57 (11)	07:27	08:33		
2	04:21	21:24 (2)	05:11	19:53 (4)	06:17	19:32 (14)	07:20	16:56 (11)	07:30	08:34		
3	04:22	21:25 (2)	05:13	19:53 (4)	06:19	19:34 (14)	07:23	16:54 (11)	07:32	08:36		
4	04:23	21:26 (2)	05:15	19:54 (4)	06:21	19:35 (14)	07:25	16:53 (11)	07:34	08:38		
5	04:24	21:27 (2)	05:17	19:54 (4)	06:23	19:36 (14)	07:27	16:53 (11)	07:37	08:40		
6	04:25	21:28 (2)	05:19	19:54 (4)	06:25	19:37 (14)	07:29	16:52 (11)	07:39	08:41		
7	04:26	21:29 (2)	05:21	19:55 (4)	06:27	19:38 (14)	07:31	16:51 (11)	07:41	08:43		
8	04:27	21:30 (2)	05:24	19:55 (4)	06:30	19:39 (14)	07:33	16:50 (11)	07:43	08:44		
9	04:28	21:31 (2)	05:26	19:56 (4)	06:32	19:40 (14)	07:35	16:49 (11)	07:45	08:46		
10	04:29	21:32 (2)	05:28	19:56 (4)	06:34	19:41 (14)	07:37	16:48 (11)	07:47	08:47		
11	04:30	21:33 (2)	05:30	19:57 (4)	06:36	19:42 (14)	07:39	16:47 (11)	07:49	08:49		
12	04:31	21:34 (2)	05:32	19:57 (4)	06:38	19:43 (14)	07:41	16:46 (11)	07:51	08:50		
13	04:32	21:35 (2)	05:34	19:58 (4)	06:40	19:44 (14)	07:43	16:45 (11)	07:53	08:51		
14	04:33	21:36 (2)	05:36	19:58 (4)	06:42	19:45 (14)	07:45	16:44 (11)	07:55	08:52		
15	04:34	21:37 (2)	05:38	19:59 (4)	06:44	19:46 (14)	07:47	16:43 (11)	07:57	08:53		
16	04:35	21:38 (2)	05:40	19:59 (4)	06:46	19:47 (14)	07:49	16:42 (11)	07:59	08:54		
17	04:36	21:39 (2)	05:42	20:00 (4)	06:48	19:48 (14)	07:51	16:41 (11)	08:01	08:55		
18	04:37	21:40 (2)	05:44	20:01 (4)	06:50	19:49 (14)	07:53	16:40 (11)	08:03	08:56		
19	04:38	21:41 (2)	05:46	20:02 (4)	06:52	19:50 (14)	07:55	16:39 (11)	08:05	08:57		
20	04:39	21:42 (2)	05:48	20:03 (4)	06:54	19:51 (14)	07:57	16:38 (11)	08:07	08:58		
21	04:40	21:43 (2)	05:50	20:04 (4)	06:56	19:52 (14)	07:59	16:37 (11)	08:09	08:59		
22	04:41	21:44 (2)	05:52	20:05 (4)	06:58	19:53 (14)	08:01	16:36 (11)	08:11	09:00		
23	04:42	21:45 (2)	05:54	20:06 (4)	07:00	19:54 (14)	08:03	16:35 (11)	08:13	09:01		
24	04:43	21:46 (2)	05:56	20:07 (4)	07:02	19:55 (14)	08:05	16:34 (11)	08:15	09:02		
25	04:44	21:47 (2)	05:58	20:08 (4)	07:04	19:56 (14)	08:07	16:33 (11)	08:17	09:03		
26	04:45	21:48 (2)	05:60	20:09 (4)	07:06	19:57 (14)	08:09	16:32 (11)	08:19	09:04		
27	04:46	21:49 (2)	05:62	20:10 (4)	07:08	19:58 (14)	08:11	16:31 (11)	08:21	09:05		
28	04:47	21:50 (2)	05:64	20:11 (4)	07:10	19:59 (14)	08:13	16:30 (11)	08:23	09:06		
29	04:48	21:51 (2)	05:66	20:12 (4)	07:12	20:00 (14)	08:15	16:29 (11)	08:25	09:07		
30	04:49	21:52 (2)	05:68	20:13 (4)	07:14	20:01 (14)	08:17	16:28 (11)	08:27	09:08		
31	04:50	21:53 (2)	05:70	20:14 (4)	07:16	20:02 (14)	08:19	16:27 (11)	08:29	09:09		
Potential sun hours	538		474		386		321		241	207		
Total, worst case	704		728		576		714					
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	331		367		266		202					

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)

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 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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SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Vež ukrogs - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (797)
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 21:02	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 15:37
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	04:24 22:07	04:23 22:18	05:15 21:29	06:21 20:09	07:25 18:45	07:35 16:25	08:38 15:35
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	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	04:21 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 15:32
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 18:31	07:46 16:14	08:46 15:31
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	08:48 15:30
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	04:16 22:17	04:35 22:09	05:34 21:07	06:40 19:44	07:45 18:21	07:55 16:06	08:51 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	05:37 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	04:15 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	08:06 15:56	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	06:21 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	05:52 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 20:36	07:06 19:10	07:12 16:49	08:21 15:45	09:00 15:32
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 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		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 16:39	08:29 15:40	09:01 15:36
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 16:37	08:31 15:39	09:01 15:37
31	08:23 16:38		05:51 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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Flickering_Valka_Vestas162

SIA Estonian, Latvian & Lithuanian environment
Vilandes 3-6
LV-1010 Riga
0037167242411
Baiba / baiba.ozolina@environment.lv
Calculated:
15/01/2026 15:10/4.1.254

Calculation: Flickering_Valke_Vestas162 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

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
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	14:33 (4)	08:21	07:13	06:48	05:27	04:27	04:20	05:09	06:15	07:18	07:27	08:33
	15:39	20 14:53 (4)	16:40	17:46	19:55	21:01	22:02	22:20	21:35	20:17	18:53	16:32	5 15:51 (2)
2	09:00	14:33 (4)	08:19	07:11	06:45	05:25	04:25	04:21	05:11	06:17	07:20	07:30	08:35
	15:41	21 14:54 (4)	16:42	17:48	19:57	21:03	22:04	22:21	21:33	20:14	18:50	16:29	15:36
3	09:00	14:34 (4)	08:17	07:08	06:42	05:23	04:24	04:21	05:13	06:19	07:23	07:32	08:36
	15:42	22 14:56 (4)	16:44	17:50	19:59	21:06	22:05	22:19	21:31	20:12	18:48	16:27	15:35
4	08:59	14:34 (4)	08:15	07:05	06:39	05:20	04:23	04:22	05:15	06:21	07:25	07:34	08:38
	15:43	22 14:56 (4)	16:47	17:53	20:01	21:08	22:07	22:18	21:28	20:09	18:45	16:25	15:34
5	08:59	14:34 (4)	08:12	07:03	06:36	05:18	04:22	04:24	05:17	06:23	07:27	07:37	08:40
	15:45	23 14:57 (4)	16:49	17:55	20:04	21:10	22:08	22:17	21:26	20:06	18:42	16:23	15:33
6	08:58	14:35 (4)	08:10	07:02	06:34	05:15	04:21	04:25	05:19	06:25	07:29	07:39	08:41
	15:46	22 14:57 (4)	16:52	17:57	20:06	21:12	22:09	22:16	21:24	20:03	18:39	16:20	15:32
7	08:57	14:35 (4)	08:08	06:57	06:31	05:13	04:20	04:26	05:21	06:27	07:31	07:41	08:43
	15:48	23 14:58 (4)	16:54	17:59	20:08	21:14	22:11	22:16	21:22	20:01	18:37	16:18	15:32
8	08:57	14:35 (4)	08:06	06:54	06:28	05:11	04:19	04:27	05:23	06:29	07:33	07:43	08:44
	15:49	24 14:59 (4)	16:56	18:02	20:10	21:16	22:12	22:15	21:19	19:58	18:34	16:16	15:31
9	08:56	14:36 (4)	08:03	06:52	06:25	05:09	04:18	04:28	05:26	06:32	07:36	07:46	08:46
	15:51	23 14:59 (4)	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	14:37 (4)	08:01	06:49	06:23	05:06	04:18	04:30	05:28	06:34	07:38	07:48	08:47
	15:53	23 15:00 (4)	17:01	18:06	20:15	21:21	22:14	22:12	21:14	19:52	18:28	16:12	15:30
11	08:54	14:36 (4)	07:59	06:46	06:19	20:20	05:04	04:17	04:31	05:30	06:36	07:40	07:50
	15:55	24 15:00 (4)	17:03	18:08	20:17	21:23	22:15	22:11	21:12	19:49	18:26	16:10	15:30
12	08:53	14:37 (4)	07:56	06:17 (2)	06:43	06:17	05:02	04:17	04:33	05:32	06:38	07:42	07:53
	15:57	23 15:00 (4)	17:06	16:32 (2)	18:11	20:19	21:25	22:16	22:10	21:10	19:47	18:23	16:07
13	08:52	14:37 (4)	07:54	06:17 (2)	06:44	06:16	05:00	04:16	04:34	05:34	06:40	07:44	07:55
	15:58	23 15:00 (4)	17:08	18:35 (2)	18:13	20:21	21:27	22:17	22:09	21:07	19:44	18:20	16:05
14	08:51	14:38 (4)	07:52	06:16 (2)	06:38	06:12	04:58	04:16	04:36	05:36	06:42	07:47	07:57
	16:00	23 15:01 (4)	17:11	22 16:38 (2)	18:15	20:24	21:29	22:18	22:08	21:05	19:41	18:18	16:03</

