

Project:

Flickering_Valka_Nordex175

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

16/01/2026 09:49/4.1.254

SHADOW - Calendar per WTG

Calculation: Flickering_Valka_Nordex175 WTG: 1 - NORDEX N175/6.X 6800 175.0 !- hub: 162.0 m (TOT: 249.5 m) (37)
Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) []

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

No operational time reduction. It is assumed 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 09:43:09:45/2 15:39 09:54:10:27/33	08:21 09:33:10:01/28 16:40 10:02:10:46/44	07:13 06:48 05:28 04:27 04:20 05:09 06:15 07:18	06:48 05:28 04:27 04:20 05:09 06:15 07:18	05:28 04:27 04:20 05:09 06:15 07:18	04:27 04:20 05:09 06:15 07:18	04:20 05:09 06:15 07:18	05:09 06:15 07:18	06:15 07:18	07:18	07:27 09:39:10:09/30 16:32 15:51:15:56/5	08:33 09:16:09:39/23 15:37 04:12:10:19/37
2	09:00 09:43:09:47/4 15:41 09:55:10:28/33	08:19 09:33:10:00/27 16:42 10:02:10:46/44	07:11 06:45 05:25 04:26 04:21 05:11 06:17 07:21	06:45 05:25 04:26 04:21 05:11 06:17 07:21	05:25 04:26 04:21 05:11 06:17 07:21	04:26 04:21 05:11 06:17 07:21	04:21 05:11 06:17 07:21	05:11 06:17 07:21	06:17 07:21	07:21	07:30 09:38:10:11/33 16:30 15:36 09:18:09:39/21	08:35 09:18:09:39/21 15:37 04:12:10:19/37
3	09:00 09:42:09:48/6 15:42 09:55:10:29/34	08:17 09:35:09:59/24 16:45 10:03:10:47/44	07:08 06:42 05:23 04:24 04:22 05:13 06:19 07:23	06:42 05:23 04:24 04:22 05:13 06:19 07:23	05:23 04:24 04:22 05:13 06:19 07:23	04:24 04:22 05:13 06:19 07:23	04:22 05:13 06:19 07:23	05:13 06:19 07:23	06:19 07:23	07:23	07:32 09:37:10:13/36 16:27 15:35 09:42:10:19/37	08:36 09:20:09:39/19 15:35 09:42:10:19/37
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Project:

Flickering_Valka_Nordex175

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

16/01/2026 09:49/4.1.254

SHADOW - Calendar per WTG

Calculation: Flickering_Valka_Nordex175 WTG: 2 - NORDEX N175/6.X 6800 175.0 !-! hub: 162.0 m (TOT: 249.5 m) (36)
Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

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

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

	January		February		March		April		May		June	
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	15:41		16:42		17:48	16:57-17:18/21	19:57		21:03		22:04	
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	16:06		17:18		18:22		20:30		21:35		22:20	
18	08:45		07:42	15:54-16:48/54	06:27		06:01	18:20-18:46/26	04:50		04:15	21:18-21:37/19
	16:08		17:20		18:24		20:32		21:37		22:20	
19	08:44		07:39	15:57-16:51/54	06:24		05:58	18:22-18:43/21	04:48		04:15	21:18-21:38/20
	16:11		17:22		18:26		20:35		21:39		22:21	
20	08:43		07:37	16:00-16:53/53	06:21	17:34-17:47/13	05:56	18:27-18:39/12	04:46		04:15	21:18-21:38/20
	16:13		17:25		18:29		20:37		21:41		22:21	
21	08:41		07:34	16:04-16:55/51	06:18	17:29-17:51/22	05:53	20:04-20:07/3	04:44		04:15	21:18-21:38/20
	16:15		17:27		18:31		20:39		21:43		22:21	
22	08:39		07:32	16:09-16:57/48	06:16	17:27-17:54/27	05:50	20:03-20:09/6	04:42		04:15	21:18-21:38/20
	16:17		17:30		18:33		20:41		21:45		22:21	
23	08:38		07:29	16:13-16:57/44	06:13	17:25-17:56/31	05:48	20:01-20:11/10	04:40		04:15	21:18-21:38/20
	16:19		17:32		18:35		20:44		21:47		22:22	
24	08:36		07:27	16:14-16:56/42	06:10	18:05-18:08/3	05:45	20:00-20:13/13	04:39		04:16	21:19-21:39/20
	16:21		17:34	17:02-17:03/1	18:37	17:22-17:57/35	20:46		21:49		22:22	
25	08:34		07:24	16:15-16:57/42	06:07	18:03-18:10/7	05:43	19:59-20:16/17	04:37		04:16	21:19-21:38/19
	16:24		17:36	17:01-17:06/5	18:40	17:20-17:58/38	20:48		21:51		22:22	
26	08:32		07:21	16:16-16:56/40	06:04	18:01-18:12/11	05:40	19:58-20:17/19	04:35		04:16	21:20-21:39/19
	16:26		17:39	16:59-17:08/9	18:42	17:19-17:59/40	20:50		21:53		22:21	
27	08:31		07:19	16:18-16:55/37	06:02	18:00-18:14/14	05:38	19:58-20:20/22	04:34		04:17	21:20-21:38/18
	16:28		17:41	16:58-17:10/12	18:44	17:17-17:59/42	20:52		21:54		22:21	
28	08:29		07:16	16:20-16:54/34	05:59	17:17-18:17/60	05:35	19:57-20:21/24	04:32		04:18	21:21-21:38/17
	16:31		17:43	16:57-17:13/16	18:46		20:55		21:56		22:21	
29	08:27	15:52-15:55/3			06:56	18:15-19:19/64	05:33	19:57-20:24/27	04:31		04:18	21:20-21:37/17
	16:33				19:48		20:57		21:58		22:21	
30	08:25	15:51-15:58/7			06:53	18:14-19:20/66	05:30	19:57-20:24/27	04:29		04:19	21:21-21:37/16
	16:35				19:51		20:59		21:59		22:20	
31	08:23	15:51-16:01/10			06:50	18:13-19:19/66			04:28			
	16:38				19:53				22:01			
Potential sun hours	227		262		365		429		515		539	
Sum of minutes with flicker	251		1168		776		1040		185		440	

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	Last time (hh:mm) with flicker	Minutes with flicker
	Sun set (hh:mm)	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	Minutes with flicker

Project:

Flickering_Valka_Nordex175

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

16/01/2026 09:49/4.1.254

SHADOW - Calendar per WTG

Calculation: Flickering_Valka_Nordex175 WTG: 2 - NORDEX N175/6.X 6800 175.0 !-! hub: 162.0 m (TOT: 249.5 m) (36)
Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

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

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

	July	August	September	October	November	December
1	04:20 21:22-21:37/15 22:20	05:09 21:35	06:15 18:11-18:55/44 20:17	07:18 18:53	07:27 15:15-15:56/41 16:32	08:33 12:34-12:45/11 15:37
2	04:21 21:22-21:37/15 22:19	05:11 21:33	06:17 18:10-18:55/45 20:14	07:20 18:50	07:30 15:16-15:54/38 16:30	08:35 12:33-12:47/14 15:36
3	04:22 21:23-21:37/14 22:19	05:13 20:20-20:22/2 21:31	06:19 18:10-18:56/46 20:12	07:23 18:48	07:32 15:15-15:51/36 16:27	08:36 12:32-12:48/16 15:35
4	04:23 21:24-21:36/12 22:18	05:15 20:15-20:26/11 21:29	06:21 18:09-18:57/48 20:09	07:25 17:44-17:46/2 18:45	07:34 15:16-15:49/33 16:25	08:38 12:31-12:49/18 15:34
5	04:24 21:24-21:35/11 22:17	05:17 20:12-20:28/16 21:26	06:23 18:08-18:56/48 20:06	07:27 17:39-17:51/12 18:42	07:37 15:16-15:46/30 16:23	08:40 12:31-12:51/20 15:33
6	04:25 21:25-21:35/10 22:16	05:19 20:11-20:29/18 21:24	06:25 18:08-18:56/48 20:03	07:29 17:37-17:52/15 18:39	07:39 15:17-15:44/27 16:20	08:41 12:31-12:52/21 15:33
7	04:26 21:26-21:34/8 22:16	05:21 20:09-20:30/21 21:22	06:27 19:00-19:07/7 20:01	07:31 17:34-17:53/19 18:37	07:41 15:18-15:42/24 16:18	08:43 12:31-12:53/22 15:32
8	04:27 21:27-21:33/6 22:15	05:24 20:08-20:31/23 21:19	06:30 18:07-19:09/62 19:58	07:33 17:33-17:53/20 18:34	07:44 15:18-15:39/21 16:16	08:44 12:31-12:54/23 15:31
9	04:29 21:28-21:32/4 22:14	05:26 20:08-20:32/24 21:17	06:32 18:06-19:10/64 19:55	07:36 17:16-17:18/2 18:31	07:46 15:19-15:37/18 16:14	08:46 12:30-12:55/25 15:31
10	04:30 21:29-21:31/2 22:13	05:28 20:07-20:32/25 21:15	06:34 18:06-19:11/65 19:52	07:38 17:10-17:23/13 18:28	07:48 15:20-15:34/14 16:12	08:47 12:31-12:56/25 15:30
11	04:31 22:11	05:30 20:06-20:32/26 21:12	06:36 18:06-19:12/66 19:49	07:40 17:06-17:24/18 18:26	07:50 15:21-15:32/11 16:10	08:49 12:30-12:56/26 15:30
12	04:33 22:10	05:32 20:05-20:31/26 21:10	06:38 18:06-19:12/66 19:47	07:42 17:04-17:25/21 18:23	07:53 15:23-15:30/7 16:08	08:50 12:31-12:57/26 15:29
13	04:34 22:09	05:34 20:05-20:31/26 21:07	06:40 18:06-19:11/65 19:44	07:44 16:57-17:27/30 18:20	07:55 15:24-15:27/3 16:06	08:51 12:31-12:58/27 15:29
14	04:36 22:08	05:36 20:04-20:30/26 21:05	06:42 18:06-19:10/64 19:41	07:47 16:52-17:27/35 18:18	07:57 16:04	08:52 12:31-12:58/27 15:29
15	04:37 22:06	05:38 20:04-20:28/24 21:02	06:44 18:06-19:07/61 19:38	07:49 16:50-17:27/37 18:15	07:59 16:02	08:53 12:31-12:59/28 15:29
16	04:39 22:05	05:41 20:04-20:26/22 21:00	06:46 18:06-19:04/58 19:35	07:51 16:48-17:28/40 18:12	08:02 16:00	08:54 12:32-13:00/28 15:29
17	04:41 22:03	05:43 20:05-20:23/18 20:57	06:49 18:49-19:01/12 19:33	07:53 16:46-17:28/42 18:10	08:04 15:58	08:55 12:32-13:00/28 15:29
18	04:42 22:02	05:45 20:05-20:21/16 20:55	06:51 18:50-18:58/8 19:30	07:56 16:46-17:28/42 18:07	08:06 15:56	08:56 12:32-13:00/28 15:29
19	04:44 22:00	05:47 20:06-20:19/13 20:52	06:53 18:51-18:56/5 19:27	07:58 16:43-17:28/45 18:04	08:08 15:54	08:57 12:33-13:01/28 15:29
20	04:46 21:58	05:49 20:06-20:16/10 20:49	06:55 18:10-18:42/32 19:24	08:00 16:38-17:27/49 18:02	08:11 15:53	08:58 12:34-13:02/28 15:30
21	04:48 21:57	05:51 20:07-20:14/7 20:47	06:57 18:11-18:40/29 19:21	08:02 16:34-17:26/52 17:59	08:13 15:51	08:58 12:33-13:02/29 15:30
22	04:49 21:55	05:53 20:09-20:11/2 20:44	06:59 18:14-18:38/24 19:19	08:05 16:29-17:22/53 17:57	08:15 15:49	08:59 12:34-13:03/29 15:30
23	04:51 21:53	05:56 18:30-18:43/13 20:42	07:01 18:17-18:34/17 19:16	08:07 16:26-17:20/54 17:54	08:17 15:48	08:59 12:35-13:03/28 15:31
24	04:53 21:51	05:58 18:26-18:47/21 20:39	07:03 19:13	08:09 16:22-17:17/55 17:52	08:19 15:46	09:00 12:36-13:04/28 15:31
25	04:55 21:49	06:00 18:23-18:49/26 20:36	07:05 19:10	07:11 15:21-16:15/54 16:49	08:21 15:45	09:00 12:36-13:04/28 15:32
26	04:57 21:47	06:02 18:20-18:50/30 20:34	07:08 19:07	07:14 15:19-16:12/53 16:46	08:23 15:43	09:00 12:37-13:05/28 15:33
27	04:59 21:46	06:04 18:18-18:52/34 20:31	07:10 19:04	07:16 15:19-16:10/51 16:44	08:25 15:42	09:01 12:37-13:05/28 15:34
28	05:01 21:44	06:06 18:16-18:53/37 20:28	07:12 19:02	07:18 15:17-16:06/49 16:42	08:27 15:41	09:01 12:38-13:05/27 15:35
29	05:03 21:41	06:08 18:15-18:54/39 20:25	07:14 18:59	07:20 15:17-16:04/47 16:39	08:29 15:39	09:01 12:39-13:06/27 15:36
30	05:05 21:39	06:10 18:13-18:54/41 20:23	07:16 18:56	07:23 15:16-16:01/45 16:37	08:31 12:37-12:41/4 15:38	09:01 12:39-13:05/26 15:37
31	05:07 21:37	06:13 18:12-18:55/43 20:20		07:25 15:16-15:59/43 16:34		09:01 12:40-13:06/26 15:38
Potential sun hours	538	474	386	321	241	207
Sum of minutes with flicker	97	640	1147	1141	307	773

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	Last time (hh:mm) with flicker	Minutes with flicker
	Sun set (hh:mm)	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	Minutes with flicker

Project:

Flickering_Valka_Nordex175

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

16/01/2026 09:49/4.1.254

SHADOW - Calendar per WTG

Calculation: Flickering_Valka_Nordex175 WTG: 3 - NORDEX N175/6.X 6800 175.0 !-! hub: 162.0 m (TOT: 249.5 m) (33)
Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

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

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	10:11-10:35/24	08:21	07:13	06:48	05:28	04:27
	15:39	14:25-14:48/23	16:40	17:46	19:55	21:01	22:03
2	09:00	10:12-10:36/24	08:19	07:11	06:45	05:25	04:26
	15:41	14:26-14:49/23	16:42	17:48	19:57	21:03	22:04
3	09:00	10:12-10:36/24	08:17	07:08	06:42	05:23	04:24
	15:42	14:26-14:49/23	16:45	17:50	19:59	21:06	22:05
4	08:59	10:12-10:36/24	08:15	07:05	06:39	05:20	04:23
	15:43	14:26-14:50/24	16:47	17:53	20:02	21:08	22:07
5	08:59	10:13-10:36/23	08:12	07:03	06:37	05:18	04:22
	15:45	14:26-14:50/24	16:49	17:55	20:04	21:10	22:08
6	08:58	10:13-10:36/23	08:10	07:00	06:34	05:16	04:21
	15:46	14:27-14:50/23	16:52	17:57	20:06	21:12	22:10
7	08:57	10:14-10:37/23	08:08	06:57	06:31	05:13	04:20
	15:48	14:27-14:51/24	16:54	17:59	20:08	21:14	22:11
8	08:57	10:15-10:37/22	08:06	06:54	06:28	05:11	04:19
	15:50	14:28-14:51/23	16:56	18:02	20:10	21:17	22:12
9	08:56	10:16-10:37/21	08:04	06:52	17:32-17:34/2	06:52-06:58/6	05:09
	15:51	14:28-14:52/24	16:59	18:04	20:13	21:19	22:13
10	08:55	10:17-10:37/20	08:01	06:49	17:29-17:36/7	06:49-06:59/10	05:06
	15:53	14:29-14:52/23	17:01	18:06	20:15	21:21	22:14
11	08:54	10:18-10:37/19	07:59	06:46	17:28-17:40/12	06:47-07:00/13	05:04
	15:55	14:29-14:52/23	17:04	18:09	20:17	21:23	22:15
12	08:53	10:19-10:36/17	07:57	06:43	17:26-17:42/16	06:44-07:00/16	05:02
	15:57	14:30-14:52/22	17:06	18:11	20:19	21:25	22:16
13	08:52	10:20-10:37/17	07:54	06:41	17:25-17:44/19	06:41-07:00/19	05:00
	15:59	14:31-14:53/22	17:08	18:13	20:21	21:27	22:17
14	08:51	10:21-10:35/14	07:52	06:38	17:24-17:46/22	06:39-07:01/22	04:58
	16:01	14:31-14:52/21	17:11	18:15	20:24	21:29	22:18
15	08:49	10:23-10:35/12	07:49	06:35	17:23-17:47/24	06:38-07:00/22	04:56
	16:02	14:32-14:52/20	17:13	18:17	20:26	21:31	22:18
16	08:48	10:25-10:33/8	07:47	06:32	17:22-17:47/25	06:38-06:59/21	04:54
	16:04	14:33-14:52/19	17:15	18:20	20:28	21:33	22:19
17	08:47	14:34-14:52/18	07:44	06:30	17:23-17:48/25	06:39-06:59/20	04:52
	16:06		17:18	18:22	20:30	21:35	22:20
18	08:45	14:35-14:51/16	07:42	06:27	17:23-17:47/24	06:39-06:58/19	04:50
	16:09		17:20	18:24	20:32	21:37	22:20
19	08:44	14:37-14:51/14	07:39	06:24	17:23-17:46/23	06:40-06:57/17	04:48
	16:11		17:23	18:26	20:35	21:39	22:21
20	08:43	14:39-14:50/11	07:37	06:21	17:23-17:45/22	06:41-06:55/14	04:46
	16:13		17:25	18:29	20:37	21:41	22:21
21	08:41	14:41-14:48/7	07:34	06:18	17:24-17:43/19	06:43-06:53/10	04:44
	16:15		17:27	18:31	20:39	21:43	22:21
22	08:39		07:32	06:16	17:26-17:42/16	05:51	04:42
	16:17		17:30	18:33	20:41	21:45	22:21
23	08:38		07:29	06:13	17:28-17:39/11	05:48	04:40
	16:19		17:32	18:35	20:44	21:47	22:22
24	08:36		07:27	06:10		05:45	04:39
	16:22		17:34	18:37	20:46	21:49	22:22
25	08:34		07:24	06:07		05:43	04:37
	16:24		17:37	18:40	20:48	21:51	22:22
26	08:33		07:21	06:04		05:40	04:35
	16:26		17:39	18:42	20:50	21:53	22:22
27	08:31		07:19	06:02		05:38	04:34
	16:28		17:41	18:44	20:52	21:54	22:21
28	08:29		07:16	05:59		05:35	04:32
	16:31		17:43	18:46	20:55	21:56	22:21
29	08:27			06:56		05:33	04:31
	16:33			19:48	20:57	21:58	22:21
30	08:25			06:53		05:30	04:29
	16:35			19:51	20:59	21:59	22:20
31	08:23			06:50			04:28
	16:38			19:53		22:01	
Potential sun hours	227		262	365	429	515	539
Sum of minutes with flicker	742	0	267	211	0	0	

