

Project:

flickering_Nordex_N175_Stelpe1

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Laura Kurzemniece / laura.kurzemniece@environment.lv

Calculated:

03.04.2025 10:38/4.1.254

SHADOW - Calendar per WTG

Calculation: Flickering_Nordex_N175 WTG: 1 - NORDEX N175/6.X 6800 175.0 !-! hub: 179,0 m (TOT: 266,5 m) (18)

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0,80	1,82	4,75	6,63	9,63	10,06	8,16	7,72	5,94	2,93	0,63	0,52

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

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:57 15:53	08:21 16:50	07:17 17:53	06:54 19:59	05:38 21:02	04:41 21:59	04:35 22:16	05:21 21:34	06:23 20:20	07:23 18:59	07:29 16:41	08:31 15:50
2	08:57 15:54	08:19 16:53	07:14 17:55	06:52 20:01	05:35 21:04	04:40 22:00	04:36 22:15	05:23 21:32	06:25 20:17	07:25 18:57	07:31 16:39	08:32 15:49
3	08:57 15:56	08:17 16:55	07:12 17:57	06:49 20:03	05:33 21:06	04:39 22:02	04:37 22:15	05:25 21:30	06:27 20:15	07:27 18:54	07:33 16:37	08:34 15:48
4	08:56 15:58	08:15 16:59	07:09 18:02	06:46 20:07	05:31 21:10	04:38 22:04	04:38 22:13	05:27 21:26	06:29 20:09	07:29 18:49	07:35 16:33	08:36 15:47
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6	08:55 16:00	08:11 17:02	07:04 18:04	06:41 20:09	05:26 21:12	04:36 22:06	04:40 22:13	05:31 21:24	06:33 20:07	07:33 18:46	07:40 16:30	08:39 15:46
7	08:55 16:01	08:09 17:04	07:01 18:06	06:38 20:11	05:24 21:14	04:35 22:07	04:41 22:12	05:33 21:21	06:35 20:04	07:35 18:43	07:42 16:28	08:40 15:45
8	08:54 16:03	08:07 17:06	06:59 18:08	06:36 20:13	05:22 21:16	04:34 22:08	04:42 22:11	05:35 21:19	06:37 20:01	07:37 18:41	07:44 16:26	08:42 15:45
9	08:53 16:04	08:04 17:08	06:56 18:10	06:33 20:16	05:20 21:18	04:33 22:09	04:43 22:10	05:36 21:17	06:39 19:59	07:40 18:38	07:46 16:24	08:43 15:44
10	08:52 16:06	08:02 17:11	06:53 18:13	06:30 20:18	05:18 21:20	04:33 22:10	04:44 22:09	05:38 21:15	06:41 19:56	07:42 18:35	07:48 16:22	08:44 15:44
11	08:52 16:08	08:00 17:13	06:51 18:15	06:28 20:20	05:16 21:22	04:32 22:11	04:46 22:08	05:40 21:12	06:43 19:53	07:44 18:33	07:50 16:20	08:46 15:43
12	08:51 16:10	07:58 17:15	06:48 18:17	06:25 20:22	05:14 21:24	04:32 22:12	04:47 22:07	05:42 21:10	06:45 19:51	07:46 18:30	07:53 16:18	08:47 15:43
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Potential sun hours	235	266	366	426	508	529	530	470	385	323	247	216
Sum of minutes with flicker	0	0	0	0	0	0	0	0	0	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
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Assumptions for shadow calculations

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Potential sun hours	235	266	366	426	508	529	530	470	385	323	247	215
Sum of minutes with flicker	0	0	0	0	0	0	0	0	0	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

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flickering_Nordex_N175_Stelpe1

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Assumptions for shadow calculations

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Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
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Sum of minutes with flicker	0	146	690	2297	1837	1797

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

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0037167242411

Laura Kurzemniece / laura.kurzemniece@environment.lv

Calculated:

03.04.2025 10:38/4.1.254

SHADOW - Calendar per WTG

Calculation: Flickering_Nordex_N175 WTG: 3 - NORDEX N175/6.X 6800 175.0 !-! hub: 179,0 m (TOT: 266,5 m) (20)
 Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) []