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		

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 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	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
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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
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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	07:12	08:21	09:00
	16:24	17:37	18:40	20:48	21:51	22:22	21:50	20:36	19:10	17:49	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	17:46	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	17:44	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	17:41	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	17:39	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	17:37	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		

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 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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SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Zala iela 12 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (650) 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 21:30	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)	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		

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Zala iela 14 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (677)
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_Vestas162

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 15:10/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 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
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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SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Zala iela 1B - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (655)
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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SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Zala iela 3A - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (644)
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	21:30	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	06:47	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	04:51	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	07:12	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)	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		

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Zala iela 3B - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (670) 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 21:30	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)	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		

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 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
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	04:52 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 17:51	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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SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 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	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	21:30	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	06:47	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	22:04	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	07:12	08:21	09:00
	16:24	17:37	18:40	20:48	21:51	22:22	21:50	20:36	19:10	17:49	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	17:46	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	17:44	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	17:42	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	17:39	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	17:37	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		

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 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	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	21:30	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	06:47	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	04:51	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	07:12	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)	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_Vestas162

SIA Estonian, Latvian & Lithuanian environment
Vilandes 3-6
LV-1010 Riga
0037167242411
Baiba / baiba.ozolina@environment.lv
Calculated:
15/01/2026 15:10/4.1.254

Calculation: Flickering_Valke_Vestas162 Shadow receptor: Zeltini - Shadow Receptor: 1.0 x 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

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
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	14:38 (4)	08:21	07:13	06:48	05:27	04:27	04:20	05:09	06:15	07:18	07:27	08:33
	15:39	15	14:53 (4)	16:40	17:46	19:55	21:01	22:02	22:20	21:35	20:17	18:53	16:32
2	09:00	14:38 (4)	08:19	07:11	06:45	05:25	04:25	04:21	05:11	06:17	07:20	07:30	08:35
	15:40	16	14:54 (4)	16:42	17:48	19:57	21:03	22:04	22:19	21:33	20:14	18:50	16:29
3	09:00	14:39 (4)	08:17	07:08	06:42	05:23	04:24	04:21	05:13	06:19	07:23	07:32	08:36
	15:42	17	14:56 (4)	16:44	17:50	19:59	21:06	22:05	22:19	21:31	20:12	18:48	16:27
4	08:59	14:39 (4)	08:15	07:05	06:39	05:20	04:23	04:22	05:15	06:21	07:25	07:34	08:38
	15:43	19	14:58 (4)	16:47	17:53	20:01	21:08	22:07	22:18	21:28	20:09	18:45	16:25
5	08:59	14:39 (4)	08:12	07:03	06:36	05:18	04:22	04:24	05:17	06:23	07:27	07:37	08:40
	15:45	20	14:59 (4)	16:49	17:55	20:04	21:10	22:08	22:17	21:26	20:06	18:42	16:23
6	08:58	14:39 (4)	08:10	07:00	06:34	05:15	04:21	04:25	05:19	06:25	07:29	07:39	08:41
	15:46	22	15:01 (4)	16:52	17:57	20:06	21:12	22:09	22:16	21:24	20:03	18:39	16:20
7	08:57	14:40 (4)	08:08	06:57	06:31	05:13	04:20	04:26	05:21	06:27	07:31	07:41	08:43
	15:48	21	15:01 (4)	16:54	17:59	20:08	21:14	22:11	22:16	21:22	20:01	18:37	16:18
8	08:57	14:40 (4)	08:06		16:19 (2)	06:54	06:28	05:11	04:19	04:27	05:53	07:43	08:44
	15:49	22	15:02 (4)	16:56	3	16:22 (2)	18:02	20:10	21:16	22:12	22:15	21:19	19:58
9	08:56	14:41 (4)	08:03		16:17 (2)	06:52	06:25	05:09	04:18	04:28	05:26	06:32	07:36
	15:51	21	15:02 (4)	16:59	8	16:25 (2)	18:04	20:12	21:19	22:13	22:14	21:17	19:55
10	08:55	14:41 (4)	08:01		16:15 (2)	06:49	06:23	05:06	04:18	04:30	05:28	06:34	07:38
	15:53	22	15:03 (4)	17:01	12	16:27 (2)	18:06	20:15	21:21	22:14	22:12	21:14	19:52
11	08:54	14:41 (4)	07:59		16:15 (2)	06:46	06:20	05:04	04:17	04:31	05:30	06:36	07:40
	15:55	22	15:03 (4)	17:03	15	16:30 (2)	18:08	20:17	21:23	22:15	22:11	21:12	19:49
12	08:53	14:42 (4)	07:56		16:14 (2)	06:43	06:17	05:02	04:17	04:33	05:32	06:38	07:42
	15:57	21	15:03 (4)	17:06	18	16:32 (2)	18:11	20:19	21:25	22:16	22:10	21:10	19:47
13	08:52	14:42 (4)	07:54		16:14 (2)	06:41	06:14	05:00	04:16	04:34	05:34	06:40	07:44
	15:58	21	15:03 (4)	17:08	21	16:35 (2)	18:13	20:21	21:27	22:17	22:09	21:07	19:44
14	08:51	14:43 (4)	07:52		16:13 (2)	06:38	06:12	04:58	04:16	04:36	05:36	06:42	07:47
	16:00	21	15:04 (4)	17:11	24	16:37 (2)	18:15	20:24	21:29	22:18	22:08	21:05	19:41
15	08:49	14:43 (4)	07:49		16:12 (2)	06:35	06:09	04:56	04:15	04:37	05:38	06:44	07:49
	16:02	21	15:04 (4)	17:13	25	16:37 (2)	18:17	20:26	21:31	22:18	22:06	21:02	19:38
16	08:48	14:44 (4)	07:47		16:13 (2)	06:32	06:06	04:53	04:15	04:39	05:40	06:46	07:51
	16:04	20	15:04 (4)	17:15	24	16:37 (2)	18:20	20:28	21:33	22:19	22:05	21:00	19:35
17	08:47	14:45 (4)	07:44		16:12 (2)	06:29	06:04	04:51	04:15	04:40	05:43	06:48	07:53
	16:06	19	15:04 (4)	17:18	25	16:37 (2)	18:22	20:30	21:35	22:20	22:03	20:57	19:33
18	08:45	14:45 (4)	07:42		16:13 (2)	06:27	06:01	04:50	04:15	04:42	05:45	06:51	07:55
	16:08	18	15:03 (4)	17:20	24	16:37 (2)	18:24	20:32	21:37	22:20	22:02	20:54	19:30
19	08:44	14:46 (4)	07:39		16:13 (2)	06:24	05:58	04:48	04:15	04:40	05:47	06:53	07:57
	16:10	17	15:03 (4)	17:22	24	16:37 (2)	18:26	20:34	21:39	22:21	22:00	20:52	19:28
20	08:42	14:48 (4)	07:37		16:14 (2)	06:21	05:56	04:46	04:15	04:46	05:49	06:55	08:00
	16:13	15	15:03 (4)	17:25	21	16:35 (2)	18:28	20:37	21:41	22:21	21:58	20:49	19:24
21	08:41	14:50 (4)	07:34		16:14 (2)	06:18	05:53	04:44	04:15	04:47	05:51	06:57	08:02
	16:15	12	15:02 (4)	17:27	20	16:34 (2)	18:31	20:39	21:43	22:21	21:57	20:47	19:21
22	08:39	14:51 (4)	07:32		16:16 (2)	06:16	05:50	04:42	04:15	04:49	05:53	06:59	08:04
	16:17	10	15:01 (4)	17:29	18	16:34 (2)	18:33	20:41	21:45	22:21	21:55	20:44	19:18
23	08:38	14:55 (4)	07:29		16:17 (2)	06:13	05:48	04:40	04:15	04:51	05:55	07:01	08:07
	16:19	3	14:58 (4)	17:32	15	16:32 (2)	18:35	20:43	21:47	22:22	21:53	20:41	19:16
24	08:36		07:26		16:20 (2)	06:10	05:45	04:39	04:15	04:53	05:58	07:03	08:09
	16:21		17:34	8	16:28 (2)	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	15:03 (2)
	16:24		17:36		18:39	20:48	21:51	22:22	21:49	20:36	19:10	16:49	15:42 (2)
26	08:32		07:21		06:05	04:35	04:16	04:17	04:57	06:02	07:08	07:14	15:42 (2)
	16:26		17:39		18:42	20:50	21:53	22:21	21:47	20:33	19:07	16:46	15:07 (2)
27	08:31		07:19		06:02	05:37	04:34	04:17	04:59	06:04	07:10	07:16	15:43 (2)
	16:28		17:41		18:44	20:52	21:54	22:21	21:45	20:31	19:04	16:44	15:07 (2)
28	08:29		07:16		05:59	05:35	04:32	04:17	05:01	06:06	07:12	07:18	15:42 (2)
	16:30		17:43		18:46	20:55	21:56	22:21	21:43	20:28	19:02	16:41	15:06 (2)
29	08:27				06:56	05:32	04:31	04:18	05:03	06:08	07:14	07:20	15:43 (2)
	16:33				19:48	20:57	21:58	22:21	21:41	20:25	18:59	16:39	15:04 (2)
30	08:25				06:53	05:30	04:29	04:19	05:05	06:10	07:16	07:23	15:43 (2)
	16:35				19:50	20:59	21:59	22:20	21:39	20:23	18:56	16:37	18
31	08:23				06:50		04:28		05:07	06:13		07:25	15:45 (2)
	16:37				19:53		22:01		21:37	20:20		16:34	14
Potential sun hours	227		262		365		429		515		539		538
Total, worst case	415		305									286	241
Sun reduction	0.11		0.19									0.08	0.08
Oper. time dir. 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									0.08	0.08
Total, real	45		59									81	17
													207
													421
													0.06
													1.00
													1.00
													0.06
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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_Vestas162