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	Last time (hh:mm) with flicker	Minutes with flicker
	Sun set (hh:mm)	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	Minutes with flicker

Project:

Flickering_Valka_Nordex175

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

16/01/2026 09:49/4.1.254

SHADOW - Calendar per WTG

Calculation: Flickering_Valka_Nordex175 WTG: 3 - NORDEX N175/6.X 6800 175.0 !-! hub: 162.0 m (TOT: 249.5 m) (33)
Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	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 06:46-06:59/13 20:17	07:18 18:05-18:22/17 18:53	07:27 16:32	08:33 09:59-10:18/19 15:37 14:11-14:34/23
2	04:21 22:19	05:11 21:33	06:17 06:48-06:58/10 20:15	07:21 18:05-18:19/14 18:51	07:30 16:30	08:35 10:00-10:20/20 15:36 14:11-14:34/23
3	04:22 22:19	05:13 21:31	06:19 06:50-06:56/6 20:12	07:23 18:06-18:16/10 18:48	07:32 16:27	08:36 10:00-10:21/21 15:35 14:12-14:35/23
4	04:23 22:18	05:15 21:29	06:21 06:52-06:54/2 20:09	07:25 18:08-18:13/5 18:45	07:34 16:25	08:38 10:00-10:22/22 15:34 14:12-14:35/23
5	04:24 22:17	05:17 21:26	06:23 20:06	07:27 18:42	07:37 16:23	08:40 09:59-10:22/23 15:33 14:12-14:36/24
6	04:25 22:17	05:19 21:24	06:25 20:03	07:29 18:39	07:39 16:20	08:41 10:00-10:23/23 15:33 14:13-14:36/23
7	04:26 22:16	05:22 21:22	06:28 20:01	07:31 18:37	07:41 16:18	08:43 10:00-10:23/23 15:32 14:13-14:37/24
8	04:27 22:15	05:24 21:19	06:30 19:58	07:33 18:34	07:44 16:16	08:45 10:01-10:24/23 15:31 14:14-14:38/24
9	04:29 22:14	05:26 21:17	06:32 19:55	07:36 18:31	07:46 16:14	08:46 10:00-10:24/24 15:31 14:14-14:37/23
10	04:30 22:13	05:28 21:15	06:34 19:52	07:38 18:29	07:48 16:12	08:47 10:01-10:25/24 15:30 14:15-14:38/23
11	04:31 22:11	05:30 21:12	06:36 19:50	07:40 18:26	07:50 16:10	08:49 10:01-10:25/24 15:30 14:15-14:38/23
12	04:33 22:10	05:32 21:10	06:38 19:47	07:42 18:23	07:53 16:08	08:50 10:02-10:26/24 15:29 14:16-14:39/23
13	04:34 22:09	05:34 21:07	06:40 19:44	07:44 18:20	07:55 16:06	08:51 10:02-10:27/25 15:29 14:16-14:39/23
14	04:36 22:08	05:36 21:05	06:42 19:41	07:47 18:18	07:57 16:04	08:52 10:02-10:27/25 15:29 14:17-14:39/22
15	04:37 22:06	05:39 21:02	06:44 19:38	07:49 18:15	08:00 16:02	08:53 10:03-10:28/25 15:29 14:17-14:39/22
16	04:39 22:05	05:41 21:00	06:47 19:35	07:51 18:12	08:02 16:00	08:54 10:04-10:29/25 15:29 14:18-14:41/23
17	04:41 22:03	05:43 20:57	06:49 19:33	07:53 18:10	08:04 15:58	08:55 10:04-10:29/25 15:29 14:18-14:40/22
18	04:42 22:02	05:45 20:55	06:51 19:30	07:56 18:07	08:06 15:56	08:56 10:04-10:29/25 15:29 14:19-14:41/22
19	04:44 22:00	05:47 20:52	06:53 19:27	07:58 18:04	08:08 15:54	08:57 10:04-10:29/25 15:29 14:19-14:41/22
20	04:46 21:58	05:49 20:49	06:55 18:14-18:24/10 19:24	08:00 18:02	08:11 15:53	08:58 10:05-10:30/25 15:30 14:20-14:42/22
21	04:48 21:57	05:51 06:51-06:55/4 20:47	06:57 18:11-18:26/15 19:21	08:02 17:59	08:13 14:16-14:23/7 15:51	08:58 10:06-10:31/25 15:30 14:20-14:42/22
22	04:50 21:55	05:53 06:47-06:58/11 20:44	06:59 18:10-18:28/18 19:19	08:05 17:57	08:15 14:15-14:26/11 15:49	08:59 10:06-10:31/25 15:30 14:21-14:43/22
23	04:51 21:53	05:56 06:45-07:00/15 20:42	07:01 18:08-18:29/21 19:16	08:07 17:54	08:17 14:13-14:27/14 15:48	08:59 10:06-10:31/25 15:31 14:21-14:43/22
24	04:53 21:51	05:58 06:44-07:01/17 20:39	07:03 18:07-18:29/22 19:13	08:09 17:52	08:19 14:13-14:29/16 15:46	09:00 10:07-10:32/25 15:32 14:22-14:44/22
25	04:55 21:49	06:00 06:42-07:01/19 20:36	07:06 18:06-18:30/24 19:10	07:11 16:49	08:21 14:12-14:30/18 15:45	09:00 10:07-10:33/26 15:32 14:22-14:45/23
26	04:57 21:48	06:02 06:41-07:02/21 20:34	07:08 18:05-18:29/24 19:07	07:14 16:47	08:23 10:04-10:11/7 15:43 14:11-14:31/20	09:00 10:08-10:33/25 15:33 14:23-14:45/22
27	04:59 21:46	06:04 06:41-07:02/21 20:31	07:10 18:04-18:29/25 19:05	07:16 16:44	08:25 10:03-10:14/11 15:42 14:12-14:32/20	09:01 10:08-10:33/25 15:34 14:23-14:46/23
28	05:01 21:44	06:06 06:40-07:02/22 20:28	07:12 18:04-18:28/24 19:02	07:18 16:42	08:27 10:01-10:15/14 15:41 14:11-14:33/22	09:01 10:09-10:34/25 15:35 14:24-14:46/22
29	05:03 21:42	06:08 06:40-07:02/22 20:25	07:14 18:04-18:27/23 18:59	07:21 16:39	08:29 10:01-10:17/16 15:40 14:11-14:33/22	09:01 10:10-10:35/25 15:36 14:24-14:47/23
30	05:05 21:39	06:11 06:42-07:01/19 20:23	07:16 18:05-18:25/20 18:56	07:23 16:37	08:31 10:00-10:18/18 15:38 14:11-14:33/22	09:01 10:09-10:34/25 15:37 14:24-14:47/23
31	05:07 21:37	06:13 06:44-07:00/16 20:20		07:25 16:34		09:01 10:10-10:35/25 15:38 14:25-14:48/23
Potential sun hours	538	474	386	321	241	207
Sum of minutes with flicker	0	187	257	46	238	1450

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	Last time (hh:mm) with flicker	Minutes with flicker
	Sun set (hh:mm)	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	Minutes with flicker

Project:

Flickering_Valka_Nordex175

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

16/01/2026 09:49/4.1.254

SHADOW - Calendar per WTG

Calculation: Flickering_Valka_Nordex175 WTG: 4 - NORDEX N175/6.X 6800 175.0 !-! hub: 162.0 m (TOT: 249.5 m) (41)
Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

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

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

	January		February		March		April		May		June	
1	09:00	14:10-14:53/43	08:21	14:35-15:19/44	07:13	16:46-17:09/23	06:48	18:36-19:07/31	05:28	19:47-20:19/32	04:27	19:53-20:14/21
	15:39		16:40		17:46		19:55		21:01		22:02	
2	09:00	14:10-14:54/44	08:19	14:35-15:19/44	07:11	16:46-17:08/22	06:45	18:38-19:07/29	05:25	19:46-20:19/33	04:26	19:54-20:13/19
	15:41		16:42		17:48		19:57		21:03		22:04	
3	09:00	14:12-14:56/44	08:17	14:36-15:20/44	07:08	16:47-17:07/20	06:42	18:39-19:05/26	05:23	19:45-20:20/35	04:24	19:55-20:12/17
	15:42		16:45		17:50		19:59		21:06		22:05	
4	08:59	14:12-14:58/46	08:15	14:36-15:19/43	07:05	16:47-17:06/19	06:39	18:41-19:03/22	05:20	19:44-20:21/37	04:23	19:57-20:11/14
	15:43		16:47		17:53		20:02		21:08		22:07	
5	08:59	14:12-14:59/47	08:12	14:37-15:19/42	07:03	16:48-17:04/16	06:36	18:44-19:01/17	05:18	19:44-20:22/38	04:22	19:59-20:11/12
	15:45		16:49		17:55		20:04		21:10		22:08	
6	08:58	14:13-15:01/48	08:10	14:36-15:19/43	07:00	16:51-17:03/12	06:34	18:48-18:58/10	05:16	19:43-20:21/38	04:21	20:01-20:09/8
	15:46		16:52		17:57		20:06		21:12		22:09	
7	08:57	14:14-15:03/49	08:08	14:37-15:19/42	06:57	16:56-16:57/1	06:31		05:13	19:42-20:21/39	04:20	
	15:48		16:54		17:59		20:08		21:14		22:11	
8	08:57	14:15-15:05/50	08:06	14:38-15:18/40	06:54		06:28		05:11	19:42-20:22/40	04:19	
	15:50		16:56		18:02		20:10		21:16		22:12	
9	08:56	14:16-15:07/51	08:03	14:39-15:18/39	06:52		06:25		05:09	19:42-20:22/40	04:19	
	15:51		16:59		18:04		20:13		21:19		22:13	
10	08:55	14:17-15:09/52	08:01	14:39-15:17/38	06:49		06:23		05:06	19:42-20:22/40	04:18	
	15:53		17:01		18:06		20:15		21:21		22:14	
11	08:54	14:17-15:11/54	07:59	14:41-15:16/35	06:46		06:20		05:04	19:42-20:22/40	04:17	
	15:55		17:04		18:08		20:17		21:23		22:15	
12	08:53	14:18-15:13/55	07:56	14:42-15:15/33	06:43		06:17		05:02	19:41-20:22/41	04:17	
	15:57		17:06		18:11		20:19		21:25		22:16	
13	08:52	14:19-15:15/56	07:54	14:43-15:14/31	06:41	17:42-17:44/2	06:15		05:00	19:41-20:22/41	04:16	
	15:59		17:08		18:13		20:21		21:27		22:17	
14	08:51	14:21-15:18/57	07:52	14:45-15:12/27	06:38	17:39-17:46/7	06:12		04:58	19:41-20:22/41	04:16	
	16:00		17:11		18:15		20:24		21:29		22:18	
15	08:49	14:22-15:20/58	07:49	14:46-15:10/24	06:35	17:37-17:48/11	06:09		04:56	19:42-20:22/40	04:15	
	16:02		17:13		18:17		20:26		21:31		22:18	
16	08:48	14:26-15:21/55	07:47	14:50-15:08/18	06:32	17:36-17:50/14	06:06		04:54	19:42-20:22/40	04:15	
	16:04		17:15		18:20		20:28		21:33		22:19	
17	08:47	14:29-15:22/53	07:44	14:54-15:03/9	06:30	17:35-17:53/18	06:04		04:52	19:42-20:21/39	04:15	
	16:06		17:18		18:22		20:30		21:35		22:20	
18	08:45	14:33-15:22/49	07:42		06:27	17:35-17:55/20	06:01		04:50	19:43-20:21/38	04:15	
	16:09		17:20		18:24		20:32		21:37		22:20	
19	08:44	14:36-15:22/46	07:39		06:24	17:34-17:57/23	05:58	20:02-20:03/1	04:48	19:44-20:21/37	04:15	
	16:11		17:22		18:26		20:35		21:39		22:20	
20	08:42	14:37-15:23/46	07:37		06:21	17:33-17:59/26	05:56	19:59-20:05/6	04:46	19:44-20:21/37	04:15	
	16:13		17:25		18:29		20:37		21:41		22:21	
21	08:41	14:36-15:23/47	07:34	16:52-16:55/3	06:18	17:33-18:01/28	05:53	19:57-20:07/10	04:44	19:44-20:20/36	04:15	
	16:15		17:27		18:31		20:39		21:43		22:21	
22	08:39	14:36-15:23/47	07:32	16:50-16:58/8	06:16	17:33-18:03/30	05:50	19:56-20:09/13	04:42	19:45-20:20/35	04:15	
	16:17		17:30		18:33		20:41		21:45		22:21	
23	08:38	14:36-15:23/47	07:29	16:49-17:01/12	06:13	17:35-18:06/31	05:48	19:54-20:11/17	04:40	19:45-20:19/34	04:15	
	16:19		17:32		18:35		20:43		21:47		22:21	
24	08:36	14:36-15:23/47	07:27	16:47-17:03/16	06:10	17:35-18:08/33	05:45	19:54-20:13/19	04:39	19:46-20:19/33	04:16	
	16:21		17:34		18:37		20:46		21:49		22:22	
25	08:34	14:36-15:22/46	07:24	16:47-17:06/19	06:07	17:36-18:10/34	05:43	19:53-20:16/23	04:37	19:47-20:19/32	04:16	
	16:24		17:36		18:40		20:48		21:51		22:22	
26	08:32	14:36-15:22/46	07:21	16:47-17:08/21	06:04	17:36-18:10/34	05:40	19:52-20:17/25	04:35	19:47-20:18/31	04:16	
	16:26		17:39		18:42		20:50		21:53		22:21	
27	08:31	14:35-15:21/46	07:19	16:46-17:09/23	06:02	17:35-18:10/35	05:38	19:52-20:17/25	04:34	19:48-20:18/30	04:17	
	16:28		17:41		18:44		20:52		21:54		22:21	
28	08:29	14:35-15:20/45	07:16	16:46-17:09/23	05:59	17:36-18:10/34	05:35	19:51-20:16/25	04:32	19:50-20:17/27	04:18	
	16:31		17:43		18:46		20:55		21:56		22:21	
29	08:27	14:35-15:18/43			06:56	18:36-19:10/34	05:33	19:49-20:17/28	04:31	19:50-20:16/26	04:18	
	16:33				19:48		20:57		21:58		22:21	
30	08:25	14:35-15:19/44			06:53	18:36-19:09/33	05:30	19:48-20:18/30	04:29	19:51-20:15/24	04:19	
	16:35				19:51		20:59		21:59		22:20	
31	08:23	14:36-15:19/43			06:50	18:36-19:08/32			04:28	19:52-20:15/23		
	16:38				19:53				22:01			
Potential sun hours	227		262		365		429		515		539	
Sum of minutes with flicker	1504		721		592		357		1097		91	

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	Last time (hh:mm) with flicker	Minutes with flicker
	Sun set (hh:mm)	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	Minutes with flicker

Project:

Flickering_Valka_Nordex175

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

16/01/2026 09:49/4.1.254

SHADOW - Calendar per WTG

Calculation: Flickering_Valka_Nordex175 WTG: 4 - NORDEX N175/6.X 6800 175.0 !-! hub: 162.0 m (TOT: 249.5 m) (41)
Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	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 19:52-20:32/40 21:35	06:15 20:17	07:18 18:53	07:27 14:09-14:46/37 16:32	08:33 13:59-14:53/54 15:37
2	04:21 22:19	05:11 19:52-20:32/40 21:33	06:17 20:14	07:20 18:50	07:30 14:08-14:47/39 16:30	08:35 13:59-14:52/53 15:36
3	04:22 22:19	05:13 19:52-20:32/40 21:31	06:19 20:12	07:23 18:48	07:32 14:07-14:47/40 16:27	08:36 13:59-14:50/51 15:35
4	04:23 22:18	05:15 19:52-20:32/40 21:28	06:21 20:09	07:25 18:45	07:34 14:07-14:48/41 16:25	08:38 13:59-14:49/50 15:34
5	04:24 22:17	05:17 19:52-20:32/40 21:26	06:23 20:06	07:27 18:42	07:37 14:06-14:48/42 16:23	08:40 13:59-14:48/49 15:33
6	04:25 20:08-20:14/6 22:16	05:19 19:53-20:32/39 21:24	06:25 18:44-18:54/10 20:03	07:29 18:39	07:39 14:06-14:49/43 16:20	08:41 13:59-14:47/48 15:33
7	04:26 20:06-20:16/10 22:16	05:21 19:53-20:31/38 21:22	06:27 18:41-18:57/16 20:01	07:31 17:28-17:36/8 18:37	07:41 14:06-14:50/44 16:18	08:43 14:00-14:47/47 15:32
8	04:27 20:05-20:18/13 22:15	05:24 19:53-20:31/38 21:19	06:30 18:36-18:58/22 19:58	07:33 17:25-17:39/14 18:34	07:44 14:06-14:49/43 16:16	08:44 14:00-14:46/46 15:31
9	04:29 20:03-20:19/16 22:14	05:26 19:54-20:30/36 21:17	06:32 18:33-18:59/26 19:55	07:36 17:23-17:41/18 18:31	07:46 14:06-14:50/44 16:14	08:46 14:00-14:44/44 15:31
10	04:30 20:02-20:20/18 22:12	05:28 19:55-20:29/34 21:14	06:34 18:31-19:00/29 19:52	07:38 17:22-17:41/19 18:28	07:48 14:06-14:50/44 16:12	08:47 14:00-14:44/44 15:30
11	04:31 20:01-20:21/20 22:11	05:30 19:55-20:28/33 21:12	06:36 18:30-19:00/30 19:49	07:40 17:20-17:41/21 18:26	07:50 14:06-14:50/44 16:10	08:49 14:00-14:43/43 15:30
12	04:33 20:01-20:23/22 22:10	05:32 19:56-20:27/31 21:10	06:38 18:28-19:00/32 19:47	07:42 17:19-17:41/22 18:23	07:53 14:06-14:50/44 16:08	08:50 14:01-14:43/42 15:29
13	04:34 20:00-20:24/24 22:09	05:34 19:56-20:25/29 21:07	06:40 18:27-19:00/33 19:44	07:44 17:19-17:42/23 18:20	07:55 14:07-14:50/43 16:06	08:51 14:01-14:42/41 15:29
14	04:36 19:59-20:24/25 22:07	05:36 19:57-20:24/27 21:05	06:42 18:26-19:00/34 19:41	07:47 17:19-17:42/23 18:18	07:57 14:08-14:53/45 16:04	08:52 14:01-14:42/41 15:29
15	04:37 19:59-20:26/27 22:06	05:38 19:59-20:24/25 21:02	06:44 18:25-19:00/35 19:38	07:49 17:18-17:41/23 18:15	07:59 14:07-14:53/46 16:02	08:53 14:02-14:41/39 15:29
16	04:39 19:57-20:26/29 22:05	05:41 19:59-20:23/24 21:00	06:46 18:25-18:59/34 19:35	07:51 17:19-17:39/20 18:12	08:02 14:08-14:55/47 16:00	08:54 14:02-14:41/39 15:29
17	04:41 19:57-20:27/30 22:03	05:43 19:59-20:23/24 20:57	06:49 18:24-18:58/34 19:33	07:53 17:19-17:36/17 18:10	08:04 14:09-14:55/46 15:58	08:55 14:03-14:41/38 15:29
18	04:42 19:56-20:27/31 22:02	05:45 19:59-20:21/22 20:55	06:51 18:24-18:58/34 19:30	07:55 17:20-17:34/14 18:07	08:06 14:10-14:57/47 15:56	08:56 14:03-14:41/38 15:29
19	04:44 19:56-20:29/33 22:00	05:47 19:59-20:19/20 20:52	06:53 18:22-18:56/34 19:27	07:58 17:20-17:31/11 18:04	08:08 14:10-14:57/47 15:54	08:57 14:04-14:42/38 15:29
20	04:46 19:56-20:30/34 21:58	05:49 20:00-20:16/16 20:49	06:55 18:20-18:53/33 19:24	08:00 17:21-17:28/7 18:02	08:10 14:11-14:58/47 15:53	08:58 14:05-14:42/37 15:30
21	04:48 19:55-20:30/35 21:57	05:51 20:01-20:14/13 20:47	06:57 18:19-18:50/31 19:21	08:02 17:24-17:26/2 17:59	08:13 14:11-14:58/47 15:51	08:58 14:04-14:42/38 15:30
22	04:49 19:55-20:30/35 21:55	05:53 20:02-20:11/9 20:44	06:59 18:18-18:47/29 19:18	08:04 17:57	08:15 14:13-14:59/46 15:49	08:59 14:05-14:43/38 15:30
23	04:51 19:54-20:30/36 21:53	05:56 20:03-20:09/6 20:41	07:01 18:18-18:45/27 19:16	08:07 17:54	08:17 14:13-14:59/46 15:48	08:59 14:05-14:43/38 15:31
24	04:53 19:54-20:31/37 21:51	05:58 20:39	07:03 18:18-18:42/24 19:13	08:09 17:52	08:19 14:10-14:59/49 15:46	09:00 14:06-14:44/38 15:31
25	04:55 19:54-20:32/38 21:49	06:00 20:36	07:05 18:17-18:39/22 19:10	07:11 14:23-14:35/12 16:49	08:21 14:07-15:00/53 15:45	09:00 14:07-14:45/38 15:32
26	04:57 19:54-20:32/38 21:47	06:02 20:33	07:08 18:17-18:36/19 19:07	07:14 14:18-14:38/20 16:46	08:23 14:04-15:00/56 15:43	09:00 14:07-14:46/39 15:33
27	04:59 19:53-20:32/39 21:45	06:04 20:31	07:10 18:17-18:33/16 19:04	07:16 14:16-14:41/25 16:44	08:25 14:02-14:59/57 15:42	09:01 14:08-14:47/39 15:34
28	05:01 19:53-20:32/39 21:43	06:06 20:28	07:12 18:18-18:30/12 19:02	07:18 14:14-14:42/28 16:42	08:27 14:01-14:58/57 15:41	09:01 14:08-14:48/40 15:35
29	05:03 19:53-20:33/40 21:41	06:08 20:25	07:14 18:18-18:27/9 18:59	07:20 14:13-14:44/31 16:39	08:29 14:00-14:56/56 15:39	09:01 14:08-14:48/40 15:36
30	05:05 19:53-20:33/40 21:39	06:10 20:23	07:16 18:21-18:25/4 18:56	07:23 14:11-14:45/34 16:37	08:31 14:00-14:55/55 15:38	09:01 14:09-14:50/41 15:37
31	05:07 19:53-20:33/40 21:37	06:13 20:20		07:25 14:10-14:46/36 16:34		09:00 14:10-14:51/41 15:38
Potential sun hours	538	474	386	321	241	207
Sum of minutes with flicker	755	664	629	428	1395	1312

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	Last time (hh:mm) with flicker	Minutes with flicker
	Sun set (hh:mm)	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	Minutes with flicker

Project:

Flickering_Valka_Nordex175

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

16/01/2026 09:49/4.1.254

SHADOW - Calendar per WTG

Calculation: Flickering_Valka_Nordex175 WTG: 5 - NORDEX N175/6.X 6800 175.0 !-! hub: 162.0 m (TOT: 249.5 m) (31)
Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) []

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

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 11:11-11:50/39	08:21 09:18-09:40/22	07:13	06:48 07:28-07:56/28	05:28 06:19-06:46/27	04:27 05:08-05:40/32
	15:39 12:41-13:24/43	16:40	17:46	19:55	21:01	22:03
2	09:00 11:13-11:51/38	08:19 09:18-09:39/21	07:11	06:45 07:29-07:53/24	05:25 06:20-06:45/25	04:26 05:08-05:40/32
	15:41 12:42-13:25/43	16:42	17:48	19:57	21:04	22:04
3	09:00 11:13-11:51/38	08:17 09:20-09:39/19	07:08	06:42 07:29-07:51/22	05:23 06:20-06:42/22	04:24 05:09-05:40/31
	15:42 12:42-13:25/43	16:45	17:50	19:59	21:06	22:06
4	08:59 11:14-11:50/36	08:15 09:20-09:37/17	07:05	06:39 07:31-07:46/15	05:20 06:21-06:41/20	04:23 05:09-05:40/31
	15:43 12:43-13:25/42	16:47	17:53	20:02	21:08	22:07
5	08:59 11:15-11:50/35	08:13 09:23-09:36/13	07:03	06:37 07:33-07:43/10	05:18 06:22-06:40/18	04:22 05:10-05:40/30
	15:45 12:43-13:26/43	16:49	17:55	20:04	21:10	22:08
6	08:58 11:16-11:50/34	08:10 09:26-09:33/7	07:00	06:34	05:16 06:24-06:38/14	04:21 05:10-05:40/30
	15:46 12:43-13:26/43	16:52	17:57	20:06	21:12	22:10
7	08:57 11:17-11:49/32	08:08	06:57	06:31	05:13 06:26-06:36/10	04:20 05:10-05:39/29
	15:48 12:44-13:26/42	16:54	18:00	20:08	21:14	22:11
8	08:57 11:19-11:49/30	08:06	06:55	06:28	05:11	04:20 05:11-05:40/29
	15:50 12:45-13:27/42	16:57	18:02	20:10	21:17	22:12
9	08:56 11:21-11:32/11 12:45-13:27/42	08:04	06:52	06:26	05:09	04:19 05:10-05:39/29
	15:51 11:35-11:48/13	16:59	18:04	20:13	21:19	22:13
10	08:55 11:24-11:31/7 12:46-13:28/42	08:01	06:49	06:23	05:07	04:18 05:11-05:40/29
	15:53 11:38-11:47/9	17:01	18:06	20:15	21:21	22:14
11	08:54 12:47-13:28/41	07:59 08:29-08:30/1	06:46	06:20	05:04	04:17 05:11-05:39/28
	15:55	17:04	18:09	20:17	21:23	22:15
12	08:53 12:47-13:28/41	07:57 08:27-08:33/6	06:44	06:17	05:02	04:17 05:12-05:39/27
	15:57	17:06	18:11	20:19	21:25	22:16
13	08:52 12:48-13:29/41	07:54 08:24-08:33/9	06:41	06:15	05:00	04:16 05:12-05:39/27
	15:59	17:08	18:13	20:22	21:27	22:17
14	08:51 12:48-13:28/40	07:52 08:21-08:34/13	06:38	06:12 06:39-06:44/5	04:58 05:30-05:32/2	04:16 05:12-05:39/27
	16:01	17:11	18:15	20:24	21:29	22:18
15	08:50 12:49-13:29/40	07:49 08:19-08:35/16	06:35	06:09 06:36-06:47/11	04:56 05:28-05:34/6	04:16 05:13-05:39/26
	16:03 09:28-09:30/2	17:13	18:18	20:26	21:31	22:19
16	08:48 12:50-13:28/38	07:47 08:16-08:35/19	06:32	06:07 06:33-06:48/15	04:54 05:26-05:35/9	04:15 05:13-05:39/26
	16:04 09:26-09:31/5	17:16	18:20	20:28	21:33	22:19
17	08:47 12:50-13:28/38	07:44 08:13-08:35/22	06:30	06:04 06:31-06:50/19	04:52 05:24-05:36/12	04:15 05:13-05:40/27
	16:07 09:24-09:33/9	17:18	18:22	20:30	21:36	22:20
18	08:46 12:52-13:29/37	07:42 08:14-08:36/22	06:27	06:01 06:28-06:50/22	04:50 05:23-05:37/14	04:15 05:14-05:40/26
	16:09 09:23-09:35/12	17:20	18:24	20:33	21:38	22:20
19	08:44 12:53-13:28/35	07:39 08:14-08:35/21	06:24 06:50-06:54/4	05:58 06:26-06:51/25	04:48 05:21-05:37/16	04:15 05:14-05:40/26
	16:11 09:21-09:35/14	17:23	18:26	20:35	21:40	22:21
20	08:43 12:53-13:28/35	07:37 08:14-08:34/20	06:21 06:47-06:57/10	05:56 06:23-06:51/28	04:46 05:19-05:38/19	04:15 05:14-05:40/26
	16:13 09:19-09:36/17	17:25	18:29	20:37	21:41	22:21
21	08:41 12:54-13:27/33	07:34 08:15-08:34/19	06:19 06:45-06:59/14	05:53 06:21-06:52/31	04:44 05:18-05:39/21	04:15 05:14-05:40/26
	16:15 09:17-09:37/20	17:27	18:31	20:39	21:43	22:21
22	08:39 12:56-13:26/30	07:32 08:15-08:33/18	06:16 06:42-07:00/18	05:51 06:19-06:51/32	04:42 05:16-05:39/23	04:15 05:14-05:40/26
	16:17 09:15-09:38/23	17:30	18:33	20:41	21:45	22:22
23	08:38 12:57-13:26/29	07:29 08:16-08:31/15	06:13 06:39-07:00/21	05:48 06:19-06:52/33	04:40 05:15-05:39/24	04:15 05:15-05:41/26
	16:19 09:15-09:38/23	17:32	18:35	20:44	21:47	22:22
24	08:36 12:59-13:25/26	07:27 08:19-08:30/11	06:10 06:36-07:00/24	05:45 06:18-06:51/33	04:39 05:13-05:39/26	04:16 05:15-05:41/26
	16:22 09:15-09:39/24	17:34	18:37	20:46	21:49	22:22
25	08:34 13:00-13:23/23	07:24	06:07 06:33-07:00/27	05:43 06:18-06:51/33	04:37 05:12-05:40/28	04:16 05:15-05:41/26
	16:24 09:15-09:40/25	17:37	18:40	20:48	21:51	22:22
26	08:33 13:03-13:22/19	07:21	06:05 06:31-07:01/30	05:40 06:17-06:50/33	04:35 05:11-05:39/28	04:17 05:15-05:41/26
	16:26 09:15-09:40/25	17:39	18:42	20:50	21:53	22:22
27	08:31 13:06-13:19/13	07:19	06:02 06:29-07:00/31	05:38 06:18-06:50/32	04:34 05:09-05:40/31	04:17 05:15-05:41/26
	16:28 09:15-09:40/25	17:41	18:44	20:53	21:54	22:21
28	08:29 09:16-09:41/25	07:16	05:59 06:28-07:00/32	05:35 06:18-06:50/32	04:32 05:08-05:40/32	04:18 05:15-05:42/27
	16:31	17:44	18:46	20:55	21:56	22:21
29	08:27 09:15-09:40/25		06:56 07:28-07:59/31	05:33 06:17-06:48/31	04:31 05:08-05:40/32	04:18 05:16-05:43/27
	16:33		19:48	20:57	21:58	22:21
30	08:25 09:16-09:40/24		06:53 07:27-07:58/31	05:30 06:18-06:47/29	04:29 05:09-05:40/31	04:19 05:15-05:43/28
	16:35		19:51	20:59	21:59	22:20
31	08:23 09:17-09:40/23		06:51 07:28-07:57/29		04:28 05:08-05:40/32	
	16:38		19:53		22:01	
Potential sun hours	227	262	365	429	515	539
Sum of minutes with flicker	1627	311	302	543	522	832

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	Last time (hh:mm) with flicker	Minutes with flicker
	Sun set (hh:mm)	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	Minutes with flicker

Project:

Flickering_Valka_Nordex175

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

16/01/2026 09:49/4.1.254

SHADOW - Calendar per WTG

Calculation: Flickering_Valka_Nordex175 WTG: 5 - NORDEX N175/6.X 6800 175.0 !-! hub: 162.0 m (TOT: 249.5 m) (31)
Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
0.80 1.82 4.75 6.09 9.67 10.05 8.16 7.72 5.94 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 05:15-05:43/28	05:09	06:15	07:18	07:28	08:33 12:28-13:09/41
	22:20	21:35	20:17	18:53	16:32	15:37
2	04:21 05:16-05:44/28	05:11	06:17	07:21	07:30	08:35 11:07-11:14/7 12:29-13:11/42
	22:19	21:33	20:15	18:51	16:30	15:36 11:21-11:30/9
3	04:22 05:16-05:45/29	05:13	06:19	07:23	07:32	08:36 11:05-11:16/11 12:29-13:11/42
	22:19	21:31	20:12	18:48	16:27	15:35 11:20-11:32/12
4	04:23 05:16-05:45/29	05:15	06:21	07:25	07:34	08:38 11:04-11:18/14 12:30-13:12/42
	22:18	21:29	20:09	18:45	16:25	15:34 11:19-11:34/15
5	04:24 05:16-05:46/30	05:17 06:39-06:42/3	06:23	07:27	07:37 08:55-09:03/8	08:40 11:04-11:35/31
	22:17	21:26	20:06	18:42	16:23	15:33 12:29-13:12/43
6	04:25 05:16-05:46/30	05:19 06:35-06:46/11	06:25	07:29	07:39 08:52-09:05/13	08:42 11:02-11:36/34
	22:17	21:24	20:04	18:40	16:20	15:33 12:30-13:12/42
7	04:26 05:16-05:46/30	05:22 06:32-06:48/16	06:28 07:29-07:38/9	07:31	07:41 08:51-09:08/17	08:43 11:02-11:37/35
	22:16	21:22	20:01	18:37	16:18	15:32 12:30-13:13/43
8	04:27 05:16-05:47/31	05:24 06:31-06:50/19	06:30 07:26-07:40/14	07:34	07:44 08:50-09:09/19	08:45 11:02-11:38/36
	22:15	21:19	19:58	18:34	16:16	15:31 12:31-13:14/43
9	04:29 05:16-05:47/31	05:26 06:30-06:51/21	06:32 07:24-07:45/21	07:36	07:46 08:49-09:10/21	08:46 11:02-11:39/37
	22:14	21:17	19:55	18:31	16:14	15:31 12:31-13:13/42
10	04:30 05:16-05:47/31	05:28 06:29-06:52/23	06:34 07:22-07:47/25	07:38	07:48 08:49-09:11/22	08:47 11:02-11:40/38
	22:13	21:15	19:52	18:29	16:12	15:30 12:31-13:14/43
11	04:31 05:17-05:48/31	05:30 06:28-06:54/26	06:36 07:21-07:48/27	07:40	07:51 08:48-09:11/23	08:49 11:03-11:41/38
	22:12	21:12	19:50	18:26	16:10	15:30 12:31-13:14/43
12	04:33 05:16-05:48/32	05:32 06:27-06:55/28	06:38 07:20-07:49/29	07:42	07:53 08:48-09:12/24	08:50 11:02-11:42/40
	22:10	21:10	19:47	18:23	16:08	15:30 12:32-13:15/43
13	04:34 05:16-05:48/32	05:34 06:26-06:56/30	06:40 07:19-07:49/30	07:45	07:55 08:47-09:12/25	08:51 11:02-11:42/40
	22:09	21:07	19:44	18:20	16:06	15:29 12:32-13:15/43
14	04:36 05:17-05:49/32	05:36 06:26-06:57/31	06:42 07:18-07:49/31	07:47	07:57 08:48-09:13/25	08:52 11:03-11:42/39
	22:08	21:05	19:41	18:18	16:04	15:29 12:33-13:16/43
15	04:37 05:17-05:49/32	05:39 06:25-06:57/32	06:44 07:18-07:49/31	07:49	08:00 12:38-12:51/13	08:54 11:03-11:44/41
	22:06	21:02	19:38	18:15	16:02 08:48-09:13/25	15:29 12:34-13:17/43
16	04:39 05:18-05:49/31	05:41 06:25-06:58/33	06:47 07:17-07:49/32	07:51	08:02 12:36-12:55/19	08:55 11:03-11:44/41
	22:05	21:00	19:36	18:12	16:00 08:48-09:13/25	15:29 12:34-13:17/43
17	04:41 05:19-05:49/30	05:43 06:25-06:58/33	06:49 07:18-07:48/30	07:53 08:53-08:59/6	08:04 12:33-12:56/23	08:55 11:04-11:45/41
	22:03	20:57	19:33	18:10	15:58 08:49-09:13/24	15:29 12:35-13:18/43
18	04:42 05:21-05:49/28	05:45 06:25-06:58/33	06:51 07:20-07:48/28	07:56 08:49-09:02/13	08:06 12:33-12:59/26	08:56 11:04-11:46/42
	22:02	20:55	19:30	18:07	15:56 08:49-09:13/24	15:29 12:34-13:17/43
19	04:44 05:22-05:49/27	05:47 06:25-06:58/33	06:53 07:23-07:48/25	07:58 08:47-09:03/16	08:08 12:31-13:00/29	08:57 11:04-11:46/42
	22:00	20:52	19:27	18:04	15:54 08:50-09:13/23	15:29 12:35-13:18/43
20	04:46 05:24-05:49/25	05:49 06:25-06:57/32	06:55 07:25-07:47/22	08:00 08:46-09:04/18	08:11 12:31-13:01/30	08:58 11:05-11:46/41
	21:59	20:50	19:24	18:02	15:53 08:50-09:13/23	15:30 12:36-13:19/43
21	04:48 05:25-05:49/24	05:51 06:25-06:57/32	06:57 07:27-07:46/19	08:02 08:45-09:05/20	08:13 12:30-13:02/32	08:58 11:05-11:47/42
	21:57	20:47	19:21	17:59	15:51 08:53-09:13/20	15:30 12:37-13:20/43
22	04:50 05:27-05:49/22	05:54 06:26-06:56/30	06:59 07:29-07:44/15	08:05 08:45-09:06/21	08:15 12:30-13:04/34	08:59 11:05-11:47/42
	21:55	20:44	19:19	17:57	15:49 08:55-09:12/17	15:30 12:37-13:20/43
23	04:51 05:29-05:49/20	05:56 06:28-06:56/28	07:01 07:31-07:42/11	08:07 08:44-09:05/21	08:17 12:29-13:04/35	09:00 11:06-11:47/41
	21:53	20:42	19:16	17:54	15:48 08:57-09:12/15	15:31 12:37-13:20/43
24	04:53 05:30-05:48/18	05:58 06:30-06:55/25	07:03 07:33-07:39/6	08:09 08:43-09:05/22	08:19 12:29-13:06/37	09:00 11:07-11:48/41
	21:51	20:39	19:13	17:52	15:46 09:00-09:12/12	15:32 12:38-13:21/43
25	04:55 05:32-05:47/15	06:00 06:32-06:54/22	07:06	07:11 07:44-08:05/21	08:21 12:28-13:06/38	09:00 11:07-11:49/42
	21:50	20:36	19:10	16:49	15:45 09:02-09:11/9	15:32 12:38-13:21/43
26	04:57 05:34-05:47/13	06:02 06:34-06:52/18	07:08	07:14 07:46-08:04/18	08:23 12:28-13:06/38	09:01 11:08-11:49/41
	21:48	20:34	19:07	16:47	15:43 09:05-09:11/6	15:33 12:39-13:22/43
27	04:59 05:36-05:46/10	06:04 06:36-06:51/15	07:10	07:16 07:49-08:04/15	08:25 12:29-13:08/39	09:01 11:08-11:49/41
	21:46	20:31	19:05	16:44	15:42 09:07-09:09/2	15:34 12:39-13:22/43
28	05:01 05:37-05:45/8	06:06 06:38-06:48/10	07:12	07:18 07:51-08:03/12	08:27 12:28-13:08/40	09:01 11:09-11:50/41
	21:44	20:28	19:02	16:42	15:41	15:35 12:40-13:23/43
29	05:03 05:39-05:43/4	06:08 06:40-06:45/5	07:14	07:21 07:54-08:03/9	08:29 12:28-13:09/41	09:01 11:10-11:50/40
	21:42	20:26	18:59	16:39	15:40	15:36 12:40-13:23/43
30	05:05	06:11	07:16	07:23 07:56-08:01/5	08:31 12:28-13:09/41	09:01 11:10-11:50/40
	21:40	20:23	18:56	16:37	15:38	15:37 12:40-13:23/43
31	05:07	06:13		07:25		09:01 11:11-11:50/39
	21:37	20:20		16:34		15:38 12:41-13:24/43
Potential sun hours	538	474	386	321	241	207
Sum of minutes with flicker	731	589	405	217	937	2460