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
 0,80 1,82 4,75 6,63 9,63 10,06 8,16 7,72 5,94 2,93 0,63 0,52

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

	July	August	September	October	November	December
1	04:35 21:13-21:35/22 22:15 05:37-06:16/39	05:21 20:32-20:56/24 05:58-06:19/21 21:34 19:46-19:52/6	06:23 18:59-19:45/46 20:20 07:00-07:24/24	07:23 08:01-08:26/25 18:59	07:29 08:01-08:26/25 16:41	08:30 15:50
2	04:36 21:13-21:34/21 22:15 05:36-06:16/40	05:23 20:32-20:54/22 05:59-06:18/19 21:32 19:42-19:55/13	06:25 19:00-19:44/44 20:17 06:59-07:22/23	07:25 08:01-08:25/24 18:57	07:31 08:01-08:25/24 16:39	08:32 15:49
3	04:37 21:13-21:34/21 22:14 05:37-06:16/39	05:25 20:33-20:54/21 05:59-06:17/18 21:30 19:39-19:57/18	06:27 19:01-19:43/42 20:15 07:00-07:21/21	07:27 08:01-08:24/23 18:54	07:33 08:01-08:24/23 16:37	08:34 15:48
4	04:38 21:14-21:34/20 22:14 05:37-06:16/39	05:27 20:33-20:54/21 06:00-06:16/16 21:28 19:38-19:59/21	06:29 19:02-19:41/39 20:12 07:01-07:19/18	07:29 08:01-08:23/22 18:51	07:35 08:01-08:23/22 16:35	08:36 15:47
5	04:39 21:14-21:33/19 22:13 05:38-06:17/39	05:29 20:34-20:52/18 06:02-06:14/12 21:26 19:37-20:01/24	06:31 19:04-19:39/35 20:09 07:03-07:17/14	07:31 08:02-08:22/20 18:49	07:37 08:02-08:22/20 16:33	08:37 15:47
6	04:40 21:15-21:33/18 22:12 05:38-06:17/39	05:31 20:05-20:11/6 06:49-06:52/3 06:05-06:11/6 21:23 20:34-20:49/15 19:35-20:02/27	06:33 19:07-19:36/29 20:07 07:06-07:13/7	07:33 08:03-08:20/17 18:46	07:40 08:03-08:20/17 16:30	08:39 15:46
7	04:41 21:15-21:32/17 22:12 05:38-06:17/39	05:33 19:33-20:14/41 06:45-06:56/11 21:21 20:36-20:47/11	06:35 19:12-19:18/6 20:04 19:19-19:34/15	07:35 08:05-08:17/12 18:43	07:42 08:05-08:17/12 16:28	08:40 15:45
8	04:42 21:16-21:31/15 22:11 05:38-06:17/39	05:34 19:33-20:16/43 20:38-20:45/7 21:19 19:18-19:29/11 06:42-06:57/15	06:37 19:19-19:31/12 20:01	07:37 08:09-08:13/4 18:41	07:44 08:09-08:13/4 16:26	08:42 15:45
9	04:43 21:16-21:30/14 22:10 05:38-06:17/39	05:36 19:14-20:17/63 21:17 06:41-06:59/18	06:39 19:21-19:29/8 19:59	07:39 17:31-17:43/12 18:38	07:46 17:31-17:43/12 16:24	08:43 15:44
10	04:44 21:17-21:29/12 22:09 05:38-06:17/39	05:38 19:12-20:18/66 21:15 06:40-07:00/20	06:41 19:23-19:26/3 19:56	07:42 17:30-17:46/16 18:35	07:48 17:30-17:46/16 16:22	08:44 15:44
11	04:46 21:17-21:28/11 22:08 05:39-06:18/39	05:40 19:10-20:19/69 21:12 06:39-07:01/22	06:43 19:53 19:53	07:44 17:28-17:46/18 18:33	07:50 17:28-17:46/18 16:20	08:46 15:43
12	04:47 21:19-21:28/9 22:07 05:39-06:18/39	05:42 19:09-20:20/71 21:10 06:38-07:02/24	06:45 19:51 19:51	07:46 17:27-17:47/20 18:30	07:53 17:27-17:47/20 16:18	08:47 15:43
13	04:48 21:20-21:27/7 22:05 05:39-06:18/39	05:44 19:06-20:19/73 21:08 06:38-07:02/24	06:47 19:48 19:48	07:48 17:26-17:47/21 18:28	07:55 17:26-17:47/21 16:16	08:48 15:43
14	04:50 21:21-21:25/4 05:38-06:17/39 22:04 20:41-20:44/3	05:46 19:05-20:20/75 21:05 06:36-07:02/26	06:49 18:33-18:44/11 19:45	07:50 17:25-17:47/22 18:25	07:57 17:25-17:47/22 16:15	08:49 15:43
15	04:51 20:39-20:47/8 22:03 05:39-06:18/39	05:48 19:04-20:20/76 21:03 06:36-07:02/26	06:51 18:30-18:46/16 19:42	07:52 17:24-17:47/23 18:22	07:59 17:24-17:47/23 16:13	08:50 15:43