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 15:10/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 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	July	August	September	October	November	December
1	09:00	14:15 (4)	08:21	15:58 (2)	07:13	06:48	05:27	04:27	04:20	05:09	06:15	07:18
2	15:39	22	14:37 (4)	16:40	5	16:03 (2)	07:46	19:55	21:01	22:02	22:20	21:35
3	09:00	22	14:37 (4)	16:40	5	16:03 (2)	07:46	19:55	21:01	22:02	22:20	21:35
4	08:59	21	14:38 (4)	16:47	17	16:11 (2)	07:53	20:01	21:08	22:07	22:18	21:29
5	08:59	21	14:38 (4)	16:47	17	16:11 (2)	07:53	20:01	21:08	22:07	22:18	21:29
6	08:58	21	14:39 (4)	16:49	21	16:14 (2)	07:55	20:04	21:10	22:08	22:17	21:26
7	08:57	21	14:39 (4)	16:52	24	16:16 (2)	07:57	20:06	21:12	22:09	22:16	21:24
8	08:57	21	14:39 (4)	16:54	25	16:17 (2)	07:59	20:08	21:14	22:11	22:16	21:22
9	08:56	20	14:39 (4)	16:56	26	16:17 (2)	08:02	20:10	21:16	22:12	22:15	21:19
10	08:55	19	14:40 (4)	17:01	27	16:18 (2)	08:04	20:13	21:19	22:13	22:14	21:17
11	08:54	18	14:40 (4)	17:03	27	16:19 (2)	08:06	20:15	21:21	22:14	22:13	21:14
12	08:53	16	14:39 (4)	17:06	26	16:18 (2)	08:11	20:19	21:25	22:16	22:10	21:10
13	08:52	15	14:38 (4)	17:08	25	16:18 (2)	08:13	20:21	21:27	22:17	22:09	21:07
14	08:51	13	14:38 (4)	17:11	24	16:17 (2)	08:15	20:24	21:29	22:18	22:05	21:05
15	08:49	11	14:37 (4)	17:13	23	16:16 (2)	08:17	20:26	21:31	22:18	22:06	21:02
16	08:48	7	14:36 (4)	17:15	22	16:16 (2)	08:18	20:28	21:33	22:19	22:05	21:00
17	08:47	19	14:36 (4)	17:18	19	16:14 (2)	08:22	20:30	21:35	22:20	22:03	20:57
18	08:45	16	14:35 (4)	17:20	15	16:13 (2)	08:24	20:32	21:37	22:20	22:02	20:55
19	08:44	16	14:35 (4)	17:21	11	16:11 (2)	08:26	20:35	21:39	22:21	22:00	20:52
20	08:42	16	14:34 (4)	17:23	16	16:10 (2)	08:28	20:37	21:41	22:21	21:58	20:49
21	08:41	16	14:34 (4)	17:24	16	16:10 (2)	08:28	20:37	21:41	22:21	21:58	20:49
22	08:39	16	14:33 (4)	17:26	16	16:09 (2)	08:29	20:38	21:42	22:22	21:59	20:50
23	08:38	16	14:33 (4)	17:27	16	16:09 (2)	08:29	20:38	21:42	22:22	21:59	20:50
24	08:36	16	14:32 (4)	17:29	16	16:08 (2)	08:30	20:39	21:43	22:23	22:00	20:51
25	08:34	16	14:31 (4)	17:31	16	16:07 (2)	08:31	20:40	21:44	22:24	22:01	20:52
26	08:32	16	14:30 (4)	17:33	16	16:06 (2)	08:32	20:41	21:45	22:25	22:02	20:53
27	08:31	16	14:29 (4)	17:35	16	16:05 (2)	08:33	20:42	21:46	22:26	22:03	20:54
28	08:29	16	14:28 (4)	17:37	16	16:04 (2)	08:34	20:43	21:47	22:27	22:04	20:55
29	08:27	16	14:27 (4)	17:39	16	16:03 (2)	08:35	20:44	21:48	22:28	22:05	20:56
30	08:25	16	14:26 (4)	17:41	16	16:02 (2)	08:36	20:45	21:49	22:29	22:06	20:57
31	08:23	16	14:25 (4)	17:43	16	16:01 (2)	08:37	20:46	21:50	22:30	22:07	20:58
Potential sun hours	227	262	365	429	515	539	538	474	386	321	241	207
Total, worst case	290	387								204	257	679
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	32	75								58	20	42

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)

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 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_Vestas162

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 15:10/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Zemgailes iela 12 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (757)
 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
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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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SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Zemgailes 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
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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_Vestas162

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 15:10/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 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
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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 16:42	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)

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 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
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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 15:35
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_Vestas162

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 15:10/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Zemgailes iela 15 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (688)
 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
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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 21:20	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
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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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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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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
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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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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	08:34 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
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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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SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Zemgailes 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
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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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
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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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SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 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
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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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
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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 16:11	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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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
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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
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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_Vestas162

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 15:10/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 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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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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SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 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
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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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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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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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SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Zemgales iela 19 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (699)
 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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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
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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 17:52	08:19 15:46	09:00 15:31
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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_Vestas162

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 15:10/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 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
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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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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		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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SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Zemgailes iela 20 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (708)
 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 21:19	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 19:36	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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SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 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
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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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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SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 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	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
	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
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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
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	16:30	17:43	18:46	20:55	21:56	22:21	21:44	20:28	19:02	16:42	15:41	15:35
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	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		

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Zemgailes 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
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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 16:42	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
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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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SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Zemgales 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
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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
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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SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Zemgailes iela 30 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (725)
 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		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_Vestas162

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 15:10/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Zemgailes 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
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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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 21:30	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
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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
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 20:42	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 15:34
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	06:11 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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SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Zemgales iela 34 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (717)
Sunshine probability S (Average daily sunshine hours) []

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

No operational time reduction. It is assumed 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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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
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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												
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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SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Zemgailes iela 36 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (702)
 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
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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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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	07:40 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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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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SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Zemgailes iela 38 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (737)
 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_Vestas162

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 15:10/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Zemgailes 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 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
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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
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 17:29	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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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		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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SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Zemgailes iela 40 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (700)
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)	Sun set (hh:mm)	Minutes with flicker	First time (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_Vestas162 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
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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 21:46	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_Vestas162

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 15:10/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 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
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 16:06	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
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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 22:04	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 20:42	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
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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 15:34
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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SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Zemgailes 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
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
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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
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
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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 22:04	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 20:42	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
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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
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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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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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SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Zemgailes 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
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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
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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		

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Zemgailes iela 60 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (671)
Sunshine probability S (Average daily sunshine hours) []

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

No operational time reduction. It is assumed 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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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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SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Zemgailes 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
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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 15:35
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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SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 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
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	07:45 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 17:36	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)	Sun set (hh:mm)	Minutes with flicker	First time (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_Vestas162 Shadow receptor: Zemgailes iela 8 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (555)
Sunshine probability S (Average daily sunshine hours) []