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	Last time (hh:mm) with flicker	Minutes with flicker
	Sun set (hh:mm)	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	Minutes with flicker

Project:

Flickering_Valka_Nordex175

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

16/01/2026 09:49/4.1.254

SHADOW - Calendar per WTG

Calculation: Flickering_Valka_Nordex175 WTG: 6 - NORDEX N175/6.X 6800 175.0 !-! hub: 162.0 m (TOT: 249.5 m) (29)
Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

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

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

	January	February	March	April	May	June
1	09:00 13:46-14:10/24 15:40	08:21 08:54-09:23/29 16:40	07:14 08:08-08:45/37 17:46	06:48 07:59-08:38/39 19:55	05:28 06:05-06:32/27 21:01	04:27 05:45-06:30/45 22:03
2	09:00 13:47-14:11/24 15:41	08:19 08:51-09:23/32 16:42	07:11 08:08-08:43/35 17:48	06:45 07:59-08:37/38 19:57	05:25 06:04-06:34/30 21:04	04:26 05:46-06:30/44 22:04
3	09:00 13:47-14:11/24 15:42	08:17 08:49-09:23/34 16:45	07:08 08:08-08:41/33 17:50	06:42 07:59-08:36/37 19:59	05:23 06:02-06:34/32 21:06	04:25 05:47-06:30/43 22:06
4	08:59 13:48-14:11/23 15:44	08:15 08:46-09:22/36 16:47	07:05 08:10-08:38/28 17:53	06:39 08:01-08:35/34 20:02	05:20 05:56-06:35/39 21:08	04:23 05:47-06:29/42 22:07
5	08:59 13:48-14:11/23 15:45	08:13 08:44-09:23/39 16:49	07:03 08:11-08:32/21 17:55	06:37 08:01-08:33/32 20:04	05:18 05:53-06:36/43 21:10	04:22 05:48-06:28/40 22:08
6	08:58 13:49-14:11/22 15:47	08:10 08:42-09:23/41 16:52	07:00 08:13-08:29/16 17:57	06:34 08:02-08:31/29 20:06	05:16 05:51-06:36/45 21:12	04:21 05:48-06:27/39 22:10
7	08:57 13:50-14:11/21 15:48	08:08 08:39-09:21/42 16:54	06:57 08:16-08:25/9 18:00	06:31 08:04-08:28/24 20:08	05:13 05:49-06:37/48 21:14	04:20 05:48-06:26/38 22:11
8	08:57 13:51-14:11/20 15:50	08:06 08:38-09:21/43 16:57	06:55 08:02-08:22/2 18:02	06:28 08:06-08:26/20 20:11	05:11 05:48-06:37/49 21:17	04:20 05:49-06:25/36 22:12
9	08:56 13:52-14:11/19 15:51	08:04 08:37-09:19/42 16:59	06:52 08:04-08:20/21 18:04	06:26 08:10-08:21/11 20:13	05:09 05:47-06:37/50 21:19	04:19 06:16-06:23/7 22:13
10	08:55 13:53-14:11/18 15:53	08:01 08:37-09:17/40 17:01	06:49 08:06-08:18/22 18:06	06:23 08:10-08:21/11 20:15	05:07 05:45-06:37/52 21:21	04:18 06:19-06:21/2 22:14
11	08:54 13:55-14:11/16 15:55	07:59 08:32-09:10/38 17:04	06:46 08:09-08:21/23 18:09	06:20 08:10-08:21/11 20:17	05:04 05:45-06:38/53 21:23	04:17 05:50-06:15/25 22:15
12	08:53 13:56-14:10/14 15:57	07:57 08:29-09:10/41 17:06	06:44 07:20-07:35/15 18:11	06:17 08:10-08:21/11 20:19	05:02 05:45-06:38/53 21:25	04:17 05:51-06:15/24 22:16
13	08:52 13:58-14:09/11 15:59	07:54 08:26-09:08/42 17:08	06:41 07:16-07:38/22 18:13	06:15 08:10-08:21/11 20:22	05:00 05:44-06:38/54 21:27	04:16 05:52-06:15/23 22:17
14	08:51 14:00-14:07/7 16:01	07:52 08:24-09:05/41 17:11	06:38 07:14-07:40/26 18:15	06:12 08:10-08:21/11 20:24	04:58 05:43-06:37/54 21:29	04:16 05:52-06:15/23 22:18
15	08:50 16:03 16:03	07:49 08:21-09:03/42 17:13	06:35 07:12-07:42/30 18:18	06:09 08:10-08:21/11 20:26	04:56 05:43-06:37/54 21:31	04:16 05:53-06:15/22 22:19
16	08:48 16:05 16:05	07:47 08:17-08:56/39 17:16	06:33 07:10-07:43/33 18:20	06:07 08:10-08:21/11 20:28	04:54 05:43-06:37/54 21:33	04:15 05:53-06:15/22 22:19
17	08:47 16:07 16:07	07:44 08:14-08:53/39 17:18	06:30 07:08-07:44/36 18:22	06:04 08:10-08:21/11 20:30	04:52 05:42-06:36/54 21:36	04:15 05:54-06:15/21 22:20
18	08:46 16:09 16:09	07:42 08:13-08:50/37 17:20	06:27 07:06-07:44/38 18:24	06:01 08:10-08:21/11 20:33	04:50 05:43-06:37/54 21:38	04:15 05:54-06:15/21 22:20
19	08:44 16:11 16:11	07:39 08:11-08:50/39 17:23	06:24 07:04-07:44/40 18:26	05:59 08:10-08:21/11 20:35	04:48 05:42-06:36/54 21:40	04:15 05:54-06:15/21 22:21
20	08:43 16:13 16:13	07:37 08:10-08:50/40 17:25	06:21 07:03-07:45/42 18:29	05:56 08:10-08:21/11 20:37	04:46 05:42-06:36/54 21:41	04:15 05:54-06:15/21 22:21
21	08:41 16:15 16:15	07:34 08:09-08:51/42 17:27	06:19 07:03-07:46/43 18:31	05:53 08:10-08:21/11 20:39	04:44 05:43-06:36/53 21:43	04:15 05:55-06:15/20 22:21
22	08:39 16:17 16:17	07:32 08:08-08:50/42 17:30	06:16 07:02-07:45/43 18:33	05:51 08:10-08:21/11 20:41	04:42 05:42-06:35/53 21:45	04:15 05:55-06:15/20 22:22
23	08:38 09:13-09:14/1 16:19	07:29 08:08-08:50/42 17:32	06:13 07:01-07:45/44 18:35	05:48 08:10-08:21/11 20:44	04:41 05:43-06:35/52 21:47	04:15 05:55-06:16/21 22:22
24	08:36 09:11-09:16/5 16:22	07:27 08:08-08:50/42 17:34	06:10 07:00-07:45/45 18:37	05:45 08:10-08:21/11 20:46	04:39 05:42-06:35/53 21:49	04:16 05:55-06:16/21 22:22
25	08:34 09:09-09:18/9 16:24	07:24 08:07-08:49/42 17:37	06:07 06:59-07:44/45 18:40	05:43 08:10-08:21/11 20:48	04:37 05:43-06:34/51 21:51	04:16 05:55-06:16/21 22:22
26	08:33 09:07-09:19/12 16:26	07:21 08:07-08:49/42 17:39	06:05 06:59-07:44/45 18:42	05:40 08:10-08:21/11 20:50	04:36 05:44-06:33/49 21:53	04:17 05:55-06:17/22 22:22
27	08:31 09:05-09:20/15 16:28	07:19 08:07-08:47/40 17:41	06:02 06:59-07:44/45 18:44	05:38 06:16-06:23/7 20:53	04:34 05:43-06:33/50 21:54	04:17 05:55-06:17/22 22:21
28	08:29 09:03-09:21/18 16:31	07:16 08:08-08:47/39 17:44	05:59 06:58-07:43/45 18:46	05:35 06:12-06:27/15 20:55	04:32 05:44-06:33/49 21:56	04:18 05:55-06:18/23 22:21
29	08:27 09:00-09:21/21 16:33		06:56 07:58-08:41/43 19:48	05:33 06:08-06:29/21 20:57	04:31 05:45-06:33/48 21:58	04:18 05:56-06:18/22 22:21
30	08:25 08:58-09:22/24 16:35		06:53 07:58-08:40/42 19:51	05:30 06:07-06:31/24 20:59	04:30 05:45-06:32/47 21:59	04:19 05:55-06:18/23 22:20
31	08:23 08:56-09:23/27 16:38		06:51 07:59-08:40/41 19:53		04:28 05:45-06:31/46 22:01	
Potential sun hours	227	262	365	429	515	539
Sum of minutes with flicker	398	1107	942	331	1504	825

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	Last time (hh:mm) with flicker	Minutes with flicker
	Sun set (hh:mm)	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	Minutes with flicker

Project:

Flickering_Valka_Nordex175

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

16/01/2026 09:49/4.1.254

SHADOW - Calendar per WTG

Calculation: Flickering_Valka_Nordex175 WTG: 6 - NORDEX N175/6.X 6800 175.0 !-! hub: 162.0 m (TOT: 249.5 m) (29)
Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	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 05:55-06:19/24 22:20	05:09 05:55-06:48/53 21:35	06:15 20:17	07:18 07:58-08:16/18 18:53	07:28 08:07-08:47/40 16:32	08:33 13:36-13:52/16 15:37
2	04:21 05:55-06:20/25 22:19	05:11 05:56-06:48/52 21:33	06:17 20:15	07:21 08:01-08:11/10 18:51	07:30 08:07-08:49/42 16:30	08:35 13:36-13:54/18 15:36
3	04:22 06:22-06:28/6 22:19	05:13 05:56-06:47/51 21:31	06:19 08:08-08:19/11 20:12	07:23 18:48	07:32 08:07-08:51/44 16:27	08:36 13:36-13:55/19 15:35
4	04:23 05:55-06:20/25 22:18	05:15 05:57-06:47/50 21:29	06:21 08:03-08:23/20 20:09	07:25 18:45	07:34 08:09-08:51/42 16:25	08:38 13:36-13:56/20 15:34
5	04:24 05:55-06:31/36 22:17	05:17 05:58-06:46/48 21:26	06:23 08:01-08:25/24 20:06	07:27 18:42	07:37 08:12-08:52/40 16:23	08:40 13:35-13:56/21 15:34
6	04:25 05:55-06:33/38 22:17	05:20 05:59-06:46/47 21:24	06:26 07:58-08:27/29 20:04	07:29 18:40	07:39 08:14-08:52/38 16:21	08:42 13:35-13:57/22 15:33
7	04:26 05:54-06:34/40 22:16	05:22 06:01-06:45/44 21:22	06:28 07:57-08:28/31 20:01	07:31 08:50-09:03/13 18:37	07:41 08:17-08:53/36 16:18	08:43 13:35-13:58/23 15:32
8	04:27 05:54-06:35/41 22:15	05:24 06:03-06:45/42 21:19	06:30 07:55-08:29/34 19:58	07:34 08:48-09:06/18 18:34	07:44 08:20-08:54/34 16:16	08:45 13:36-13:59/23 15:31
9	04:29 05:54-06:36/42 22:14	05:26 06:07-06:44/37 21:17	06:32 07:53-08:30/37 19:55	07:36 08:45-09:07/22 18:31	07:46 08:22-08:54/32 16:14	08:46 13:35-13:59/24 15:31
10	04:30 05:53-06:37/44 22:13	05:28 06:12-06:43/31 21:15	06:34 07:52-08:30/38 19:52	07:38 08:43-09:13/30 18:29	07:48 08:25-08:54/29 16:12	08:47 13:36-14:00/24 15:30
11	04:31 05:54-06:38/44 22:11	05:30 06:13-06:42/29 21:12	06:36 07:51-08:31/40 19:50	07:40 08:43-09:16/33 18:26	07:51 08:27-08:53/26 16:10	08:49 13:36-14:00/24 15:30
12	04:33 05:53-06:39/46 22:10	05:32 06:14-06:40/26 21:10	06:38 07:50-08:31/41 19:47	07:42 08:42-09:18/36 18:23	07:53 08:30-08:54/24 16:08	08:50 13:37-14:01/24 15:30
13	04:34 05:53-06:40/47 22:09	05:34 06:15-06:39/24 21:07	06:40 07:49-08:31/42 19:44	07:45 08:40-09:19/39 18:20	07:55 08:32-08:53/21 16:06	08:51 13:37-14:01/24 15:29
14	04:36 05:53-06:41/48 22:08	05:36 06:17-06:37/20 21:05	06:42 07:48-08:32/44 19:41	07:47 08:39-09:19/40 18:18	07:57 08:35-08:53/18 16:04	08:52 13:37-14:02/25 15:29
15	04:38 05:53-06:41/48 22:06	05:39 06:20-06:34/14 21:02	06:44 07:48-08:32/44 19:38	07:49 08:40-09:21/41 18:15	08:00 08:38-08:53/15 16:02	08:54 13:38-14:03/25 15:29
16	04:39 05:53-06:43/50 22:05	05:41 06:26-06:27/1 21:00	06:47 07:47-08:32/45 19:36	07:51 08:39-09:21/42 18:12	08:02 08:40-08:52/12 16:00	08:55 13:38-14:03/25 15:29
17	04:41 05:53-06:43/50 22:03	05:43 20:57	06:49 07:47-08:32/45 19:33	07:53 08:39-09:22/43 18:10	08:04 08:43-08:52/9 15:58	08:55 13:39-14:04/25 15:29
18	04:42 05:53-06:44/51 22:02	05:45 20:55	06:51 07:46-08:32/46 19:30	07:56 08:39-09:21/42 18:07	08:06 08:45-08:50/5 15:56	08:56 13:38-14:04/26 15:29
19	04:44 05:52-06:44/52 22:00	05:47 20:52	06:53 07:47-08:32/45 19:27	07:58 08:39-09:21/42 18:05	08:08 08:48-08:49/1 15:54	08:57 13:39-14:04/25 15:29
20	04:46 05:53-06:45/52 21:59	05:49 20:50	06:55 07:47-08:32/45 19:24	08:00 08:40-09:22/42 18:02	08:11 15:53	08:58 13:40-14:05/25 15:30
21	04:48 05:52-06:45/53 21:57	05:51 20:47	06:57 07:47-08:31/44 19:21	08:02 08:40-09:21/41 17:59	08:13 15:51	08:58 13:41-14:06/25 15:30
22	04:50 05:52-06:46/54 21:55	05:54 20:44	06:59 07:47-08:30/43 19:19	08:05 08:41-09:21/40 17:57	08:15 15:49	08:59 13:41-14:06/25 15:30
23	04:51 05:53-06:47/54 21:53	05:56 20:42	07:01 07:47-08:29/42 19:16	08:07 08:42-09:20/38 17:54	08:17 15:48	09:00 13:41-14:06/25 15:31
24	04:53 05:52-06:46/54 21:51	05:58 20:39	07:04 07:48-08:28/40 19:13	08:09 08:42-09:21/39 17:52	08:19 15:46	09:00 13:42-14:07/25 15:32
25	04:55 05:53-06:47/54 21:50	06:00 20:36	07:06 07:48-08:27/39 19:10	07:11 07:45-08:24/39 16:49	08:21 15:45	09:00 13:42-14:07/25 15:32
26	04:57 05:53-06:47/54 21:48	06:02 20:34	07:08 07:49-08:26/37 19:07	07:14 07:47-08:29/42 16:47	08:23 15:44	09:01 13:43-14:08/25 15:33
27	04:59 05:53-06:48/55 21:46	06:04 20:31	07:10 07:50-08:24/34 19:05	07:16 07:53-08:33/40 16:44	08:25 15:42	09:01 13:43-14:08/25 15:34
28	05:01 05:53-06:47/54 21:44	06:06 20:28	07:12 07:53-08:23/30 19:02	07:18 07:53-08:35/42 16:42	08:27 13:40-13:47/7 15:41	09:01 13:44-14:09/25 15:35
29	05:03 05:53-06:47/54 21:42	06:09 20:26	07:14 07:54-08:21/27 18:59	07:21 07:56-08:38/42 16:39	08:29 13:38-13:49/11 15:40	09:01 13:45-14:09/24 15:36
30	05:05 05:54-06:48/54 21:40	06:11 20:23	07:16 07:55-08:19/24 18:56	07:23 07:58-08:39/41 16:37	08:31 13:37-13:51/14 15:38	09:01 13:44-14:09/25 15:37
31	05:07 05:54-06:48/54 21:37	06:13 20:20		07:25 08:07-08:40/33 16:34		09:01 13:45-14:10/25 15:38
Potential sun hours	538	474	386	321	241	207
Sum of minutes with flicker	1438	569	1021	948	540	732