16	04:53 20:37-20:49/12 22:02 05:39-06:18/39	05:50 19:03-20:20/77 21:00 06:36-07:02/26	06:53 18:28-18:47/19 19:40	07:54 17:25-17:47/22 18:20	08:01 17:25-17:47/22 16:11	08:51 15:43
17	04:54 20:36-20:50/14 22:00 05:40-06:19/39	05:53 19:02-20:20/78 20:58 06:36-07:02/26	06:55 18:27-18:48/21 19:37	07:56 17:25-17:45/20 18:17	08:03 17:25-17:45/20 16:09	08:52 15:43
18	04:56 20:36-20:51/15 21:59 05:39-06:19/40	05:55 19:02-20:19/77 20:56 06:36-07:02/26	06:57 18:26-18:49/23 19:34	07:58 17:25-17:42/17 18:15	08:05 17:25-17:42/17 16:08	08:53 15:43
19	04:57 20:34-20:52/18 21:57 05:40-06:19/39	05:57 19:01-20:19/78 06:36-07:01/25 20:53 07:10-07:20/10	06:59 18:25-18:49/24 19:32	08:00 17:25-17:39/14 18:12	08:07 17:25-17:39/14 16:06	08:54 15:43
20	04:59 20:34-20:53/19 21:56 05:40-06:20/40	05:59 19:00-20:18/78 06:36-07:01/25 20:51 07:07-07:23/16	07:01 18:24-18:49/25 19:29	08:03 17:27-17:38/11 18:10	08:09 17:27-17:38/11 16:04	08:54 15:44
21	05:01 20:33-20:53/20 21:54 05:41-06:20/39	06:01 18:59-20:16/77 06:37-07:00/23 20:48 07:05-07:24/19	07:03 18:24-18:49/25 19:26	08:05 17:28-17:35/7 18:07	08:11 17:28-17:35/7 16:03	08:55 15:44
22	05:03 20:33-20:54/21 21:53 05:41-06:20/39	06:03 18:59-20:14/75 06:37-06:59/22 20:46 07:04-07:25/21	07:05 18:23-18:48/25 19:23	08:07 17:30-17:32/2 18:05	08:13 17:30-17:32/2 16:01	08:55 15:44
23	05:04 20:32-20:54/22 21:51 05:42-06:21/39	06:05 18:58-20:12/74 06:37-06:57/20 20:43 07:02-07:25/23	07:07 08:10-08:21/11 19:21 18:23-18:48/25	08:09 18:02 18:02	08:15 18:02 16:00	08:56 15:45
24	05:06 20:32-20:55/23 21:49 05:42-06:20/38	06:07 18:58-20:09/71 06:39-06:55/16 20:41 07:01-07:26/25	07:09 08:07-08:23/16 19:18 18:23-18:47/24	08:11 18:00 18:00	08:17 18:00 15:58	08:56 15:46
25	05:08 20:32-20:56/24 21:47 05:43-06:21/38	06:09 18:58-20:07/69 06:41-06:53/12 20:38 07:00-07:26/26	07:11 08:05-08:24/19 19:15 18:23-18:45/22	07:13 16:58 16:58	08:19 16:58 15:57	08:57 15:46
26	05:10 20:31-20:55/24 21:46 05:45-06:21/36	06:11 18:58-20:04/66 06:46-06:47/1 20:35 07:00-07:26/26	07:13 08:04-08:25/21 19:13 18:24-18:42/18	07:16 16:55 16:55	08:21 16:55 15:56	08:57 15:47
27	05:11 20:32-20:56/24 21:44 05:46-06:21/35	06:13 18:58-20:02/64 20:33 06:59-07:27/28	07:15 08:03-08:26/23 19:10 18:25-18:39/14	07:18 16:53 16:53	08:23 16:53 15:54	08:57 15:48
28	05:13 20:32-20:56/24 21:42 05:48-06:21/33	06:15 18:58-20:00/62 20:30 06:59-07:26/27	07:17 08:02-08:26/24 19:07 18:27-18:36/9	07:20 16:50 16:50	08:25 16:50 15:53	08:57 15:49
29	05:15 20:31-20:55/24 05:56-06:21/25 21:40 05:51-05:53/2	06:17 18:58-19:49/51 19:51-19:57/6 20:28 06:59-07:26/27	07:19 08:02-08:27/25 19:05 18:30-18:34/4	07:22 16:48 16:48	08:27 16:48 15:52	08:57 15:50
30	05:17 20:31-20:56/25 21:38 05:56-06:20/24	06:19 18:59-19:47/48 20:25 06:59-07:26/27	07:21 08:01-08:26/25 19:02	07:24 16:46 16:46	08:29 16:46 15:51	08:57 15:51
31	05:19 20:32-20:56/24 21:36 05:57-06:19/22	06:21 18:58-19:46/48 20:22 06:59-07:25/26	16:44 16:44	07:26 16:44 16:44	08:57 16:44 15:52	08:57 15:52
Potential sun hours	530	470	385	323	247	216
Sum of minutes with flicker	1707	2745	855	378	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_Nordex_N175_Stelpe1