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

No operational time reduction. It is assumed 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	07:45 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 17:36	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)	Sun set (hh:mm)	Minutes with flicker	First time (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_Vestas162 Shadow receptor: Zemgali - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (477)
 Sunshine probability S (Average daily sunshine hours) []

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

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 15:41	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	16:20 (11) 18:02	06:28 20:10	05:11 21:16	04:19 22:12
9	08:56 15:51	08:03 16:59	16:19 (11) 18:04	06:25 20:12	05:09 21:19	04:19 22:13
10	08:55 15:53	08:01 17:01	16:18 (11) 18:06	06:23 20:15	05:06 21:21	04:18 22:14
11	08:54 15:55	07:59 17:03	16:18 (11) 18:08	06:20 20:17	05:04 21:23	04:17 22:15
12	08:53 15:57	07:56 17:06	16:17 (11) 18:11	06:17 20:19	05:02 21:25	04:17 22:16
13	08:52 15:58	07:54 17:08	16:17 (11) 18:13	06:14 20:21	05:00 21:27	04:16 22:17
14	08:50 16:00	07:52 17:11	16:17 (11) 18:15	17:40 (4) 20:23	06:12 21:29	04:16 22:17
15	08:49 16:02	07:49 17:13	16:17 (11) 18:17	17:38 (4) 20:26	06:09 21:31	04:15 22:18
16	08:48 16:04	07:47 17:15	16:18 (11) 18:20	17:37 (4) 20:28	06:06 21:33	04:15 22:19
17	08:47 16:06	07:44 17:18	16:18 (11) 18:22	17:36 (4) 20:30	06:04 21:35	04:15 22:19
18	08:45 16:08	07:42 17:20	16:18 (11) 18:24	17:35 (4) 20:32	06:01 21:37	04:15 22:20
19	08:44 16:10	07:39 17:22	16:20 (11) 18:26	17:35 (4) 20:35	05:58 21:39	04:15 22:20
20	08:42 16:13	07:37 17:25	16:22 (11) 18:28	17:34 (4) 20:37	05:56 21:41	04:15 22:21
21	08:41 16:15	07:34 17:27	06:18 18:31	17:34 (4) 20:39	05:53 21:43	04:15 22:21
22	08:39 16:17	07:32 17:29	06:15 18:33	17:34 (4) 20:41	05:50 21:45	04:15 22:21
23	08:38 16:19	07:29 17:32	06:13 18:35	17:36 (4) 20:43	05:48 21:47	04:15 22:21
24	08:36 16:21	07:26 17:34	06:10 18:37	17:36 (4) 20:46	05:45 21:49	04:15 22:21
25	08:34 16:24	07:24 17:36	06:07 18:39	17:38 (4) 20:48	05:43 21:51	04:16 22:21
26	08:32 16:26	07:21 17:39	06:04 18:42	17:49 (4) 20:50	05:40 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			175			
Sun reduction			0.19			
Oper. time red.			1.00			
Wind dir. red.			1.00			
Total reduction			0.19			
Total, real			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_Vestas162

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 15:10/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Zemgali - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (477)
Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	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	15:48 (11) 15:56 (11)
2	04:21 22:19	05:11 21:33	06:17 20:14	07:20 18:50	8 16:29	15:56 (11) 15:54 (11)
3	04:22 22:19	05:13 21:31	06:19 20:12	07:22 18:48	5 16:27	15:50 (11) 15:51 (11)
4	04:23 22:18	05:15 21:28	06:21 20:09	07:25 18:45	1 16:25	15:51 (11) 15:34
5	04:24 22:17	05:17 21:26	06:23 20:06	07:27 18:42	16:23	15:33
6	04:25 22:16	05:19 21:24	06:25 20:03	07:29 18:39	16:39	15:32
7	04:26 22:15	05:21 21:21	06:27 20:00	07:31 18:37	16:41	15:32
8	04:27 22:14	05:23 21:19	06:29 19:58	07:33 18:34	16:18 16:16	15:32 15:31
9	04:28 22:13	05:26 21:17	06:32 19:55	07:35 18:31	07:43 16:14	08:44 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 16:10	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 18:18	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	04:41 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 22:01	05:45 20:54	06:51 19:30	18:26 (4) 18:36 (4)	07:55 18:07	15:56 15:29
19	04:44 22:00	05:47 20:52	06:53 19:27	18:23 (4) 18:37 (4)	07:58 18:04	08:08 15:29
20	04:46 21:58	05:49 20:49	06:55 19:24	18:21 (4) 18:38 (4)	08:00 18:02	08:10 15:29
21	04:48 21:57	05:51 20:47	06:57 19:21	18:20 (4) 18:39 (4)	08:02 17:59	16:56 (11) 16:58 (11)
22	04:49 21:55	05:53 20:44	06:59 19:18	18:19 (4) 18:39 (4)	2 17:02 (11)	15:51 15:49
23	04:51 21:53	05:55 20:41	07:01 19:16	18:19 (4) 18:40 (4)	11 17:04 (11)	08:17 15:48
24	04:53 21:51	05:58 20:39	07:03 19:13	18:18 (4) 18:39 (4)	14 17:05 (11)	08:19 15:46
25	04:55 21:49	06:00 20:36	07:05 19:10	18:18 (4) 18:39 (4)	17 15:48 (11)	08:21 15:45
26	04:57 21:47	06:02 20:33	07:07 19:07	18:18 (4) 18:36 (4)	18 15:47 (11)	08:23 15:43
27	04:59 21:45	06:04 20:31	07:10 19:04	18:18 (4) 18:33 (4)	19 15:47 (11)	08:25 15:42
28	05:01 21:43	06:06 20:28	07:12 19:02	18:19 (4) 18:30 (4)	20 15:46 (11)	08:27 15:41
29	05:03 21:41	06:08 20:25	07:14 18:59	18:20 (4) 18:27 (4)	20 15:47 (11)	08:29 15:39
30	05:05 21:39	06:10 20:23	07:16 18:56	18:22 (4) 18:25 (4)	17 16:04 (11)	15:39 15:37
31	05:07 21:37	06:12 20:20		07:25 16:34	15 15:47 (11)	09:00 15:38
Potential sun hours	538	474	386	321	241	207
Total, worst case			197	165	14	
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			91	47	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_Vestas162