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	Last time (hh:mm) with flicker	Minutes with flicker
	Sun set (hh:mm)	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	Minutes with flicker

Project:

Flickering_Valka_Nordex175

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

16/01/2026 09:49/4.1.254

SHADOW - Calendar per WTG

Calculation: Flickering_Valka_Nordex175 WTG: 7 - NORDEX N175/6.X 6800 175.0 !-! hub: 162.0 m (TOT: 249.5 m) (40)
Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

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

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 09:43-10:06/23 15:40	08:21 09:23-10:03/40 16:40	07:14 09:33-11:08/95 17:46	06:48 10:37-11:37/60 19:55 07:51-08:59/68	05:28 21:01	04:27 22:03
2	09:00 09:43-10:07/24 15:41	08:19 09:23-10:04/41 16:42	07:11 09:32-11:08/96 17:48	06:45 10:38-11:33/55 19:57 07:51-08:56/65	05:25 21:04	04:26 22:04
3	09:00 09:42-10:08/26 15:42	08:17 09:24-10:05/41 16:45	07:08 09:31-11:08/97 17:51	06:42 10:40-11:29/49 07:50-08:35/45 19:59 08:39-08:51/12	05:23 21:06	04:25 22:06
4	08:59 09:41-10:08/27 15:44	08:15 10:18-10:24/6 16:47 09:23-10:04/41	07:05 09:31-11:08/97 17:53	06:39 10:43-11:26/43 20:02 07:51-08:35/44	05:21 21:08	04:23 22:07
5	08:59 09:40-10:09/29 15:45	08:13 10:10-10:32/22 16:49 09:24-10:04/40	07:03 09:31-11:09/98 17:55 07:48-08:02/14	06:37 10:46-11:21/35 20:04 07:51-08:34/43	05:18 21:10	04:22 22:08
6	08:58 09:39-10:10/31 15:47	08:10 09:25-10:36/71 16:52	07:00 09:30-11:09/99 17:57 07:44-08:05/21	06:34 10:50-11:14/24 20:06 07:51-08:33/42	05:16 21:12	04:21 22:10
7	08:57 09:38-10:10/32 15:48	08:08 09:25-10:40/75 16:54	06:57 09:30-11:08/98 18:00 07:41-08:08/27	06:31 07:51-08:31/40 20:08	05:13 21:14	04:21 22:11
8	08:57 09:37-10:11/34 15:50	08:06 09:26-10:44/78 16:57	06:55 09:29-11:08/99 18:02 07:38-08:09/31	06:28 07:52-08:31/39 20:11	05:11 21:17	04:20 22:12
9	08:56 09:37-10:12/35 15:52	08:04 09:26-10:46/80 16:59	06:52 09:28-11:08/100 18:04 07:36-08:10/34	06:26 07:53-08:29/36 20:13	05:09 21:19	04:19 22:13
10	08:55 09:37-10:13/36 15:53	08:01 09:27-10:49/82 17:01	06:49 09:29-11:08/99 18:06 07:35-08:12/37	06:23 07:53-08:27/34 20:15	05:07 21:21	04:18 22:14
11	08:54 09:38-10:14/36 15:55	07:59 09:28-10:50/82 17:04	06:46 09:28-11:08/100 18:09 07:34-08:13/39	06:20 07:55-08:26/31 20:17	05:04 21:23	04:18 22:15
12	08:53 09:37-10:13/36 15:57	07:57 09:28-10:52/84 17:06	06:44 09:28-11:07/99 18:11 07:32-08:14/42	06:17 07:56-08:23/27 20:19	05:02 21:25	04:17 22:16
13	08:52 09:37-10:14/37 15:59	07:54 09:30-10:54/84 17:08	06:41 09:28-11:06/98 18:13 07:31-08:14/43	06:15 07:58-08:20/22 20:22	05:00 21:27	04:16 22:17
14	08:51 09:37-10:14/37 16:01	07:52 09:31-10:55/84 17:11	06:38 09:27-11:06/99 18:15 07:30-08:14/44	06:12 08:01-08:17/16 20:24	04:58 21:29	04:16 22:18
15	08:50 09:38-10:15/37 16:03	07:49 09:34-10:57/83 17:13	06:35 09:28-11:06/98 18:18 07:30-08:15/45	06:09 08:07-08:10/3 20:26	04:56 21:31	04:16 22:18
16	08:48 09:36-10:15/39 16:05	07:47 09:36-10:58/82 17:16	06:33 09:28-11:05/97 18:20 07:29-08:15/46	06:07 20:28	04:54 21:33	04:15 22:19
17	08:47 09:32-10:15/43 16:07	07:44 09:40-10:59/79 17:18	06:30 09:28-11:04/96 07:14-07:24/10 18:22 07:28-08:15/47	06:04 20:30	04:52 21:36	04:15 22:20
18	08:46 09:31-10:16/45 16:09	07:42 09:43-11:01/78 17:20	06:27 09:28-11:03/95 18:24 07:08-08:15/67	06:01 20:33	04:50 21:38	04:15 22:20
19	08:44 09:30-10:16/46 16:11	07:39 09:41-11:02/81 17:23	06:24 09:28-11:02/94 18:26 07:05-08:15/70	05:59 20:35	04:48 21:40	04:15 22:21
20	08:43 09:28-10:16/48 16:13	07:37 09:40-11:02/82 17:25	06:21 09:28-11:00/92 18:29 07:03-08:14/71	05:56 20:37	04:46 21:41	04:15 22:21
21	08:41 09:27-10:16/49 16:15	07:34 09:40-11:04/84 17:27	06:19 09:29-11:00/91 18:31 07:01-08:14/73	05:53 20:39	04:44 21:43	04:15 22:21
22	08:39 09:27-10:16/49 16:17	07:32 09:38-11:04/86 17:30	06:16 09:29-10:58/89 18:33 06:59-08:14/75	05:51 20:41	04:42 21:45	04:15 22:21
23	08:38 09:26-10:15/49 16:19	07:29 09:37-11:05/88 17:32	06:13 09:29-10:57/88 18:35 06:58-08:13/75	05:48 20:44	04:41 21:47	04:15 22:22
24	08:36 09:25-10:15/50 16:22	07:27 09:37-11:06/89 17:34	06:10 09:29-10:55/86 18:38 06:56-08:12/76	05:45 20:46	04:39 21:49	04:16 22:22
25	08:34 09:25-10:14/49 16:24	07:24 09:36-11:07/91 17:37	06:07 09:29-10:53/84 18:40 06:55-08:11/76	05:43 20:48	04:37 21:51	04:16 22:22
26	08:33 09:25-10:14/49 16:26	07:21 09:35-11:07/92 17:39	06:05 09:30-10:51/81 18:42 06:55-08:10/75	05:40 20:50	04:36 21:53	04:17 22:22
27	08:31 09:24-10:13/49 16:28	07:19 09:34-11:07/93 17:41	06:02 09:31-10:50/79 18:44 06:54-08:09/75	05:38 20:53	04:34 21:54	04:17 22:21
28	08:29 09:24-10:11/47 16:31	07:16 09:34-11:08/94 17:44	05:59 09:32-10:48/76 18:46 06:53-08:07/74	05:35 20:55	04:32 21:56	04:18 22:21
29	08:27 09:23-10:03/40 16:33 10:04-10:06/2		06:56 10:33-11:45/72 19:49 07:52-09:06/74	05:33 20:57	04:31 21:58	04:18 22:21
30	08:25 09:24-10:03/39 16:35		06:53 10:33-11:42/69 19:51 07:51-09:04/73	05:30 20:59	04:30 21:59	04:19 22:20
31	08:23 09:24-10:04/40 16:38		06:51 10:35-11:40/65 19:53 07:52-09:02/70		04:28 22:01	
Potential sun hours	227	262	365	429	515	539
Sum of minutes with flicker	1213	2153	4330	833	0	0

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	Last time (hh:mm) with flicker	Minutes with flicker
	Sun set (hh:mm)	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	Minutes with flicker

Project:

Flickering_Valka_Nordex175

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

16/01/2026 09:49/4.1.254

SHADOW - Calendar per WTG

Calculation: Flickering_Valka_Nordex175
Assumptions for shadow calculations

WTG: 7 - NORDEX N175/6.X 6800 175.0 !-! hub: 162.0 m (TOT: 249.5 m) (40)
Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	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	08:56-10:17/81 08:11-08:53/42	08:33 15:37
2	04:21 22:19	05:11 21:33	06:17 20:15	07:21 18:51	08:55-10:15/80 08:11-08:52/41	08:35 15:36
3	04:22 22:19	05:13 21:31	06:19 20:12	07:23 18:48	08:55-10:13/78 08:12-08:50/38	08:36 15:35
4	04:23 22:18	05:15 21:29	06:21 20:09	07:25 18:45	08:54-10:10/76 08:14-08:49/35	08:38 15:34
5	04:24 22:17	05:17 21:26	06:23 20:06	07:27 18:42	09:36-10:07/31 08:15-08:47/32	08:40 15:34
6	04:25 22:17	05:20 21:24	06:26 20:04	07:29 18:40	09:40-10:01/21 08:16-08:45/29	08:41 15:33
7	04:26 22:16	05:22 21:22	06:28 20:01	07:31 18:37	10:05-11:44/99 08:18-08:42/24	08:43 15:32
8	04:27 22:15	05:24 21:19	06:30 19:58	07:34 18:34	10:06-11:44/98 08:21-08:39/18	08:45 15:31
9	04:29 22:14	05:26 21:17	06:32 19:55	07:36 18:31	10:06-11:44/98 08:27-08:33/6	08:46 15:31
10	04:30 22:13	05:28 21:15	06:34 19:52	07:38 18:29	10:06-11:43/97 10:05-11:42/97	08:47 15:30
11	04:32 22:11	05:30 21:12	06:36 19:50	07:40 18:26	10:05-11:42/97 10:06-11:42/96	08:49 15:30
12	04:33 22:10	05:32 21:10	06:38 19:47	07:42 18:23	10:06-11:42/96 10:06-11:41/95	08:50 15:29
13	04:34 22:09	05:34 21:07	06:40 19:44	07:45 18:20	10:06-11:41/95 10:06-11:40/94	08:51 15:29
14	04:36 22:08	05:37 21:05	06:42 19:41	07:47 18:18	10:06-11:40/94 10:07-11:40/93	08:52 15:29
15	04:38 22:06	05:39 21:02	06:45 19:38	07:49 18:15	10:07-11:40/93 10:07-11:39/92	08:53 15:29
16	04:39 22:05	05:41 21:00	06:47 19:36	07:51 18:12	10:07-11:39/92 10:07-11:37/90	08:54 15:29
17	04:41 22:03	05:43 20:57	06:49 19:33	07:53 18:10	10:07-11:37/90 10:08-11:37/89	08:55 15:29
18	04:43 22:02	05:45 20:55	06:51 19:30	07:56 18:07	10:08-11:37/89 10:09-11:36/87	08:56 15:29
19	04:44 22:00	05:47 20:52	06:53 19:27	07:58 18:05	10:09-11:36/87 10:10-11:35/85	08:57 15:29
20	04:46 21:58	05:49 20:50	06:55 19:24	08:00 18:02	10:10-11:35/85 10:10-11:34/84	08:58 15:30
21	04:48 21:57	05:51 20:47	06:57 19:21	08:02 17:59	10:10-11:34/84 10:10-11:32/82	08:58 15:30
22	04:50 21:55	05:54 20:44	07:00 19:19	08:05 17:57	10:10-11:32/82 10:12-11:32/80	08:59 15:31
23	04:52 21:53	05:56 20:42	07:01 19:16	08:07 17:54	10:12-11:32/80 10:12-11:30/78	09:00 15:31
24	04:53 21:51	05:58 20:39	07:04 19:13	08:09 17:52	10:12-11:30/78 10:09-10:29/80	09:00 15:32
25	04:55 21:50	06:00 20:36	07:06 19:10	08:11 16:49	10:11-11:45/94 09:05-10:27/82	09:00 15:45
26	04:57 21:48	06:02 20:34	07:08 19:07	08:14 16:47	10:10-11:45/95 08:10-08:57/47	09:01 15:33
27	04:59 21:46	06:04 20:31	07:10 19:05	08:16 16:44	10:09-11:46/97 10:08-10:56/46	09:01 15:34
28	05:01 21:44	06:06 20:28	07:12 19:02	08:18 16:42	10:09-11:47/98 08:11-08:57/46	09:01 15:35
29	05:03 21:42	06:09 20:26	07:14 18:59	08:21 16:39	10:08-11:46/98 08:11-08:56/45	09:01 15:36
30	05:05 21:40	06:11 20:23	07:16 18:56	08:23 16:37	10:08-11:46/98 08:11-08:54/43	09:01 15:37
31	05:07 21:37	06:13 20:20	07:18 18:58	08:25 16:34	08:57-10:19/82 10:19-10:19/82	09:01 15:38
Potential sun hours	538	474	386	321	241	207
Sum of minutes with flicker	0	72	3668	3072	1494	696

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	Last time (hh:mm) with flicker	Minutes with flicker
	Sun set (hh:mm)	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	Minutes with flicker

Project:

Flickering_Valka_Nordex175

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

16/01/2026 09:49/4.1.254

SHADOW - Calendar per WTG

Calculation: Flickering_Valka_Nordex175 WTG: 8 - NORDEX N175/6.X 6800 175.0 !-! hub: 162.0 m (TOT: 249.5 m) (38)

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

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

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	07:13 07:42-08:06/24 17:46	06:48 07:14-07:33/19 19:55	05:28 07:11-07:43/32 21:01	04:27 22:03
2	09:00 15:41	08:19 16:42	07:11 07:40-08:07/27 17:48	06:45 07:12-07:43/31 19:57	05:25 07:11-07:41/30 21:04	04:26 22:04
3	09:00 15:42	08:17 16:45	07:08 07:39-08:07/28 17:50	06:42 07:10-07:46/36 19:59	05:23 07:13-07:39/26 21:06	04:25 22:06
4	08:59 15:44	08:15 16:47	07:05 07:38-08:07/29 17:53	06:39 07:10-07:49/39 20:02	05:20 07:15-07:37/22 21:08	04:23 22:07
5	08:59 15:45	08:13 16:49	07:03 07:38-08:08/30 17:55	06:37 07:09-07:50/41 20:04	05:18 07:18-07:34/16 21:10	04:22 22:08
6	08:58 15:47	08:10 16:52	07:00 07:38-08:08/30 17:57	06:34 07:00-07:51/51 20:06	05:16 07:23-07:29/6 21:12	04:21 22:10
7	08:57 15:48	08:08 08:39-08:43/4 16:54	06:57 07:37-08:07/30 18:00	06:31 06:57-07:52/55 20:08	05:13 21:14	04:20 22:11
8	08:57 15:50	08:06 08:37-08:45/8 16:57	06:55 07:37-08:06/29 18:02	06:28 06:55-07:53/58 20:10	05:11 21:17	04:20 22:12
9	08:56 15:51	08:04 08:34-08:46/12 16:59	06:52 07:36-08:06/30 18:04	06:26 06:53-07:54/61 20:13	05:09 21:19	04:19 22:13
10	08:55 15:53	08:01 08:32-08:48/16 17:01	06:49 07:37-08:05/28 18:06	06:23 06:51-07:54/63 20:15	05:07 21:21	04:18 22:14
11	08:54 15:55	07:59 08:29-08:48/19 17:04	06:46 07:38-08:04/26 18:09	06:20 06:51-07:55/64 20:17	05:04 21:23	04:17 22:15
12	08:53 15:57	07:57 08:27-08:50/23 17:06	06:44 07:38-08:03/25 18:11	06:17 06:50-07:55/65 20:19	05:02 21:25	04:17 22:16
13	08:52 15:59	07:54 08:24-08:50/26 17:08	06:41 07:39-08:01/22 18:13	06:15 06:49-07:55/66 20:22	05:00 21:27	04:16 22:17
14	08:51 16:01	07:52 08:21-08:49/28 17:11	06:38 07:40-07:59/19 18:15	06:12 06:49-07:56/67 20:24	04:58 21:29	04:16 22:18
15	08:50 16:03	07:49 08:19-08:50/31 17:13	06:35 07:42-07:58/16 18:18	06:09 06:48-07:55/67 20:26	04:56 21:31	04:16 22:18
16	08:48 16:05	07:47 08:18-08:49/31 17:16	06:32 07:45-07:54/9 18:20	06:07 06:48-07:55/67 20:28	04:54 21:33	04:15 22:19
17	08:47 16:07	07:44 08:18-08:49/31 17:18	06:30 18:22	06:04 06:48-07:55/67 20:30	04:52 21:35	04:15 22:20
18	08:46 16:09	07:42 08:18-08:49/31 17:20	06:27 18:24	06:01 06:48-07:54/66 20:33	04:50 21:37	04:15 22:20
19	08:44 16:11	07:39 08:18-08:48/30 17:23	06:24 18:26	05:59 06:49-07:54/65 20:35	04:48 21:39	04:15 22:21
20	08:43 16:13	07:37 08:18-08:46/28 17:25	06:21 18:29	05:56 06:49-07:54/65 20:37	04:46 21:41	04:15 22:21
21	08:41 16:15	07:34 08:19-08:45/26 17:27	06:19 18:31	05:53 06:51-07:54/63 20:39	04:44 21:43	04:15 22:21
22	08:39 16:17	07:32 08:20-08:42/22 17:30	06:16 18:33	05:51 06:51-07:52/61 20:41	04:42 21:45	04:15 22:21
23	08:38 16:19	07:29 08:21-08:37/16 17:32	06:13 18:35	05:48 06:53-07:52/59 20:44	04:41 21:47	04:15 22:22
24	08:36 16:22	07:27 08:23-08:35/12 17:34	06:10 18:37	05:45 07:05-07:51/46 20:46	04:39 21:49	04:16 22:22
25	08:34 16:24	07:24 07:52-07:58/6 17:37	06:07 18:40	05:43 07:06-07:51/45 20:48	04:37 21:51	04:16 22:22
26	08:33 16:26	07:21 07:49-08:01/12 17:39	06:05 18:42	05:40 07:06-07:49/43 20:50	04:36 21:53	04:17 22:22
27	08:31 16:28	07:19 07:46-08:03/17 17:41	06:02 18:44	05:38 07:07-07:48/41 20:52	04:34 21:54	04:17 22:21
28	08:29 16:31	07:16 07:44-08:05/21 17:44	05:59 18:46	05:35 07:08-07:48/40 20:55	04:32 21:56	04:18 22:21
29	08:27 16:33		06:56 19:48	05:33 07:08-07:46/38 20:57	04:31 21:58	04:18 22:21
30	08:25 16:35		06:53 07:21-07:27/6 19:51	05:30 07:09-07:45/36 20:59	04:30 21:59	04:19 22:20
31	08:23 16:38		06:51 07:17-07:31/14 19:53		04:28 22:01	
Potential sun hours	227	262	365	429	515	539
Sum of minutes with flicker	0	455	422	1592	132	0