Licensed user:

SIA Estonian, Latvian & Lithuanian environment
 Vilandes 3-6
 LV-1010 Riga
 0037167242411
 Laura Kurzemniece / laura.kurzemniece@environment.lv
 Calculated:
 03.04.2025 10:38/4.1.254

SHADOW - Calendar per WTG

Calculation: Flickering_Nordex_N175 WTG: 4 - NORDEX N175/6.X 6800 175.0 !-! hub: 179,0 m (TOT: 266,5 m) (19)
 Sunshine probability S (Average daily sunshine hours) []

Assumptions for shadow calculations

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
 0,80 1,82 4,75 6,63 9,63 10,06 8,16 7,72 5,94 2,93 0,63 0,52

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

	January	February	March	April	May	June
1	08:57 15:53	08:21 16:50	07:17 17:53	06:54 18:49-19:00/11 19:59	05:38 19:44-20:00/16 21:02	04:41 20:33-21:19/46 21:59 05:29-05:52/23
2	08:57 15:54	08:19 16:53	07:14 17:55	06:52 20:01	05:35 19:45-19:57/12 21:04	04:40 20:33-21:20/47 22:00 05:29-05:51/22
3	08:57 15:56	08:17 16:55	07:11 17:57	06:49 07:16-07:20/4 20:03	05:33 19:49-19:53/4 21:06	04:39 20:33-21:20/47 22:02 05:31-05:52/21
4	08:56 15:57	08:15 16:57	07:09 18:00	06:46 07:12-07:25/13 20:05	05:31 21:08	04:38 20:35-21:21/46 22:03 05:31-05:52/21
5	08:56 15:58	08:13 16:59	07:06 18:02	06:44 07:10-07:26/16 20:07	05:29 21:10	04:37 20:35-21:21/46 22:04 05:31-05:52/21
6	08:55 16:00	08:11 17:02	07:04 18:04	06:41 07:08-07:27/19 20:09	05:26 05:55-06:05/10 21:12	04:36 20:36-21:21/45 22:06 05:31-05:51/20
7	08:55 16:01	08:09 17:04	07:01 18:06	06:38 07:07-07:28/21 20:11	05:24 05:53-06:07/14 21:14	04:35 20:36-21:21/45 22:07 05:32-05:52/20
8	08:54 16:03	08:07 17:06	06:58 18:08	06:36 07:05-07:28/23 20:13	05:22 05:51-06:08/17 21:16	04:34 20:37-21:23/46 22:08 05:32-05:52/20
9	08:53 16:04	08:04 17:08	06:56 17:34-17:41/7 18:10	06:33 07:05-07:29/24 20:16	05:20 20:39-20:44/5 21:18 05:50-06:09/19	04:33 20:38-21:24/46 22:09 05:33-05:52/19
10	08:52 16:06	08:02 17:11	06:53 17:32-17:44/12 18:13	06:30 07:04-07:29/25 20:18	05:18 20:36-20:46/10 21:20 05:49-06:10/21	04:33 20:39-21:26/47 22:10 05:33-05:51/18