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 15:10/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Zemites - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (485)
 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	14:51 (4)	08:21		07:13	16:31 (2)	06:48	05:27	04:27
	15:39	2	14:53 (4)	16:40	17:46	18	16:49 (2)	19:55	21:01
2	09:00	14:51 (4)	08:19		07:11	16:33 (2)	06:45	05:25	04:25
	15:41	3	14:54 (4)	16:42	17:48	13	16:46 (2)	19:57	21:03
3	09:00	14:51 (4)	08:17		07:08	16:36 (2)	06:42	05:23	04:24
	15:42	5	14:56 (4)	16:44	17:50	6	16:42 (2)	19:59	21:06
4	08:59	14:51 (4)	08:15		07:05		06:39	05:20	04:23
	15:43	7	14:58 (4)	16:47	17:53		20:01	21:08	22:07
5	08:59	14:51 (4)	08:12		07:03		06:36	05:18	04:22
	15:45	8	14:59 (4)	16:49	17:55		20:04	21:10	22:08
6	08:58	14:51 (4)	08:10		07:00		06:34	05:15	04:21
	15:46	10	15:01 (4)	16:52	17:57		20:06	21:12	22:09
7	08:57	14:51 (4)	08:08		06:57		06:31	05:13	04:20
	15:48	12	15:03 (4)	16:54	17:59		20:08	21:14	22:11
8	08:57	14:51 (4)	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	14:51 (4)	08:03		06:52		06:25	05:09	04:18
	15:51	16	15:07 (4)	16:59	18:04		20:12	21:19	22:13
10	08:55	14:52 (4)	08:01		06:49		06:23	05:06	04:18
	15:53	17	15:09 (4)	17:01	18:06		20:15	21:21	22:14
11	08:54	14:51 (4)	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	14:51 (4)	07:56		06:43		06:17	05:02	04:17
	15:57	22	15:13 (4)	17:06	18:11		20:19	21:25	22:16
13	08:52	14:51 (4)	07:54		06:41		06:14	05:00	04:16
	15:58	22	15:13 (4)	17:08	18:13		20:21	21:27	22:17
14	08:51	14:52 (4)	07:52		06:38		06:12	04:58	04:16
	16:00	22	15:14 (4)	17:11	18:15		20:24	21:29	22:18
15	08:49	14:52 (4)	07:49	16:34 (2)	06:35		06:09	04:56	04:15
	16:02	23	15:15 (4)	17:13	18:17		20:26	21:31	22:18
16	08:48	14:53 (4)	07:47	16:33 (2)	06:32		06:06	04:53	04:15
	16:04	23	15:16 (4)	17:15	18:20		20:28	21:33	22:19
17	08:47	14:53 (4)	07:44	16:31 (2)	06:29		06:04	04:51	04:15
	16:06	23	15:16 (4)	17:18	18:22		20:30	21:35	22:20
18	08:45	14:53 (4)	07:42	16:30 (2)	06:27		06:01	04:50	04:15
	16:08	23	15:16 (4)	17:20	18:24		20:32	21:37	22:20
19	08:44	14:53 (4)	07:39	16:29 (2)	06:24		05:58	04:48	04:15
	16:10	23	15:16 (4)	17:22	18:26		20:35	21:39	22:21
20	08:42	14:54 (4)	07:37	16:28 (2)	06:21		05:56	04:46	04:15
	16:13	23	15:17 (4)	17:25	18:28		20:37	21:41	22:21
21	08:41	14:55 (4)	07:34	16:27 (2)	06:18		05:53	04:44	04:15
	16:15	21	15:16 (4)	17:27	18:31		20:39	21:43	22:21
22	08:39	14:55 (4)	07:32	16:28 (2)	06:16		05:50	04:42	04:15
	16:17	21	15:16 (4)	17:29	18:33		20:41	21:45	22:21
23	08:38	14:56 (4)	07:29	16:27 (2)	06:13		05:48	04:40	04:15
	16:19	20	15:16 (4)	17:32	18:35		20:43	21:47	22:22
24	08:36	14:57 (4)	07:26	16:27 (2)	06:10		05:45	04:39	04:15
	16:21	19	15:16 (4)	17:34	18:37		20:46	21:49	22:22
25	08:34	14:58 (4)	07:24	16:28 (2)	06:07		05:43	04:37	04:16
	16:24	17	15:15 (4)	17:36	18:39		20:48	21:51	22:22
26	08:32	15:00 (4)	07:21	16:28 (2)	06:04		05:40	04:35	04:16
	16:26	14	15:14 (4)	17:39	18:42		20:50	21:53	22:21
27	08:31	15:01 (4)	07:19	16:29 (2)	06:02		05:37	04:34	04:17
	16:28	11	15:12 (4)	17:41	18:44		20:52	21:54	22:21
28	08:29	15:04 (4)	07:16	16:29 (2)	05:59		05:35	04:32	04:17
	16:30	6	15:10 (4)	17:43	18:46		20:55	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	447		289		37				
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	49		56		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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SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Zemites - Shadow Receptor: 1.0×1.0 Azimuth: 3.1° Slope: 90.0° (485)
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 20 14:33 (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 18 14:34 (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 16 14:50 (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 14 14:49 (4)
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 12 14:48 (4)
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 10 14:47 (4)
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 9 14:47 (4)
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 7 14:46 (4)
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 5 14:44 (4)
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 3 14:44 (4)
11	04:31 22:11	05:30 21:12	06:36 19:49	07:40 18:26	10	17:08 (2) 17:18 (2)	07:50 16:10 2 14:43 (4)
12	04:33 22:10	05:32 21:10	06:38 19:47	07:42 18:23	15	17:06 (2) 17:21 (2)	07:53 16:07 15:29
13	04:34 22:09	05:34 21:07	06:40 19:44	07:44 18:20	19	17:03 (2) 17:22 (2)	07:55 16:05 15:29
14	04:36 22:08	05:36 21:05	06:42 19:41	07:47 18:18	21	17:02 (2) 17:23 (2)	07:57 16:03 6 14:37 (4)
15	04:37 22:06	05:38 21:02	06:44 19:38	07:49 18:15	23	17:00 (2) 17:23 (2)	07:59 16:02 11 14:45 (4)
16	04:39 22:05	05:40 21:00	06:46 19:35	07:51 18:12	24	17:00 (2) 17:24 (2)	08:02 16:00 14 14:47 (4)
17	04:40 22:03	05:43 20:57	06:48 19:33	07:53 18:10	25	16:59 (2) 17:24 (2)	08:04 15:58 17 14:48 (4)
18	04:42 22:02	05:45 20:54	06:51 19:30	07:55 18:07	26	16:59 (2) 17:25 (2)	08:06 15:56 19 14:50 (4)
19	04:44 22:00	05:47 20:52	06:53 19:27	07:58 18:04	26	16:58 (2) 17:24 (2)	08:08 15:54 20 14:50 (4)
20	04:46 21:58	05:49 20:49	06:55 19:24	08:00 18:02	26	16:58 (2) 17:24 (2)	08:10 15:52 21 14:51 (4)
21	04:47 21:57	05:51 20:47	06:57 19:21	08:02 17:59	25	16:59 (2) 17:24 (2)	08:13 15:51 22 14:52 (4)
22	04:49 21:55	05:53 20:44	06:59 19:18	08:04 17:57	23	16:59 (2) 17:22 (2)	08:15 15:49 23 14:53 (4)
23	04:51 21:53	05:55 20:41	07:01 19:16	08:07 17:54	20	17:00 (2) 17:20 (2)	08:17 15:48 23 14:53 (4)
24	04:53 21:51	05:58 20:39	07:03 19:13	08:09 17:51	17	17:00 (2) 17:17 (2)	08:19 15:46 23 14:53 (4)
25	04:55 21:49	06:00 20:36	07:05 19:10	07:11 16:49	14	16:01 (2) 16:15 (2)	08:21 15:45 23 14:54 (4)
26	04:57 21:47	06:02 20:33	07:08 19:07	07:14 16:46	10	16:02 (2) 16:12 (2)	08:23 15:43 23 14:54 (4)
27	04:59 21:45	06:04 20:31	07:10 19:04	07:16 16:44	5	16:05 (2) 16:10 (2)	08:25 15:42 23 14:54 (4)
28	05:01 21:43	06:06 20:28	07:12 19:02	07:18 16:41		08:27 15:41	09:01 15:35 23 14:55 (4)
29	05:03 21:41	06:08 20:25	07:14 18:59	07:20 16:39		08:29 15:39	09:01 15:35 23 14:55 (4)
30	05:05 21:39	06:10 20:23	07:16 18:56	07:23 16:37		08:31 15:38	09:01 15:37 22 14:55 (4)
31	05:07 21:37	06:13 20:20	07:25 16:34	07:25 16:34			09:00 15:38
Potential sun hours	538	474	386	321		241	207
Total, worst case				329		336	116
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				93		26	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_Vestas162