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	Last time (hh:mm) with flicker	Minutes with flicker
	Sun set (hh:mm)	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	Minutes with flicker

Project:

Flickering_Valka_Nordex175

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

16/01/2026 09:49/4.1.254

SHADOW - Calendar per WTG

Calculation: Flickering_Valka_Nordex175 WTG: 8 - NORDEX N175/6.X 6800 175.0 !-! hub: 162.0 m (TOT: 249.5 m) (38)

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	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	06:50-07:54/64 18:53	07:18 16:32	08:02-08:17/15 15:37
2	04:21 22:19	05:11 21:33	06:17 20:15	06:50-07:53/63 18:51	07:21 16:30	08:16-08:42/26 15:36
3	04:22 22:19	05:13 21:31	06:19 20:12	06:51-07:52/61 18:48	07:23 16:27	08:15-08:42/27 15:35
4	04:23 22:18	05:15 21:29	06:21 20:09	06:52-07:51/59 18:45	07:25 16:25	08:15-08:43/28 15:34
5	04:24 22:17	05:17 21:26	06:23 20:06	06:54-07:49/55 18:42	07:27 16:23	08:14-08:43/29 15:34
6	04:25 22:17	05:20 21:24	06:25 20:04	06:56-07:47/51 18:40	07:29 16:21	08:13-08:43/30 15:33
7	04:26 22:16	05:22 21:22	06:28 20:01	07:04-07:45/41 18:37	07:31 16:18	08:13-08:43/30 15:32
8	04:27 22:15	05:24 21:19	06:30 19:58	07:04-07:43/39 18:34	07:34 16:16	08:13-08:43/30 15:31
9	04:29 22:14	05:26 21:17	06:32 19:55	07:04-07:40/36 18:31	07:36 16:14	08:13-08:43/30 15:31
10	04:30 22:13	05:28 21:15	06:34 19:52	07:05-07:37/32 18:29	07:38 16:12	08:13-08:42/29 15:30
11	04:31 22:11	05:30 21:12	06:36 19:50	07:26-07:29/3 18:26	07:40 16:10	08:13-08:41/28 15:30
12	04:33 22:10	05:32 21:10	06:38 19:47	07:06-07:25/19 18:23	07:42 16:08	08:15-08:40/25 15:30
13	04:34 22:09	05:34 21:07	06:40 19:44	07:08-07:23/15 18:20	07:45 16:06	08:16-08:39/23 15:29
14	04:36 22:08	05:36 21:05	06:42 19:41	07:11-07:19/8 18:18	07:47 16:04	08:17-08:37/20 15:29
15	04:38 22:06	05:39 21:02	06:44 19:38	07:49 18:15	08:20-08:36/16 16:02	08:00 15:29
16	04:39 22:05	05:41 21:00	06:47 19:36	07:51 18:12	08:22-08:32/10 16:00	08:02 15:29
17	04:41 22:03	05:43 20:57	06:49 19:33	07:53 18:10	08:57-09:05/8 15:58	08:04 15:29
18	04:42 22:02	05:45 20:55	06:51 19:30	07:56 18:07	08:53-09:07/14 15:56	08:06 15:29
19	04:44 22:00	05:47 20:52	06:53 19:27	07:58 18:05	08:51-09:10/19 15:54	08:08 15:29
20	04:46 21:58	05:49 20:49	06:55 19:24	08:00 18:02	08:51-09:15/24 15:53	08:11 15:30
21	04:48 21:57	05:51 20:47	06:57 19:21	08:02 17:59	08:49-09:16/27 15:51	08:13 15:30
22	04:50 21:55	05:54 20:44	06:59 19:19	08:05 17:57	08:49-09:18/29 15:49	08:15 15:30
23	04:51 21:53	05:56 20:42	07:01 19:16	08:07 17:54	08:48-09:18/30 15:48	08:17 15:31
24	04:53 21:51	05:58 20:39	07:03 19:13	08:09 17:52	08:48-09:18/30 15:46	08:19 15:32
25	04:55 21:50	06:00 20:36	07:06 19:10	07:11 16:49	07:48-08:19/31 15:45	08:21 15:32
26	04:57 21:48	06:02 20:34	07:08 19:07	07:14 16:47	07:48-08:19/31 15:44	08:23 15:33
27	04:59 21:46	06:04 20:31	07:10 19:05	08:28-08:33/5 16:44	07:49-08:19/30 15:42	08:25 15:34
28	05:01 21:44	06:06 20:28	07:12 19:02	08:24-08:38/14 16:42	07:51-08:19/28 15:41	08:27 15:35
29	05:03 21:42	06:08 20:26	07:14 18:59	08:21-08:40/19 16:39	07:54-08:19/25 15:40	08:29 15:36
30	05:05 21:40	06:11 20:23	07:16 18:56	08:19-08:41/22 16:37	07:56-08:18/22 15:38	08:31 15:37
31	05:07 21:37	06:13 20:20	06:50-07:55/65	07:25 16:34	07:59-08:18/19	09:01 15:38
Potential sun hours	538	474	386	321	241	207
Sum of minutes with flicker	0	1219	606	773	38	0

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

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

Project:

Flickering_Valka_Nordex175

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

16/01/2026 09:49/4.1.254

SHADOW - Calendar per WTG

Calculation: Flickering_Valka_Nordex175 WTG: 9 - NORDEX N175/6.X 6800 175.0 !-! hub: 162.0 m (TOT: 249.5 m) (30)
 Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) []

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

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	11:56-12:16/20	08:21	07:13		06:48	07:18-07:45/27	05:28	05:57-06:06/9	04:27	05:51-06:10/19
	15:39		16:40	17:46		19:55		21:01	06:09-06:30/21	22:03	
2	09:00	11:57-12:17/20	08:19	07:11		06:45	07:17-07:44/27	05:25	05:54-06:08/14	04:26	05:52-06:10/18
	15:41		16:42	17:48		19:57		21:04	06:10-06:30/20	22:04	
3	09:00	11:58-12:16/18	08:17	07:08		06:42	07:17-07:43/26	05:23	05:52-06:28/36	04:24	05:53-06:09/16
	15:42		16:45	17:50		19:59		21:06		22:06	
4	08:59	11:59-12:16/17	08:15	07:05	07:33-07:35/2	06:39	07:18-07:43/25	05:20	05:50-06:27/37	04:23	05:55-06:09/14
	15:43		16:47	17:53		20:02		21:08		22:07	
5	08:59	12:00-12:15/15	08:13	07:03	07:30-07:37/7	06:37	07:18-07:41/23	05:18	05:48-06:25/37	04:22	05:57-06:07/10
	15:45		16:49	17:55		20:04		21:10		22:08	
6	08:58	12:01-12:15/14	08:10	07:00	07:27-07:38/11	06:34	07:18-07:39/21	05:16	05:47-06:14/27	04:21	05:58-06:06/8
	15:46		16:52	17:57		20:06		21:12	06:16-06:23/7	22:10	
7	08:57	12:03-12:14/11	08:08	06:57	07:24-07:38/14	06:31	07:19-07:37/18	05:13	05:46-06:15/29	04:20	
	15:48		16:54	18:00		20:08		21:14		22:11	
8	08:57	12:06-12:12/6	08:06	06:55	07:21-07:38/17	06:28	07:21-07:36/15	05:11	05:46-06:16/30	04:20	
	15:50		16:57	18:02		20:10		21:17		22:12	
9	08:56		08:04	06:52	07:18-07:38/20	06:26	07:23-07:32/9	05:09	05:44-06:15/31	04:19	
	15:51		16:59	18:04		20:13		21:19		22:13	
10	08:55		08:01	06:49	07:17-07:39/22	06:23		05:07	05:44-06:16/32	04:18	
	15:53		17:01	18:06		20:15		21:21		22:14	
11	08:54		07:59	06:46	07:17-07:39/22	06:20		05:04	05:43-06:16/33	04:17	
	15:55		17:04	18:09		20:17		21:23		22:15	
12	08:53		07:57	06:44	07:17-07:38/21	06:17		05:02	05:44-06:17/33	04:17	
	15:57		17:06	18:11		20:19		21:25		22:16	
13	08:52		07:54	06:41	07:17-07:37/20	06:15		05:00	05:44-06:17/33	04:16	
	15:59		17:08	18:13		20:21		21:27		22:17	
14	08:51		07:52	06:38	07:18-07:35/17	06:12		04:58	05:44-06:17/33	04:16	
	16:01		17:11	18:15		20:24		21:29		22:18	
15	08:50		07:49	06:35	07:19-07:34/15	06:09		04:56	05:43-06:17/34	04:16	
	16:03		17:13	18:18		20:26		21:31		22:18	
16	08:48		07:47	06:32	07:21-07:32/11	06:06		04:54	05:43-06:17/34	04:15	
	16:05		17:16	18:20		20:28		21:33		22:19	
17	08:47		07:44	06:30		06:04		04:52	05:43-06:16/33	04:15	
	16:07		17:18	18:22		20:30		21:35		22:20	
18	08:46		07:42	06:27		06:01		04:50	05:44-06:17/33	04:15	
	16:09		17:20	18:24		20:33		21:38		22:20	
19	08:44		07:39	06:24		05:58		04:48	05:44-06:16/32	04:15	
	16:11		17:23	18:26		20:35		21:39		22:21	
20	08:43		07:37	06:21		05:56	06:23-06:27/4	04:46	05:44-06:16/32	04:15	
	16:13		17:25	18:29		20:37		21:41		22:21	
21	08:41		07:34	06:18		05:53	06:21-06:29/8	04:44	05:45-06:16/31	04:15	
	16:15		17:27	18:31		20:39		21:43		22:21	
22	08:39		07:32	06:16		05:51	06:18-06:30/12	04:42	05:45-06:15/30	04:15	
	16:17		17:30	18:33		20:41		21:45		22:21	
23	08:38		07:29	06:13		05:48	06:16-06:31/15	04:40	05:46-06:16/30	04:15	
	16:19		17:32	18:35		20:44		21:47		22:22	
24	08:36		07:27	06:10	06:36-06:41/5	05:45	06:13-06:31/18	04:39	05:46-06:15/29	04:16	
	16:22		17:34	18:37		20:46		21:49		22:22	
25	08:34		07:24	06:07	06:33-06:43/10	05:43	06:11-06:32/21	04:37	05:47-06:15/28	04:16	
	16:24		17:37	18:40		20:48		21:51		22:22	
26	08:33		07:21	06:05	06:31-06:45/14	05:40	06:09-06:31/22	04:35	05:46-06:14/28	04:17	
	16:26		17:39	18:42		20:50		21:53		22:22	
27	08:31		07:19	06:02	06:28-06:45/17	05:38	06:09-06:32/23	04:34	05:47-06:14/27	04:17	
	16:28		17:41	18:44		20:52		21:54		22:21	
28	08:29		07:16	05:59	06:25-06:45/20	05:35	06:09-06:32/23	04:32	05:48-06:13/25	04:18	
	16:31		17:44	18:46		20:55		21:56		22:21	
29	08:27			06:56	07:22-07:45/23	05:33	06:08-06:31/23	04:31	05:49-06:13/24	04:18	
	16:33			19:48		20:57		21:58		22:21	
30	08:25			06:53	07:19-07:45/26	05:30	06:09-06:31/22	04:30	05:50-06:12/22	04:19	
	16:35			19:51		20:59		21:59		22:20	
31	08:23			06:51	07:19-07:46/27			04:28	05:50-06:11/21		
	16:38			19:53				22:01			
Potential sun hours	227		262	365		429		515		539	
Sum of minutes with flicker	121		0	341		382		955		85	

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	Last time (hh:mm) with flicker	Minutes with flicker
	Sun set (hh:mm)	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	Minutes with flicker

SHADOW - Calendar per WTG

Calculation: Flickering_Valka_Nordex175 WTG: 9 - NORDEX N175/6.X 6800 175.0 !-! hub: 162.0 m (TOT: 249.5 m) (30)
Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
0.80 1.82 4.75 6.09 9.67 10.05 8.16 7.72 5.94 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 05:55-06:27/32 21:35	06:15 20:17	07:18 07:56-08:17/21 18:53	07:28 16:32	08:33 15:37
2	04:21 22:19	05:11 05:55-06:27/32 21:33	06:17 20:15	07:21 07:55-08:16/21 18:51	07:30 16:30	08:35 15:36
3	04:22 22:19	05:13 05:54-06:26/32 21:31	06:19 07:21-07:30/9 20:12	07:23 07:55-08:16/21 18:48	07:32 16:27	08:36 15:35
4	04:23 22:18	05:15 05:55-06:25/30 21:29	06:21 07:18-07:33/15 20:09	07:25 07:55-08:17/22 18:45	07:34 16:25	08:38 11:51-11:57/6 15:34
5	04:24 22:17	05:17 05:55-06:25/30 21:26	06:23 07:16-07:34/18 20:06	07:27 07:57-08:16/19 18:42	07:37 16:23	08:40 11:48-11:59/11 15:33
6	04:25 06:06-06:11/5 22:17	05:19 05:56-06:24/28 21:24	06:25 07:14-07:35/21 20:04	07:29 07:59-08:15/16 18:40	07:39 16:20	08:41 11:47-12:01/14 15:33
7	04:26 06:04-06:13/9 22:16	05:22 05:57-06:23/26 21:22	06:28 07:13-07:36/23 20:01	07:31 08:01-08:13/12 18:37	07:41 16:18	08:43 11:47-12:02/15 15:32
8	04:27 06:02-06:14/12 22:15	05:24 05:58-06:35/37 21:19	06:30 07:12-07:37/25 19:58	07:34 08:04-08:13/9 18:34	07:44 16:16	08:45 11:47-12:04/17 15:31
9	04:29 06:01-06:16/15 22:14	05:26 06:00-06:36/36 21:17	06:32 07:11-07:37/26 19:55	07:36 08:06-08:11/5 18:31	07:46 16:14	08:46 11:46-12:04/18 15:31
10	04:30 06:00-06:17/17 22:13	05:28 06:02-06:37/35 21:15	06:34 07:10-07:37/27 19:52	07:38 18:29	07:48 16:12	08:47 11:46-12:06/20 15:30
11	04:31 06:00-06:18/18 22:11	05:30 06:04-06:17/13 21:12	06:36 07:10-07:37/27 19:50	07:40 18:26	07:51 16:10	08:49 11:46-12:06/20 15:30
12	04:33 05:59-06:19/20 22:10	05:32 06:06-06:14/8 21:10	06:38 07:10-07:37/27 19:47	07:42 18:23	07:53 16:08	08:50 11:46-12:08/22 15:30
13	04:34 05:58-06:20/22 22:09	05:34 06:17-06:39/22 21:07	06:40 07:10-07:37/27 19:44	07:45 18:20	07:55 16:06	08:51 11:46-12:08/22 15:29
14	04:36 05:58-06:21/23 22:08	05:36 06:17-06:39/22 21:05	06:42 07:12-07:36/24 19:41	07:47 18:18	07:57 16:04	08:52 11:46-12:09/23 15:29
15	04:37 05:57-06:22/25 22:06	05:39 06:16-06:39/23 21:02	06:44 07:14-07:35/21 19:38	07:49 18:15	08:00 16:02	08:53 11:47-12:10/23 15:29
16	04:39 05:57-06:23/26 22:05	05:41 06:16-06:39/23 21:00	06:47 07:16-07:34/18 19:36	07:51 18:12	08:02 16:00	08:54 10:51-10:55/4 15:29 11:47-12:11/24
17	04:41 05:56-06:23/27 22:03	05:43 06:16-06:39/23 20:57	06:49 07:18-07:32/14 19:33	07:53 18:10	08:04 15:58	08:55 10:51-10:56/5 15:29 11:48-12:12/24
18	04:42 05:57-06:24/27 22:02	05:45 06:18-06:38/20 20:55	06:51 07:20-07:31/11 19:30	07:56 18:07	08:06 15:56	08:56 10:51-10:58/7 15:29 11:47-12:11/24
19	04:44 05:56-06:24/28 22:00	05:47 06:20-06:38/18 20:52	06:53 07:23-07:29/6 19:27	07:58 18:04	08:08 15:54	08:57 10:50-10:58/8 11:48-12:12/24 15:29 11:04-11:05/1
20	04:46 05:56-06:25/29 21:58	05:49 06:22-06:37/15 20:49	06:55 19:24	08:00 18:02	08:11 15:53	08:58 10:51-10:59/8 11:48-12:13/25 15:30 11:04-11:07/3
21	04:48 05:55-06:25/30 21:57	05:51 06:24-06:35/11 20:47	06:57 19:21	08:02 17:59	08:13 15:51	08:58 10:52-11:00/8 11:49-12:14/25 15:30 11:04-11:08/4
22	04:50 05:55-06:26/31 21:55	05:54 06:26-06:34/8 20:44	06:59 19:19	08:05 17:57	08:15 15:49	08:59 10:51-11:00/9 11:49-12:14/25 15:30 11:04-11:08/4
23	04:51 05:55-06:27/32 21:53	05:56 06:28-06:32/4 20:42	07:01 19:16	08:07 17:54	08:17 15:48	08:59 10:52-11:00/8 11:49-12:14/25 15:31 11:04-11:08/4
24	04:53 05:54-06:26/32 21:51	05:58 20:39	07:03 19:13	08:09 17:52	08:19 15:46	09:00 10:53-11:01/8 11:51-12:15/24 15:32 11:06-11:09/3
25	04:55 05:54-06:27/33 21:50	06:00 20:36	07:06 19:10	07:11 16:49	08:21 15:45	09:00 10:54-11:01/7 15:32 11:51-12:15/24
26	04:57 05:54-06:27/33 21:48	06:02 20:34	07:08 19:07	07:14 16:47	08:23 15:43	09:01 10:54-11:01/7 15:33 11:51-12:15/24
27	04:59 05:54-06:28/34 21:46	06:04 20:31	07:10 08:03-08:12/9 19:05	07:16 16:44	08:25 15:42	09:01 10:56-11:00/4 15:34 11:52-12:16/24
28	05:01 05:54-06:27/33 21:44	06:06 20:28	07:12 08:01-08:15/14 19:02	07:18 16:42	08:27 15:41	09:01 10:58-10:59/1 15:35 11:53-12:16/23
29	05:03 05:54-06:27/33 21:42	06:08 20:26	07:14 07:59-08:16/17 18:59	07:21 16:39	08:29 15:40	09:01 11:54-12:17/23 15:36
30	05:05 05:54-06:27/33 21:40	06:11 20:23	07:16 07:57-08:16/19 18:56	07:23 16:37	08:31 15:38	09:01 11:54-12:16/22 15:37
31	05:07 05:54-06:27/33 21:37	06:13 20:20		07:25 16:34		09:01 11:55-12:17/22 15:38
Potential sun hours	538	474	386	321	241	207
Sum of minutes with flicker	660	578	398	146	0	696