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 15:10/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Zveru ferma - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (585)
 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							06:48			19:04 (12)	05:28		19:53 (4)	04:27	
	15:39	16:40	17:46							19:55	20		19:24 (12)	21:01	21	20:14 (4)	22:02	
2	09:00	08:19	07:11							06:45			19:05 (12)	05:25		19:54 (4)	04:25	
	15:41	16:42	17:48							19:57	19		19:24 (12)	21:03	19	20:13 (4)	22:04	
3	08:59	08:17	07:08							06:42			19:05 (12)	05:23		19:55 (4)	04:24	
	15:42	16:44	17:50							19:59	18		19:23 (12)	21:05	18	20:13 (4)	22:05	
4	08:59	08:14	07:05							06:39			19:05 (12)	05:20		19:56 (4)	04:23	
	15:43	16:47	17:53							20:01	16		19:21 (12)	21:08	16	20:12 (4)	22:07	
5	08:58	08:12	07:02							06:36			19:06 (12)	05:18		19:57 (4)	04:22	
	15:45	16:49	17:55							20:04	13		19:19 (12)	21:10	13	20:10 (4)	22:08	
6	08:58	08:10	07:00							06:34			19:09 (12)	05:16		19:59 (4)	04:21	
	15:46	16:52	17:57							20:06	8		19:17 (12)	21:12	8	20:07 (4)	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	
	15:50	16:56	18:02							20:10				21:16			22:12	
9	08:56	08:03	06:52							06:25				05:09			04:19	
	15:51	16:59	18:04							20:12				21:18			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							17:35 (11)				05:02			04:17	
	15:57	17:06	18:11			7				17:42 (11)				21:25			22:16	
13	08:52	07:54	06:41							17:32 (11)				05:00			04:16	
	15:58	17:08	18:13			12				17:44 (11)				21:27			22:17	
14	08:50	07:52	06:38							17:30 (11)				04:58			04:16	
	16:00	17:11	18:15			16				17:46 (11)				21:29			22:17	
15	08:49	07:49	06:35							17:29 (11)				04:56			04:15	
	16:02	17:13	18:17			19				17:48 (11)				21:31			22:18	
16	08:48	07:47	06:32							17:28 (11)				04:54			04:15	
	16:04	17:15	18:20			22				17:50 (11)				21:33			22:19	
17	08:47	07:44	06:29							17:28 (11)				04:52			04:15	
	16:06	17:18	18:22			24				17:52 (11)				21:35			22:19	
18	08:45	07:42	06:27							17:27 (11)				04:50			04:15	
	16:08	17:20	18:24			25				17:52 (11)				21:37			22:20	
19	08:44	07:39	06:24							17:26 (11)				04:48			04:15	
	16:11	17:22	18:26			25				17:51 (11)				21:39			22:20	
20	08:42	07:37	06:21							17:26 (11)			20:01 (4)	04:46			04:15	
	16:13	17:25	18:28			25				17:51 (11)			4	20:05 (4)	21:41		22:21	
21	08:41	07:34	06:18							17:26 (11)				19:58 (4)	04:44		04:15	
	16:15	17:27	18:31			24				17:50 (11)			9	20:07 (4)	21:43		22:21	
22	08:39	07:32	06:15							17:26 (11)				19:57 (4)	04:42		04:15	
	16:17	17:29	18:33			23				17:49 (11)			12	20:09 (4)	21:45		22:21	
23	08:38	07:29	06:13							17:27 (11)				19:55 (4)	04:40		04:15	
	16:19	17:32	18:35			22				17:49 (11)			16	20:11 (4)	21:47		22:21	
24	08:36	07:26	06:10							17:27 (11)				19:55 (4)	04:39		04:16	
	16:21	17:34	18:37			20				17:47 (11)			18	20:13 (4)	21:49		22:21	
25	08:34	07:24	06:07							17:28 (11)				19:54 (4)	04:37		04:16	
	16:24	17:36	18:39			17				17:45 (11)			22	20:16 (4)	21:51		22:21	
26	08:32	07:21	06:04							17:30 (11)				19:53 (4)	04:35		04:16	
	16:26	17:39	18:42			15				18:12 (12)			23	20:16 (4)	21:52		22:21	
27	08:30	07:19	06:01							17:34 (11)				19:53 (4)	04:34		04:17	
	16:28	17:41	18:44			10				18:14 (12)			23	20:16 (4)	21:54		22:21	
28	08:29	07:16	05:59							18:08 (12)				19:53 (4)	04:32		04:18	
	16:30	17:43	18:46			9				18:17 (12)			22	20:15 (4)	21:56		22:21	
29	08:27		06:56							19:06 (12)				19:53 (4)	04:31		04:18	
	16:33		19:48			13				19:19 (12)			22	20:15 (4)	21:58		22:21	
30	08:25		06:53							19:05 (12)				19:53 (4)	04:29		04:19	
	16:35		19:50			16				19:21 (12)			22	20:15 (4)	21:59		22:20	
31	08:23		06:50							19:05 (12)					04:28			
	16:37		19:53			18				19:23 (12)				22:01				
Potential sun hours	227	262	365							429				515			539	
Total, worst case						362				287				95				
Sun reduction						0.40				0.43				0.58				
Oper. time red.						1.00				1.00				1.00				
Wind dir. red.						1.00				1.00				1.00				
Total reduction						0.40				0.43				0.58				
Total, real						146				122				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_Vestas162

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 15:10/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Zveru ferma - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (585)
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	18:13 (11) 18:22 (11)	07:27 16:32
2	04:21 22:19	05:11 21:33	06:17 20:14	07:20 18:50	18:16 (11) 18:19 (11)	16:32 15:36
3	04:22 22:19	05:13 21:31	06:19 20:12	07:22 18:48	18:19 (11)	16:29 15:35
4	04:23 22:18	05:15 21:28	06:21 20:09	07:25 18:45		16:27 15:34
5	04:24 22:17	05:17 21:26	06:23 20:06	07:27 18:42		16:25 15:33
6	04:25 22:16	05:19 21:24	20:12 (4) 20:03	19:05 (12) 19:13 (12)		16:23 15:33
7	04:26 22:15	05:21 21:21	20:08 (4) 20:00	19:03 (12) 19:15 (12)		16:20 15:32
8	04:27 22:14	05:23 21:19	20:06 (4) 20:20 (4)	19:01 (12) 19:16 (12)		16:18 15:31
9	04:29 22:13	05:26 21:17	20:05 (4) 20:21 (4)	18:59 (12) 19:17 (12)		16:16 15:31
10	04:30 22:12	05:28 21:14	20:04 (4) 20:22 (4)	18:58 (12) 19:17 (12)		16:14 15:30
11	04:31 22:11	05:30 21:12	20:03 (4) 20:23 (4)	18:57 (12) 19:17 (12)		16:12 15:30
12	04:33 22:10	05:32 21:09	20:01 (4) 20:22 (4)	18:57 (12) 19:16 (12)		16:10 15:29
13	04:34 22:09	05:34 21:07	20:01 (4) 20:23 (4)	18:57 (12) 19:13 (12)		16:08 15:29
14	04:36 22:07	05:36 21:05	20:00 (4) 20:23 (4)	18:57 (12) 19:10 (12)		16:05 15:29
15	04:37 22:06	05:38 21:02	20:00 (4) 20:23 (4)	18:57 (12) 19:07 (12)		16:04 15:29
16	04:39 22:04	05:41 20:59	20:00 (4) 20:23 (4)	18:57 (12) 19:04 (12)		16:02 15:29
17	04:41 22:03	05:43 20:57	20:00 (4) 20:22 (4)	18:57 (12) 19:01 (12)		16:00 15:29
18	04:42 22:01	05:45 20:54	20:00 (4) 20:21 (4)	18:57 (12) 18:33 (11)		15:58 15:29
19	04:44 22:00	05:47 20:52	20:00 (4) 20:19 (4)	18:57 (12) 18:34 (11)		15:56 15:29
20	04:46 21:58	05:49 20:49	20:01 (4) 20:16 (4)	18:13 (11) 18:34 (11)		15:54 15:29
21	04:48 21:56	05:51 20:47	20:02 (4) 20:14 (4)	18:11 (11) 18:35 (11)		15:53 15:30
22	04:49 21:55	05:53 20:44	20:03 (4) 20:11 (4)	18:10 (11) 18:35 (11)		15:51 15:30
23	04:51 21:53	05:55 20:41	20:05 (4) 20:09 (4)	18:11 (11) 18:35 (11)		15:49 15:31
24	04:53 21:51	05:58 20:39	07:03 19:13	18:10 (11) 18:35 (11)		15:48 15:31
25	04:55 21:49	06:00 20:36	07:05 19:10	18:09 (11) 18:35 (11)		15:46 15:32
26	04:57 21:47	06:02 20:33	07:07 19:07	18:09 (11) 18:34 (11)		15:45 15:33
27	04:59 21:45	06:04 20:31	07:10 19:04	18:09 (11) 18:33 (11)		15:44 15:34
28	05:01 21:43	06:06 20:28	07:12 19:02	18:09 (11) 18:30 (11)		15:42 15:35
29	05:03 21:41	06:08 20:25	07:14 18:59	18:10 (11) 18:27 (11)		15:41 15:36
30	05:05 21:39	06:10 20:23	07:16 18:56	18:12 (11) 18:25 (11)		15:39 15:37
31	05:07 21:37	06:13 20:20		07:25 16:34		15:38 15:38
Potential sun hours	538	474	386	321	241	207
Total, worst case		294	453	12		
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		148	209	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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SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Zile - 1 - Shadow Receptor: 1.0×1.0 Azimuth: 3.1° Slope: 90.0° (447)
 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	04:20 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
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	08:47 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	04:43 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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SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Zile 3 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (583)
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
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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)	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_Vestas162

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

15/01/2026 15:10/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Zile 4 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (445)
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
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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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SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 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.

	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 15:37
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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	06:06 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 19:49	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 15:39	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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SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 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	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	07:11 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	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 16:52	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	05:09 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	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 22:12	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	07:53 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	08:50 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 16:02	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 21:00	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	06:51 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	04:48 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	04:39 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												
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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SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Corzemnieki - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (689)
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	07:18	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	16:30	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
	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	06:28	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
	15:49	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	18:29	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	21:30	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	18:18	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	04:41	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
	16:11	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	22:22	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	20:42	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	17:52	15:46	15:31
25	08:35	07:24	06:07	05:43	04:37	04:16	04:55	06:00	07:06	07:12	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	06:11	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	15:38	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		

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 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.

	January	February	March	April	May	June
1	09:00	08:21	09:26 (7)	07:14	07:44 (8)	06:48
	15:40	16:40	36 10:02 (7)	17:46	19 08:03 (8)	19:55
2	09:00	08:19	09:27 (7)	07:11	07:42 (8)	06:45
	15:41	16:42	36 10:03 (7)	17:48	22 08:04 (8)	19:57
3	09:00	08:17	09:27 (7)	07:08	07:40 (8)	06:42
	15:42	16:45	36 10:03 (7)	17:51	24 08:04 (8)	20:00
4	08:59	08:15	09:27 (7)	07:06	07:39 (8)	06:39
	15:44	16:47	36 10:03 (7)	17:53	26 08:05 (8)	20:02
5	08:59	08:13	09:27 (7)	07:03	07:39 (8)	06:37
	15:45	16:49	36 10:03 (7)	17:55	27 08:06 (8)	20:04
6	08:58	08:10	09:28 (7)	07:00	07:39 (8)	06:34
	15:47	16:52	35 10:03 (7)	17:57	27 08:06 (8)	20:06
7	08:58	08:08	09:28 (7)	06:57	07:38 (8)	06:31
	15:48	16:54	35 10:03 (7)	18:00	27 08:05 (8)	20:08
8	08:57	08:06	09:29 (7)	06:55	07:38 (8)	06:28
	15:50	16:57	34 10:03 (7)	18:02	27 08:05 (8)	20:11
9	08:56	08:04	09:29 (7)	06:52	07:38 (8)	06:26
	15:52	16:59	33 10:02 (7)	18:04	26 08:04 (8)	20:13
10	08:55	08:01	09:30 (7)	06:49	07:39 (8)	06:23
	15:53	17:01	32 10:02 (7)	18:06	25 08:04 (8)	20:15
11	08:54	07:59	09:31 (7)	06:46	07:39 (8)	06:20
	15:55	17:04	29 10:00 (7)	18:09	24 08:03 (8)	20:17
12	08:53	07:57	09:31 (7)	06:44	07:39 (8)	06:17
	15:57	17:06	28 09:59 (7)	18:11	23 08:02 (8)	20:19
13	08:52	07:54	09:33 (7)	06:41	07:40 (8)	06:15
	15:59	17:09	25 09:58 (7)	18:13	20 08:00 (8)	20:22
14	08:51	07:52	09:34 (7)	06:38	07:22 (6)	06:12
	16:01	17:11	22 09:56 (7)	18:15	21 07:58 (8)	20:24
15	08:50	07:49	09:37 (7)	06:35	07:16 (6)	06:09
	16:03	17:13	17 09:54 (7)	18:18	28 07:56 (8)	20:26
16	08:48	07:47	09:40 (7)	06:33	07:13 (6)	06:07
	16:05	17:16	10 09:50 (7)	18:20	22 07:35 (6)	20:28
17	08:47	07:45		06:30	07:10 (6)	06:04
	16:07	17:18		18:22	27 07:37 (6)	20:30
18	08:46	09:37 (7)	07:42	06:27	07:08 (6)	06:01
	16:09	9 09:46 (7)	17:20	18:24	30 07:38 (6)	20:33
19	08:44	09:35 (7)	07:40	06:24	07:06 (6)	05:59
	16:11	14 09:49 (7)	17:23	18:27	33 07:39 (6)	20:35
20	08:43	09:33 (7)	07:37	06:21	07:05 (6)	05:56
	16:13	18 09:51 (7)	17:25	18:29	34 07:39 (6)	20:37
21	08:41	09:32 (7)	07:34	06:19	07:04 (6)	05:53
	16:15	20 09:52 (7)	17:27	18:31	37 07:41 (6)	20:39
22	08:40	09:31 (7)	07:32	06:16	07:03 (6)	05:51
	16:17	23 09:54 (7)	17:30	18:33	38 07:41 (6)	20:42
23	08:38	09:30 (7)	07:29	06:13	07:02 (6)	05:48
	16:19	25 09:55 (7)	17:32	18:35	39 07:41 (6)	20:44
24	08:36	09:29 (7)	07:27	06:10	07:01 (6)	05:45
	16:22	28 09:57 (7)	17:34	18:38	40 07:41 (6)	20:46
25	08:34	09:29 (7)	07:24	06:07	07:01 (6)	05:43
	16:24	29 09:58 (7)	17:37	18:40	39 07:40 (6)	20:48
26	08:33	09:28 (7)	07:22	06:05	06:31 (9)	05:40
	16:26	31 09:59 (7)	17:39	18:42	47 07:41 (6)	20:50
27	08:31	09:28 (7)	07:19	06:02	06:28 (9)	05:38
	16:28	32 10:00 (7)	17:41	10 07:58 (8)	52 07:40 (6)	20:53
28	08:29	09:28 (7)	07:16	07:46 (8)	06:25 (9)	05:35
	16:31	33 10:01 (7)	17:44	15 08:01 (8)	56 07:40 (6)	20:55
29	08:27	09:27 (7)		06:56	07:22 (9)	05:33
	16:33	34 10:01 (7)		19:49	58 08:39 (6)	20:57
30	08:25	09:27 (7)		06:53	07:19 (9)	05:30
	16:35	34 10:01 (7)		19:51	61 08:38 (6)	20:59
31	08:23	09:27 (7)		06:51	07:19 (9)	
	16:38	35 10:02 (7)		19:53	61 08:38 (6)	
Potential sun hours	227	262	365	429	515	539
Total, worst case	365	505	1040	686	107	
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	98	419	292	62	

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)

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 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 22:20	05:09 21:35	06:15 20:17	07:19 18:53	08:19 (8) 16:32	08:59 (7) 15:37
2	04:21 22:20	05:11 21:33	06:17 20:15	07:21 18:51	08:17 (8) 16:30	08:59 (7) 15:36
3	04:22 22:19	05:13 21:31	06:19 20:12	07:23 18:48	08:16 (8) 16:27	08:59 (7) 15:35
4	04:23 22:18	05:15 21:29	06:21 20:09	07:25 18:45	08:16 (8) 16:25	08:58 (7) 15:34
5	04:24 22:18	05:17 21:26	06:23 20:06	07:27 18:42	08:15 (8) 16:23	08:58 (7) 15:34
6	04:25 22:17	05:20 21:24	06:26 20:04	07:29 18:40	08:14 (8) 16:21	08:57 (7) 15:33
7	04:26 22:16	05:22 21:22	06:28 20:01	07:31 18:37	08:14 (8) 16:18	08:57 (7) 15:32
8	04:27 22:15	05:24 21:20	06:30 19:58	07:34 18:34	08:14 (8) 16:16	08:57 (7) 15:31
9	04:29 22:14	05:26 21:17	06:32 19:55	07:36 18:31	08:14 (8) 16:14	08:58 (7) 15:31
10	04:30 22:13	05:28 21:15	06:34 19:52	07:38 18:29	08:14 (8) 16:12	08:58 (7) 15:30
11	04:32 22:12	05:30 21:12	06:36 19:50	07:40 18:26	08:15 (8) 16:10	08:58 (7) 15:30
12	04:33 22:10	05:32 21:10	06:38 19:47	07:42 18:23	08:16 (8) 16:08	08:59 (7) 15:30
13	04:34 22:09	05:34 21:07	06:40 19:44	07:45 18:21	08:17 (8) 16:06	08:59 (7) 15:29
14	04:36 22:08	05:37 21:05	06:42 19:41	07:47 18:18	08:19 (8) 16:04	09:00 (7) 15:29
15	04:38 22:06	05:39 21:02	06:45 19:38	07:49 18:15	08:23 (8) 16:02	09:00 (7) 15:29
16	04:39 22:05	05:41 21:00	06:47 19:36	07:51 18:13	08:25 (8) 16:00	09:01 (7) 15:29
17	04:41 22:03	05:43 20:57	06:49 19:33	07:53 18:10	08:27 (8) 15:58	09:02 (7) 15:29
18	04:43 22:02	05:45 20:55	06:51 19:30	07:56 18:07	08:29 (8) 15:56	09:03 (7) 15:29
19	04:44 22:00	05:47 20:52	06:53 19:27	07:58 18:05	08:31 (8) 15:55	09:05 (7) 15:29
20	04:46 21:59	05:49 20:50	06:55 19:24	08:00 18:02	08:33 (8) 15:53	09:06 (7) 15:30
21	04:48 21:57	05:51 20:47	06:57 19:22	08:02 17:59	08:35 (8) 15:51	09:07 (7) 15:30
22	04:50 21:55	05:54 20:44	06:59 19:19	08:05 17:57	08:37 (8) 15:50	09:09 (7) 15:31
23	04:52 21:53	05:56 20:42	07:01 19:16	08:07 17:54	08:39 (8) 15:48	09:11 (7) 15:31
24	04:53 21:52	05:58 20:39	07:04 19:13	08:09 17:52	08:41 (8) 15:46	09:14 (7) 15:32
25	04:55 21:50	06:00 20:36	07:06 19:10	08:12 17:49	08:43 (8) 15:45	09:16 (7) 15:32
26	04:57 21:48	06:02 20:34	07:08 19:07	08:14 17:47	09:08 (7) 15:44	09:18 (7) 15:33
27	04:59 21:46	06:04 20:31	07:10 19:05	08:16 17:44	09:10 (7) 15:42	09:20 (7) 15:34
28	05:01 21:44	06:06 20:28	07:12 19:02	08:18 17:42	09:12 (7) 15:41	09:22 (7) 15:35
29	05:03 21:42	06:09 20:26	07:14 18:59	08:21 17:39	09:14 (7) 15:40	09:24 (7) 15:36
30	05:05 21:40	06:11 20:23	07:16 18:56	08:23 17:37	09:16 (7) 15:38	09:26 (7) 15:37
31	05:07 21:38	06:13 20:20		08:25 17:35	09:18 (7) 15:36	09:28 (7) 15:38
Potential sun hours	538	474	386	321	241	207
Total, worst case		433	1120	475	708	
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		218	517	134	56	