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	Last time (hh:mm) with flicker	Minutes with flicker
	Sun set (hh:mm)	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	Minutes with flicker

Flickering_Valka_Nordex175

SIA Estonian, Latvian & Lithuanian environment
Vilandes 3-6
LV-1010 Riga
0037167242411
Baiba / baiba.ozolina@environment.lv
Calculated:
16/01/2026 09:49/4.1.254

Project:

Flickering_Valka_Nordex175

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

16/01/2026 09:49/4.1.254

SHADOW - Calendar per WTG

Calculation: Flickering_Valka_Nordex175 WTG: 11 - NORDEX N175/6.X 6800 175.0 !-! hub: 162.0 m (TOT: 249.5 m) (39)
Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

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

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

	January	February	March	April	May	June
1	09:00 13:19-13:29/10 15:39	08:21 16:02-16:03/1 16:40	07:13 16:16-16:57/41 17:46	06:48 19:55 21:01	05:28 22:02	04:27 22:02
2	09:00 13:20-13:28/8 15:41	08:19 16:01-16:06/5 16:42	07:11 16:15-16:57/42 17:48	06:45 19:57 21:03	05:25 22:04	04:26 22:04
3	08:59 13:23-13:27/4 15:42	08:17 15:59-16:08/9 16:45	07:08 16:14-16:57/43 17:50	06:42 19:59 21:06	05:23 22:05	04:24 22:05
4	08:59 15:43 15:45	08:15 15:58-16:11/13 16:47	07:05 16:14-16:57/43 17:53	06:39 20:02 21:08	05:20 22:07	04:23 22:07
5	08:58 15:45 15:46	08:12 15:58-16:14/16 16:49	07:03 16:13-16:56/43 17:55	06:36 20:04 21:10	05:18 22:08	04:22 22:08
6	08:58 15:46 15:47	08:10 15:56-16:16/20 16:52	07:00 16:14-16:57/43 17:57	06:34 20:06 21:12	05:16 22:09	04:21 22:09
7	08:57 15:48 15:49	08:08 15:56-16:20/24 16:54	06:57 16:14-16:56/42 17:59	06:31 20:08 21:14	05:13 22:11	04:20 22:11
8	08:56 15:50 15:51	08:06 15:55-16:22/27 16:56	06:54 16:14-16:56/42 18:02	06:28 20:10 21:16	05:11 22:12	04:20 22:12
9	08:56 15:51 15:52	08:03 15:56-16:25/29 16:59	06:52 16:14-16:55/41 18:04	06:25 20:13 21:19	05:09 22:13	04:19 22:13
10	08:55 15:53 15:54	08:01 15:55-16:27/32 17:01	06:49 16:14-16:54/40 18:06	06:23 20:15 21:21	05:06 22:14	04:18 22:14
11	08:54 15:55 15:56	07:59 15:56-16:29/33 17:04	06:46 16:15-16:54/39 18:08	06:20 20:17 21:23	05:04 22:15	04:17 22:15
12	08:53 15:57 15:58	07:56 15:55-16:29/34 17:06	06:43 16:16-16:52/36 18:11	06:17 20:19 21:25	05:02 22:16	04:17 22:16
13	08:52 15:59 15:59	07:54 15:56-16:30/34 17:08	06:41 16:16-16:51/35 18:13	06:15 20:21 21:27	05:00 22:17	04:16 22:17
14	08:51 16:01 16:02	07:52 15:56-16:29/33 17:11	06:38 16:17-16:49/32 18:15	06:12 20:24 21:29	04:58 22:18	04:16 22:18
15	08:49 16:02 16:03	07:49 15:56-16:29/33 17:13	06:35 16:19-16:47/28 18:17	06:09 20:26 21:31	04:56 22:19	04:16 22:19
16	08:48 16:04 16:05	07:47 15:58-16:29/31 17:15	06:32 16:20-16:45/25 18:20	06:06 20:28 21:33	04:54 22:20	04:15 22:20
17	08:47 16:06 16:07	07:44 15:58-16:28/30 17:18	06:30 16:24-16:43/19 18:22	06:04 20:30 21:35	04:52 22:21	04:15 22:21
18	08:45 16:09 16:10	07:42 15:59-16:27/28 17:20	06:27 16:27-16:38/11 18:24	06:01 20:32 21:37	04:50 22:22	04:15 22:22
19	08:44 16:11 16:12	07:39 16:32-16:42/10 17:22	06:24 17:25-17:52/27 18:26	05:58 20:35 21:39	04:48 22:23	04:15 22:23
20	08:42 16:13 16:14	07:37 16:28-16:46/18 17:25	06:21 17:25-17:52/27 18:28	05:56 20:37 21:41	04:46 22:24	04:15 22:24
21	08:41 16:15 16:16	07:34 16:25-16:48/23 17:27	06:18 17:25-17:51/26 18:31	05:53 20:39 21:43	04:44 22:25	04:15 22:25
22	08:39 16:17 16:18	07:32 16:23-16:51/28 17:30	06:16 17:24-17:50/26 18:33	05:50 20:41 21:45	04:42 22:26	04:15 22:26
23	08:38 16:19 16:20	07:29 16:21-16:52/31 17:32	06:13 17:26-17:50/24 18:35	05:48 20:43 21:47	04:40 22:27	04:15 22:27
24	08:36 16:22 16:23	07:26 16:20-16:53/33 17:34	06:10 17:26-17:49/23 18:37	05:45 20:46 21:49	04:39 22:28	04:16 22:28
25	08:34 16:24 16:25	07:24 16:19-16:55/36 17:36	06:07 17:27-17:47/20 18:40	05:43 20:48 21:51	04:37 22:29	04:16 22:29
26	08:32 16:26 16:27	07:21 16:18-16:55/37 17:39	06:04 17:28-17:45/17 18:42	05:40 20:50 21:52	04:35 22:30	04:17 22:30
27	08:31 16:28 16:29	07:19 16:17-16:56/39 17:41	06:02 17:30-17:41/11 18:44	05:38 20:52 21:54	04:34 22:31	04:17 22:31
28	08:29 16:31 16:32	07:16 16:16-16:56/40 17:43	05:59 18:46 19:48	05:35 20:55 21:56	04:32 22:32	04:18 22:32
29	08:27 16:33 16:34		06:56 19:48 20:57	05:33 20:57 21:58	04:31 22:33	04:18 22:33
30	08:25 16:35 16:36		06:53 19:51 20:59	05:30 20:59 21:59	04:29 22:34	04:19 22:34
31	08:23 16:38 16:39		06:50 19:53 20:59		04:28 22:35	
Potential sun hours	227	262	365	429	515	539
Sum of minutes with flicker	22	797	985	0	0	0

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	Last time (hh:mm) with flicker	Minutes with flicker
	Sun set (hh:mm)	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	Minutes with flicker

Project:

Flickering_Valka_Nordex175

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

16/01/2026 09:49/4.1.254

SHADOW - Calendar per WTG

Calculation: Flickering_Valka_Nordex175 WTG: 11 - NORDEX N175/6.X 6800 175.0 !-! hub: 162.0 m (TOT: 249.5 m) (39)

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.80	1.82	4.75	6.09	9.67	10.05	8.16	7.72	5.94	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	16:55-17:31/36 18:12-18:22/10	07:27 16:32
2	04:21 22:19	05:11 21:33	06:17 20:14	07:20 18:50	16:54-17:31/37 18:13-18:19/6	07:30 16:30
3	04:22 22:19	05:13 21:31	06:19 20:12	07:23 18:48	16:52-17:32/40 18:16-18:22/10	07:32 16:27
4	04:23 22:18	05:15 21:28	06:21 20:09	07:25 18:45	16:51-17:32/41 18:15-18:21/9	07:34 16:25
5	04:24 22:17	05:17 21:26	06:23 20:06	07:27 18:42	16:51-17:33/42 18:14-18:20/8	07:37 16:23
6	04:25 22:16	05:19 21:24	06:25 20:03	07:29 18:39	16:50-17:33/43 18:13-18:19/7	07:39 16:20
7	04:26 22:15	05:21 21:22	06:27 20:01	07:31 18:37	16:49-17:32/43 18:12-18:18/6	07:41 16:18
8	04:27 22:14	05:24 21:19	06:30 19:58	07:33 18:34	16:48-17:32/43 18:11-18:17/5	07:43 16:16
9	04:29 22:13	05:26 21:17	06:32 19:55	07:36 18:31	16:48-17:32/43 18:10-18:16/4	07:46 16:14
10	04:30 22:12	05:28 21:14	06:34 19:52	07:38 18:28	16:48-17:32/43 18:09-18:15/3	07:48 16:12
11	04:31 22:11	05:30 21:12	06:36 19:49	07:40 18:26	16:48-17:31/43 18:08-18:14/2	07:50 16:10
12	04:33 22:10	05:32 21:10	06:38 19:47	07:42 18:23	16:48-17:30/42 18:07-18:13/1	07:53 16:08
13	04:34 22:09	05:34 21:07	06:40 19:44	07:44 18:20	16:49-17:30/41 18:06-18:12/0	07:55 16:06
14	04:36 22:07	05:36 21:05	06:42 19:41	07:47 18:18	16:49-17:29/40 18:05-18:11/0	07:57 16:04
15	04:37 22:06	05:38 21:02	06:44 19:38	07:49 18:15	16:49-17:28/39 18:04-18:10/0	07:59 16:02
16	04:39 22:05	05:41 21:00	06:46 19:35	07:51 18:12	16:50-17:27/37 18:03-18:09/0	08:02 16:00
17	04:41 22:03	05:43 20:57	06:49 19:33	07:53 18:10	16:51-17:26/35 18:02-18:08/0	08:04 15:58
18	04:42 22:02	05:45 20:54	06:51 19:30	07:55 18:07	16:52-17:25/33 18:01-18:07/0	08:06 15:56
19	04:44 22:00	05:47 20:52	06:53 19:27	07:58 18:04	16:53-17:23/30 18:00-18:06/0	08:08 15:54
20	04:46 21:58	05:49 20:49	06:55 19:24	08:00 18:02	16:54-17:21/27 18:00-18:06/0	08:10 15:53
21	04:48 21:57	05:51 20:47	06:57 19:21	08:02 17:59	16:57-17:19/22 18:00-18:06/0	08:13 15:51
22	04:50 21:55	05:53 20:44	06:59 19:18	08:04 17:57	16:59-17:15/16 18:00-18:06/0	08:15 15:49
23	04:51 21:53	05:56 20:41	07:01 19:16	08:07 17:54	17:05-17:10/5 18:00-18:06/0	08:17 15:48
24	04:53 21:51	05:58 20:39	07:03 19:13	08:09 17:52	16:29-16:57/28 18:00-18:06/0	08:19 15:46
25	04:55 21:49	06:00 20:36	07:05 19:10	07:11 16:49	15:28-15:58/30 15:27-15:58/31	08:21 15:45
26	04:57 21:47	06:02 20:33	07:08 19:07	07:14 16:46	15:27-15:58/31 15:26-15:59/33	08:23 15:42
27	04:59 21:45	06:04 20:31	07:10 19:04	07:16 16:44	15:26-15:59/33 15:25-15:59/34	08:25 15:41
28	05:01 21:43	06:06 20:28	07:12 19:02	07:18 16:42	15:25-15:59/34 15:24-15:59/34	08:27 15:40
29	05:03 21:41	06:08 20:25	07:14 18:59	07:20 16:39	15:25-15:59/34 15:24-15:59/34	08:29 15:38
30	05:05 21:39	06:10 20:23	07:16 18:56	07:23 16:37	15:25-15:58/33 15:24-15:59/34	08:31 15:37
31	05:07 21:37	06:13 20:20		07:25 16:34	15:25-15:59/34 15:24-15:59/34	09:00 15:38
Potential sun hours	538	474	386	321	241	207
Sum of minutes with flicker	0	0	468	1170	175	329

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

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

Project:

Flickering_Valka_Nordex175

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

16/01/2026 09:49/4.1.254

SHADOW - Calendar per WTG

Calculation: Flickering_Valka_Nordex175 WTG: 12 - NORDEX N175/6.X 6800 175.0 !-! hub: 162.0 m (TOT: 249.5 m) (42)

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

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

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

	January		February		March		April		May		June	
1	09:00	14:33-14:53/20	08:21		07:13	16:58-17:16/18	06:48	18:33-18:59/26	05:28		04:27	
	15:39		16:40		17:46		19:55		21:01		22:02	
2	09:00	14:33-14:54/21	08:19		07:11	16:57-17:18/21	06:45	18:33-18:57/24	05:25		04:26	
	15:41		16:42		17:48		19:57		21:03		22:04	
3	09:00	14:34-14:56/22	08:17		07:08	16:57-17:20/23	06:42	18:34-18:55/21	05:23		04:24	
	15:42		16:45		17:50		19:59		21:06		22:05	
4	08:59	14:34-14:58/24	08:15		07:05	16:57-17:23/26	06:39	18:36-18:53/17	05:20		04:23	
	15:43		16:47		17:53		20:02		21:08		22:07	
5	08:59	14:34-14:59/25	08:12		07:03	16:57-17:24/27	06:37	18:39-18:50/11	05:18		04:22	
	15:45		16:49		17:55		20:04		21:10		22:08	
6	08:58	14:34-15:00/26	08:10		07:00	16:58-17:24/26	06:34		05:16		04:21	
	15:46		16:52		17:57		20:06		21:12		22:09	
7	08:57	14:34-15:01/27	08:08		06:57	16:58-17:23/25	06:31		05:13		04:20	
	15:48		16:54		17:59		20:08		21:14		22:11	
8	08:56	14:35-15:01/26	08:06		06:54	16:59-17:22/23	06:28		05:11		04:20	
	15:50		16:56		18:02		20:10		21:16		22:12	
9	08:56	14:35-15:02/27	08:03		06:52	17:01-17:20/19	06:25		05:09		04:19	
	15:51		16:59		18:04		20:13		21:19		22:13	
10	08:55	14:35-15:03/28	08:01		06:49	17:04-17:18/14	06:23		05:06		04:18	
	15:53		17:01		18:06		20:15		21:21		22:14	
11	08:54	14:35-15:03/28	07:59		06:46	17:07-17:16/9	06:20		05:04		04:17	
	15:55		17:04		18:08		20:17		21:23		22:15	
12	08:53	14:36-15:04/28	07:56		06:43		06:17		05:02		04:17	
	15:57		17:06		18:11		20:19		21:25		22:16	
13	08:52	14:35-15:04/29	07:54		06:41		06:15		05:00		04:16	
	15:59		17:08		18:13		20:21		21:27		22:17	
14	08:51	14:36-15:04/28	07:52		06:38		06:12		04:58		04:16	
	16:01		17:11		18:15		20:24		21:29		22:18	
15	08:49	14:36-15:04/28	07:49		06:35		06:09		04:56		04:16	
	16:02		17:13		18:17		20:26		21:31		22:18	
16	08:48	14:37-15:05/28	07:47		06:32		06:06		04:54		04:15	
	16:04		17:15		18:20		20:28		21:33		22:19	
17	08:47	14:37-15:05/28	07:44		06:30	17:45-17:53/8	06:04		04:52		04:15	
	16:07		17:18		18:22		20:30		21:35		22:20	
18	08:45	14:38-15:05/27	07:42		06:27	17:41-17:55/14	06:01		04:50		04:15	
	16:09		17:20		18:24		20:32		21:37		22:20	
19	08:44	14:38-15:05/27	07:39		06:24	17:39-17:57/18	05:58		04:48		04:15	
	16:11		17:23		18:26		20:35		21:39		22:20	
20	08:42	14:39-15:06/27	07:37		06:21	17:37-17:59/22	05:56		04:46		04:15	
	16:13		17:25		18:29		20:37		21:41		22:21	
21	08:41	14:40-15:06/26	07:34		06:18	17:35-18:01/26	05:53		04:44		04:15	
	16:15		17:27		18:31		20:39		21:43		22:21	
22	08:39	14:40-15:06/26	07:32		06:16	17:34-18:02/28	05:51		04:42		04:15	
	16:17		17:30		18:33		20:41		21:45		22:21	
23	08:38	14:41-15:06/25	07:29		06:13	17:34-18:03/29	05:48		04:40		04:15	
	16:19		17:32		18:35		20:43		21:47		22:21	
24	08:36	14:42-15:05/23	07:27		06:10	17:33-18:03/30	05:45		04:39		04:16	
	16:22		17:34		18:37		20:46		21:49		22:21	
25	08:34	14:43-15:05/22	07:24	17:02-17:06/4	06:07	17:32-18:03/31	05:43		04:37		04:16	
	16:24		17:37		18:40		20:48		21:51		22:21	
26	08:32	14:45-15:04/19	07:21	17:00-17:08/8	06:04	17:31-18:03/32	05:40		04:35		04:17	
	16:26		17:39		18:42		20:50		21:52		22:21	
27	08:31	14:46-15:02/16	07:19	16:59-17:11/12	06:02	17:31-18:02/31	05:38		04:34		04:17	
	16:28		17:41		18:44		20:52		21:54		22:21	
28	08:29	14:48-15:01/13	07:16	16:58-17:13/15	05:59	17:31-18:02/31	05:35		04:32		04:18	
	16:31		17:43		18:46		20:55		21:56		22:21	
29	08:27	14:51-14:58/7			06:56	18:31-19:01/30	05:33		04:31		04:18	
	16:33				19:48		20:57		21:58		22:21	
30	08:25				06:53	18:31-19:00/29	05:30		04:29		04:19	
	16:35				19:51		20:59		21:59		22:20	
31	08:23				06:50	18:31-18:59/28			04:28			
	16:38				19:53				22:01			
Potential sun hours	227		262		365		429		515		539	
Sum of minutes with flicker	701		39		618		99		0		0	