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_Vestas162

Licensed user:

SIA Estonian, Latvian & Lithuanian environment
Vilandes 3-6
LV-1010 Riga
0037167242411
Baiba / baiba.ozolina@environment.lv
Calculated:
15/01/2026 15:10/4.1.254

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Kirš i - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (504)
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	15:53 (4)	07:13	17:10 (2)	06:47	05:27	04:27	04:20	05:09	06:15	07:18
2	15:39	16:40	16:03 (4)	17:46	17:16 (2)	19:55	21:01	22:02	22:20	21:35	18:53	16:32
3	09:00	08:19	15:53 (4)	07:11	17:09 (2)	06:45	05:25	04:25	04:21	05:11	06:17	07:20
4	15:40	16:42	16:06 (4)	17:48	17:18 (2)	19:57	21:03	22:04	22:19	21:33	18:50	16:29
5	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
6	15:42	16:44	16:08 (4)	17:50	17:20 (2)	19:59	21:06	22:05	22:19	21:31	18:48	16:27
7	08:59	08:15	15:53 (4)	07:05	17:07 (2)	06:39	05:20	04:23	04:22	05:15	06:21	07:25
8	15:43	16:47	16:11 (4)	17:52	17:22 (2)	20:01	21:08	22:07	22:18	21:28	18:45	16:25
9	08:59	08:12	15:53 (4)	07:02	17:06 (2)	06:36	05:18	04:22	04:24	05:17	06:23	07:27
10	15:45	16:49	16:12 (4)	17:55	17:25 (2)	20:04	21:10	22:08	22:17	21:26	18:42	16:22
11	08:58	08:10	15:53 (4)	07:00	17:07 (2)	06:34	05:15	04:21	04:25	05:19	06:25	07:29
12	15:46	16:52	16:12 (4)	17:57	17:26 (2)	20:06	21:12	22:09	22:16	21:24	18:39	16:20
13	08:57	08:08	15:54 (4)	06:57	17:07 (2)	06:31	05:13	04:20	04:26	05:21	06:27	07:31
14	15:48	16:54	16:12 (4)	17:59	17:25 (2)	20:08	21:14	22:11	22:16	21:22	18:37	16:18
15	08:56	08:06	15:54 (4)	06:54	17:07 (2)	06:28	05:11	04:19	04:27	05:23	06:29	07:33
16	15:49	16:56	16:11 (4)	18:02	17:24 (2)	20:10	21:16	22:12	22:15	21:19	18:34	16:16
17	08:56	08:03	15:55 (4)	06:52	17:07 (2)	06:25	05:09	04:18	04:28	05:26	06:32	07:36
18	15:51	16:59	16:10 (4)	18:04	17:23 (2)	20:12	21:19	22:13	22:14	21:17	18:31	16:14
19	08:55	08:01	15:56 (4)	06:49	17:08 (2)	06:23	05:06	04:18	04:30	05:28	06:34	07:38
20	15:53	17:01	16:09 (4)	18:06	17:21 (2)	20:15	21:21	22:14	22:12	21:14	18:28	16:12
21	08:54	07:59	15:59 (4)	06:46	17:12 (2)	06:20	05:04	04:17	04:31	05:30	06:36	07:40
22	15:55	17:03	16:07 (4)	18:08	17:19 (2)	20:17	21:23	22:15	22:11	21:12	18:26	16:09
23	08:53	07:56		06:43		06:17	05:02	04:17	04:33	05:32	06:38	07:42
24	15:56	17:06		18:11		20:19	21:25	22:16	22:10	21:10	18:23	16:07
25	08:52	07:54		06:41		06:14	05:00	04:16	04:34	05:34	06:40	07:44
26	15:58	17:08		18:13		20:21	21:27	22:17	22:09	21:07	18:20	16:05
27	08:51	07:52		06:38		06:12	04:58	04:16	04:36	05:36	06:42	07:46
28	16:00	17:11		18:15		20:23	21:29	22:18	22:07	21:05	18:18	16:03
29	08:49	07:49		06:35		06:09	04:56	04:15	04:37	05:38	06:44	07:49
30	16:02	17:13		18:17		20:26	21:31	22:18	22:06	21:02	18:15	16:02
31	08:48	07:47		06:32		06:06	04:53	04:15	04:39	05:40	06:46	07:51
32	16:04	17:15		18:20		20:28	21:33	22:19	22:05	21:00	18:35	16:12
33	08:47	07:44		06:29		06:04	04:51	04:15	04:40	05:43	06:48	07:53
34	16:06	17:18		18:22		20:30	21:35	22:20	22:03	20:57	19:32	18:10
35	08:45	07:42		06:27		06:01	04:49	04:15	04:42	05:45	06:51	07:55
36	16:08	17:20		18:24		20:32	21:37	22:20	22:02	20:54	19:30	18:07
37	08:44	07:39		06:24		05:58	04:48	04:15	04:44	05:47	06:53	07:58
38	16:10	17:22		18:26		20:35	21:39	22:20	22:00	20:52	19:27	18:04
39	08:42	07:37		06:21		05:56	04:46	04:15	04:46	05:49	06:55	08:00
40	16:13	17:25		18:28		20:37	21:41	22:21	21:58	20:49	19:24	18:02
41	08:41	07:34		06:18		05:53	04:44	04:15	04:47	05:51	06:57	08:02
42	16:15	17:27		18:31		20:39	21:43	22:21	21:57	20:47	19:21	17:59
43	08:39	07:32		06:15		05:50	04:42	04:15	04:49	05:53	06:59	08:04
44	16:17	17:29		18:33		20:41	21:45	22:21	21:55	20:44	19:18	17:56
45	08:38	07:29		06:13		05:48	04:40	04:15	04:51	05:55	07:01	08:07
46	16:19	17:32		18:35		20:43	21:47	22:21	21:53	20:41	19:16	17:54
47	08:36	07:26		06:10		05:45	04:38	04:15	04:53	05:58	07:03	08:09
48	16:21	17:34		18:37		20:46	21:49	22:22	21:51	20:39	19:13	17:51
49	08:34	07:24		06:07		05:43	04:37	04:16	04:55	06:00	07:05	07:11
50	16:24	17:36		18:39		20:48	21:51	22:21	21:49	20:36	19:10	16:49
51	08:32	07:21		06:04		05:40	04:35	04:16	04:57	06:02	07:07	07:14
52	16:26	17:39		18:42		20:50	21:52	22:21	21:47	20:33	19:07	16:46
53	08:31	07:19		06:01		05:37	04:34	04:17	04:59	06:04	07:10	07:16
54	16:28	17:41		18:44		20:52	21:54	22:21	21:45	20:31	19:04	16:44
55	08:29	07:16	17:11 (2)	05:59		05:35	04:32	04:17	05:01	06:06	07:12	07:18
56	16:30	17:43	17:13 (2)	18:46		20:54	21:56	22:21	21:43	20:28	19:02	16:41
57	08:27			06:56		05:32	04:31	04:18	05:03	06:08	07:14	07:20
58	16:33			19:48		20:57	21:58	22:21	21:41	20:25	18:59	16:39
59	08:25	15:55 (4)		06:53		05:30	04:29	04:19	05:05	06:10	07:16	07:23
60	16:35	3 15:58 (4)		19:50		20:59	21:59	22:20	21:39	20:23	18:56	16:37
61	08:23	15:53 (4)		06:50		04:28	22:01	05:07	06:12	07:25	16:34	15:28 (4)
62	16:37	7 16:00 (4)		19:53		22:01		21:37	20:20	16:34	9 15:37 (4)	241
Potential sun hours	227	262	365	429	515	539	538	474	386	321	165	169
Total, worst case	10	168	152	0.40							0.28	0.08
Sun reduction	0.11	0.19	0.40								1.00	1.00
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								0.28	0.08
Total, real	1	33	61								47	13

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)

SHADOW - Calendar

Calculation: Flickering_Valka_Vestas162 Shadow receptor: Ž uldini 2 km dzivojama maja Nr.1 - Shadow Receptor: 1.0 × 1.0 Azimuth: 3.1° Slope: 90.0° (579) 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	09:00 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
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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)	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		