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	Last time (hh:mm) with flicker	Minutes with flicker
	Sun set (hh:mm)	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	Minutes with flicker

SHADOW - Calendar per WTG

Calculation: Flickering_Valka_Nordex175 WTG: 12 - NORDEX N175/6.X 6800 175.0 !-! hub: 162.0 m (TOT: 249.5 m) (42)
Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
0.80 1.82 4.75 6.09 9.67 10.05 8.16 7.72 5.94 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 18:51	07:30 16:30	08:35 15:36
3	04:22 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 16:27	08:36 15:35
4	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	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 15:33
7	04:26 22:16	05:22 21:22	06:27 20:01	07:31 18:37	07:41 16:18	08:43 15:32
8	04:27 22:15	05:24 21:19	06:30 19:58	07:33 18:34	07:44 16:16	08:44 15:31
9	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	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 16:08	08:50 15:29
13	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	04:36 22:07	05:36 21:05	06:42 19:41	07:47 18:18	07:57 16:04	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	05:41 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	06:49 19:33	07:53 18:10	08:04 15:58	08:55 15:29
18	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	04:44 22:00	05:47 20:52	06:53 19:27	07:58 18:04	08:08 15:54	08:57 15:29
20	04:46 21:58	05:49 20:49	06:55 19:24	08:00 18:02	08:10 15:53	08:58 15:30
21	04:48 21:57	05:51 20:47	06:57 19:21	08:02 17:59	08:13 15:51	08:58 15:30
22	04:50 21:55	05:53 20:44	06:59 19:19	08:04 17:57	08:15 15:49	08:59 15:30
23	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	04:53 21:51	05:58 20:39	07:03 19:13	08:09 17:52	08:19 15:46	09:00 15:32
25	04:55 21:49	06:00 20:36	07:05 19:10	08:11 16:49	08:21 15:45	09:00 15:32
26	04:57 21:47	06:02 20:33	07:08 19:07	08:14 16:47	08:23 15:43	09:00 15:33
27	04:59 21:45	06:04 20:31	07:10 19:04	08:16 16:44	08:25 15:42	09:01 15:34
28	05:01 21:43	06:06 20:28	07:12 19:02	08:18 16:42	08:27 15:41	09:01 15:35
29	05:03 21:41	06:08 20:25	07:14 18:59	08:20 16:39	08:29 15:40	09:01 15:36
30	05:05 21:39	06:11 20:23	07:16 18:56	08:23 16:37	08:31 15:38	09:01 15:37
31	05:07 21:37	06:13 20:20		08:25 16:34		09:00 15:38
Potential sun hours	538	474	386	321	241	207
Sum of minutes with flicker	0	0	491	277	428	572

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	Last time (hh:mm) with flicker	Minutes with flicker
	Sun set (hh:mm)	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	Minutes with flicker

Project:

Flickering_Valka_Nordex175

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

16/01/2026 09:49/4.1.254

SHADOW - Calendar per WTG

Calculation: Flickering_Valka_Nordex175 WTG: 13 - NORDEX N175/6.X 6800 175.0 !-! hub: 162.0 m (TOT: 249.5 m) (34)

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

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

No operational time reduction. It is assumed 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 15:34-15:56/22	07:13 17:46	06:48 19:55	05:28 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 15:41	08:19 15:34-15:56/22	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 18:51	07:30 16:30	08:35 15:36
3	09:00 15:42	08:17 15:35-15:56/21	07:08 17:50	06:42 19:59	05:23 21:06	04:24 22:05	04:22 22:19	05:13 21:31	06:19 20:12	07:23 18:48	07:32 15:12-15:19/7	08:36 15:35
4	08:59 15:44	08:15 15:36-15:55/19	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 15:09-15:22/13	08:38 15:34
5	08:59 15:45	08:12 15:37-15:55/18	07:03 17:55	06:37 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 15:07-15:23/16	08:40 15:33
6	08:58 15:46	08:10 15:38-15:53/15	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 15:07-15:24/17	08:41 15:33
7	08:57 15:48	08:08 15:40-15:52/12	06:57 17:59	06:31 20:08	05:13 21:14	04:20 22:11	04:26 22:16	05:22 21:22	06:28 20:01	07:31 18:37	07:41 15:06-15:26/20	08:43 15:32
8	08:57 15:50	08:06 15:43-15:48/5	06:54 18:02	06:28 20:10	05:11 21:16	04:20 22:12	04:27 22:15	05:24 21:19	06:30 19:58	07:33 18:34	07:44 15:05-15:26/21	08:44 15:31
9	08:56 15:51	08:03 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 15:05-15:27/22	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 22:12	05:28 21:15	06:34 19:52	07:38 18:29	07:48 15:04-15:27/23	08:47 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 22:11	05:30 21:12	06:36 19:49	07:40 18:26	07:50 15:05-15:27/22	08:49 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 21:10	06:38 19:47	07:42 18:23	07:53 15:04-15:27/23	08:50 15:30
13	08:52 15:59	07:54 17:08	06:41 18:13	06:15 20:21	05:00 21:27	04:16 22:17	04:34 22:09	05:34 21:07	06:40 18:39-18:47/8	07:44 18:20	07:55 15:05-15:27/22	08:51 15:29
14	08:51 16:01	07:52 17:11	06:38 18:15	06:12 20:24	04:58 21:29	04:16 22:18	04:36 22:07	05:36 21:05	06:42 18:36-18:49/13	07:47 18:18	07:57 15:06-15:25/19	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	04:37 22:06	05:39 21:02	06:44 18:34-18:51/17	07:49 18:15	07:59 15:06-15:23/17	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 22:05	05:41 21:00	06:46 18:32-18:51/19	07:51 18:12	08:02 15:07-15:21/14	08:54 15:29
17	08:47 16:07	07:44 17:18	06:30 18:22	06:04 20:30	04:52 21:35	04:15 22:20	04:41 22:03	05:43 20:57	06:49 18:31-18:52/21	07:53 18:10	08:04 15:07-15:18/11	08:55 15:29
18	08:45 16:09	07:42 17:20	06:27 17:48-17:55/7	06:01 20:32	04:50 21:37	04:15 22:20	04:42 22:02	05:45 20:55	06:51 18:30-18:52/22	07:56 18:07	08:06 15:08-15:17/9	08:56 15:29
19	08:44 16:11	07:39 17:23	06:24 17:46-17:57/11	05:58 20:35	04:48 21:39	04:15 22:20	04:44 22:00	05:47 20:52	06:53 18:29-18:52/23	07:58 18:04	08:08 15:09-15:14/5	08:57 15:29
20	08:42 16:13	07:37 17:25	06:21 17:45-17:59/14	05:56 20:37	04:46 21:41	04:15 22:21	04:46 21:58	05:49 20:49	06:55 18:29-18:51/22	08:00 18:02	08:11 15:11-15:12/1	08:58 15:30
21	08:41 16:15	07:34 17:27	06:18 17:44-18:01/17	05:53 20:39	04:44 21:43	04:15 22:21	04:48 21:57	05:51 20:47	06:57 18:28-18:50/22	08:02 17:59	08:13	08:58 15:30
22	08:39 15:36-15:37/1	07:32 17:30	06:16 17:43-18:03/20	05:51 20:41	04:42 21:45	04:15 22:21	04:50 21:55	05:53 20:44	06:59 18:29-18:48/19	08:05 17:57	08:15	08:59 15:30
23	08:38 15:35-15:40/5	07:29 17:32	06:13 17:43-18:06/23	05:48 20:44	04:40 21:47	04:15 22:21	04:51 21:53	05:56 20:42	07:01 18:29-18:45/16	08:07 17:54	08:17	08:59 15:31
24	08:36 15:34-15:43/9	07:27 17:34	06:10 17:43-18:05/22	05:45 20:46	04:39 21:49	04:16 22:22	04:53 21:51	05:58 20:39	07:03 18:30-18:42/12	08:09 17:52	08:19	09:00 15:32
25	08:34 15:34-15:45/11	07:24 17:37	06:07 17:42-18:04/22	05:43 20:48	04:37 21:51	04:16 22:22	04:55 21:49	06:00 20:36	07:06 18:31-18:39/8	07:11 16:49	08:21	09:00 15:32
26	08:32 15:34-15:48/14	07:21 17:39	06:04 17:42-18:03/21	05:40 20:50	04:35 21:53	04:17 22:21	04:57 21:47	06:02 20:34	07:08 18:32-18:36/4	07:14 16:47	08:23	09:00 15:33
27	08:31 15:33-15:50/17	07:19 17:41	06:02 17:43-18:02/19	05:38 20:52	04:34 21:54	04:17 22:21	04:59 21:45	06:04 20:31	07:10	07:16 16:44	08:25	09:01 15:34
28	08:29 15:33-15:52/19	07:16 16:31	05:59 17:44-18:02/18	05:35 20:55	04:32 21:56	04:18 22:21	05:01 21:43	06:06 20:28	07:12	07:18 16:42	08:27	09:01 15:35
29	08:27 15:33-15:55/22	17:43	06:56 18:45-18:59/14	05:33 20:57	04:31 21:58	04:18 22:21	05:03 21:41	06:08 20:25	07:14	07:20 16:39	08:29	09:01 15:36
30	08:25 15:34-15:56/22		06:53 18:47-18:56/9	05:30 19:51	04:30 21:59	04:19 22:20	05:05 21:39	06:11 20:23	07:16	07:23 16:37	08:31	09:01 15:37
31	08:23 15:34-15:56/22		06:50 19:53	05:28 22:01	04:28 22:01	04:19 22:20	05:07 21:37	06:13 20:20	07:16	07:25 16:34	08:31	09:00 15:38
Potential sun hours	227	262	365	429	515	539	538	474	386	321	241	207
Sum of minutes with flicker	142	134	219	0	0	0	0	0	226	0	282	0

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	Last time (hh:mm) with flicker	Minutes with flicker
	Sun set (hh:mm)	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	Minutes with flicker

Project:

Flickering_Valka_Nordex175

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

16/01/2026 09:49/4.1.254

SHADOW - Calendar per WTG

Calculation: Flickering_Valka_Nordex175 WTG: 14 - NORDEX N175/6.X 6800 175.0 !-! hub: 162.0 m (TOT: 249.5 m) (35)

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

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

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

	January	February	March	April	May	June
1	09:00 15:39	08:21 16:40	07:13 17:46	06:48 19:55	05:28 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	04:26 22:04
3	09:00 15:42	08:17 16:45	07:08 17:50	06:42 19:59	05:23 21:06	04:24 22:05
4	08:59 15:43	08:15 16:47	07:05 17:53	06:39 20:02	05:20 21:08	04:23 22:07
5	08:59 15:45	08:12 16:49	07:03 17:55	06:37 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	05:16 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	08:57 15:50	08:06 16:56	06:54 18:02	06:28 20:10	19:37-19:40/3 05:11	04:20 22:12
9	08:56 15:51	08:03 16:59	06:52 18:04	06:25 20:13	19:35-19:43/8 05:09	04:19 22:13
10	08:55 15:53	08:01 17:01	06:49 18:06	06:23 20:15	19:33-19:44/11 05:06	04:18 22:14
11	08:54 15:55	07:59 17:04	06:46 18:09	06:20 20:17	19:31-19:46/15 05:04	04:17 22:15
12	08:53 15:57	07:56 17:06	06:43 18:11	06:17 20:19	19:30-19:49/19 05:02	04:17 22:16
13	08:52 15:59	07:54 17:08	06:41 18:13	06:15 20:21	19:29-19:51/22 05:00	04:16 22:17
14	08:51 16:01	07:52 17:11	06:38 18:15	06:12 20:24	19:28-19:52/24 04:58	04:16 22:18
15	08:49 16:02	07:49 17:13	06:35 18:17	06:09 20:26	19:28-19:53/25 04:56	04:16 22:18
16	08:48 16:04	07:47 17:15	06:32 18:20	06:06 20:28	19:28-19:52/24 04:54	04:15 22:19
17	08:47 16:06	07:44 17:18	06:30 18:22	06:04 20:30	19:28-19:53/25 04:52	04:15 22:20
18	08:45 16:09	07:42 17:20	06:27 18:24	06:01 20:32	19:28-19:52/24 04:50	04:15 22:20
19	08:44 16:11	07:39 17:23	06:24 18:26	05:58 20:35	19:27-19:50/23 04:48	04:15 22:21
20	08:42 16:13	07:37 17:25	06:21 18:29	05:56 20:37	19:28-19:50/22 04:46	04:15 22:21
21	08:41 16:15	07:34 17:27	06:18 18:31	05:53 20:39	19:29-19:48/19 04:44	04:15 22:21
22	08:39 16:17	07:32 17:30	06:16 18:33	05:51 20:41	19:30-19:48/18 04:42	04:15 22:21
23	08:38 16:19	07:29 17:32	06:13 18:35	05:48 20:44	19:31-19:45/14 04:40	04:15 22:21
24	08:36 16:22	07:27 17:34	06:10 18:37	05:45 20:46	19:34-19:43/9 04:39	04:16 22:22
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
26	08:32 16:26	07:21 17:39	06:04 18:42	05:40 20:50	04:35 21:53	04:17 22:21
27	08:31 16:28	07:19 17:41	06:02 18:44	05:38 20:52	04:34 21:54	04:17 22:21
28	08:29 16:31	07:16 17:43	05:59 18:46	05:35 20:55	04:32 21:56	04:18 22:21
29	08:27 16:33		06:56 19:48	05:33 20:57	04:31 21:58	04:18 22:21
30	08:25 16:35		06:53 19:51	05:30 20:59	04:29 21:59	04:19 22:20
31	08:23 16:38		06:50 19:53		04:28 22:01	
Potential sun hours	227	262	365	429	515	539
Sum of minutes with flicker	0	413	0	305	0	0

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

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

Project:

Flickering_Valka_Nordex175

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Baiba / baiba.ozolina@environment.lv

Calculated:

16/01/2026 09:49/4.1.254

SHADOW - Calendar per WTG

Calculation: Flickering_Valka_Nordex175 WTG: 14 - NORDEX N175/6.X 6800 175.0 !-! hub: 162.0 m (TOT: 249.5 m) (35)
 Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) []

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

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

	July	August	September	October	November	December
1	04:20 22:20	05:09 21:35	06:15 20:17	19:30-19:45/15 18:53	07:18 16:32	07:27 15:35-15:56/21 15:37
2	04:21 22:19	05:11 21:33	06:17 20:14	19:31-19:42/11 18:51	07:30 16:30	15:36-15:54/18 15:36
3	04:22 22:19	05:13 21:31	06:19 20:12	19:32-19:40/8 18:48	07:32 16:27	15:37-15:51/14 15:35
4	04:23 22:18	05:15 21:29	06:21 20:09	19:35-19:38/3 18:45	07:34 16:25	15:39-15:49/10 15:34
5	04:24 22:17	05:17 21:26	06:23 20:06	07:27 18:42	07:37 16:23	15:40-15:46/6 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 15:33
7	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	04:27 22:15	05:24 21:19	06:30 19:58	07:33 18:34	07:44 16:16	08:44 15:31
9	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	04:30 22:12	05:28 21:15	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 16:08	08:50 15:29
13	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	04:36 22:08	05:36 21:05	06:42 19:41	07:47 18:18	07:57 16:04	08:52 15:29
15	04:37 22:06	05:39 21:02	06:44 19:38	07:49 18:15	07:59 16:02	08:53 15:29
16	04:39 22:05	05:41 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	06:49 19:33	07:53 16:46-16:52/6 18:10	08:04 15:58	08:55 15:29
18	04:42 22:02	05:45 20:55	06:51 19:30	07:56 16:42-16:56/14 18:07	08:06 15:56	08:56 15:29
19	04:44 22:00	05:47 19:39-19:49/10 20:52	06:53 19:27	07:58 16:39-16:58/19 18:04	08:08 15:54	08:57 15:29
20	04:46 21:58	05:49 19:36-19:51/15 20:49	06:55 19:24	08:00 16:37-16:58/21 18:02	08:11 15:53	08:58 15:30
21	04:48 21:57	05:51 19:35-19:52/17 20:47	06:57 19:21	08:02 16:37-17:00/23 17:59	08:13 15:51	08:58 15:30
22	04:50 21:55	05:53 19:33-19:53/20 20:44	06:59 19:19	08:05 16:35-17:00/25 17:57	08:15 15:49	08:59 15:30
23	04:51 21:53	05:56 19:32-19:54/22 20:42	07:01 19:16	08:07 16:35-17:01/26 17:54	08:17 15:48	08:59 15:31
24	04:53 21:51	05:58 19:31-19:54/23 20:39	07:03 19:13	08:09 16:34-17:01/27 17:52	08:19 15:46	09:00 15:32
25	04:55 21:49	06:00 19:30-19:54/24 20:36	07:06 19:10	07:11 15:34-16:02/28 16:49	08:21 15:45	09:00 15:32
26	04:57 21:47	06:02 19:30-19:54/24 20:34	07:08 19:07	07:14 15:33-16:01/28 16:47	08:23 15:43	09:00 15:33
27	04:59 21:46	06:04 19:29-19:54/25 20:31	07:10 19:04	07:16 15:34-16:02/28 16:44	08:25 15:42	09:01 15:34
28	05:01 21:44	06:06 19:29-19:54/25 20:28	07:12 19:02	07:18 15:33-16:01/28 16:42	08:27 15:41	09:01 15:35
29	05:03 21:41	06:08 19:29-19:53/24 20:25	07:14 18:59	07:20 15:34-16:01/27 16:39	08:29 15:40	09:01 15:36
30	05:05 21:39	06:11 19:29-19:50/21 20:23	07:16 18:56	07:23 15:34-16:00/26 16:37	08:31 15:38	09:01 15:37
31	05:07 21:37	06:13 19:29-19:48/19 20:20		07:25 15:35-15:59/24 16:34		09:00 15:38
Potential sun hours	538	474	386	321	241	207
Sum of minutes with flicker	0	269	37	350	69	0

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

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