11	08:51 16:08	08:00 17:13	06:51 17:30-17:46/16 18:15	06:28 07:03-07:28/25 20:20	05:16 20:34-20:47/13 21:22 05:48-06:10/22	04:32 20:39-21:26/47 22:11 05:34-05:52/18
12	08:51 16:10	07:58 17:15	06:48 17:28-17:48/20 18:17	06:25 07:04-07:28/24 20:22	05:14 20:33-20:49/16 21:24 05:49-06:11/22	04:32 20:40-21:27/47 22:12 05:33-05:51/18
13	08:50 16:11	07:55 17:17	06:45 17:28-17:51/23 18:19	06:23 07:03-07:27/24 20:24	05:12 20:33-20:52/19 21:26 05:48-06:12/24	04:31 20:41-20:51/10 05:34-05:51/17 22:12 20:52-21:28/36
14	08:49 16:13	07:53 17:20	06:43 17:26-17:53/27 18:21	06:20 07:04-07:27/23 20:26 19:51-19:57/6	05:10 20:32-20:53/21 21:28 05:48-06:12/24	04:31 20:42-20:51/9 05:35-05:52/17 22:13 20:52-21:29/37
15	08:47 16:15	07:51 17:22	06:40 17:26-17:54/28 18:23	06:17 07:04-07:25/21 20:28 19:47-19:58/11	05:08 20:31-20:54/23 05:38-05:41/3 21:30 05:47-06:11/24	04:31 20:42-20:50/8 05:35-05:52/17 22:14 20:52-21:29/37
16	08:46 16:17	07:49 17:24	06:37 17:25-17:53/28 18:25	06:15 07:05-07:25/20 20:30 19:45-20:00/15	05:06 20:30-20:54/24 05:37-05:45/8 21:32 05:48-06:12/24	04:30 20:43-20:49/6 05:35-05:51/16 22:14 20:52-21:30/38
17	08:45 16:19	07:46 17:26	06:35 17:25-17:53/28 18:27 17:57-17:59/2	06:12 07:05-07:23/18 20:32 19:43-20:02/19	05:04 20:30-20:55/25 05:35-05:46/11 21:34 05:47-06:12/25	04:30 20:44-20:49/5 05:35-05:51/16 22:15 20:52-21:30/38
18	08:44 16:21	07:44 17:29	06:32 17:25-18:01/36 18:29	06:10 07:07-07:21/14 20:34 19:42-20:04/22	05:02 20:30-21:00/30 21:36 05:33-06:11/38	04:30 20:45-20:48/3 05:36-05:51/15 22:15 20:53-21:30/37
19	08:42 16:23	07:41 17:31	06:29 17:25-18:03/38 18:32	06:07 07:09-07:17/8 20:36 19:41-20:05/24	05:00 20:30-21:02/32 21:37 05:32-06:12/40	04:30 20:53-21:31/38 22:16 05:36-05:51/15
20	08:41 16:25	07:39 17:33	06:27 17:26-18:06/40 18:34	06:05 19:41-20:06/25 20:39	04:58 20:29-21:03/34 21:39 05:30-06:11/41	04:30 20:53-21:31/38 22:16 05:37-05:52/15
21	08:40 16:27	07:37 17:35	06:24 17:27-18:08/41 18:36	06:02 19:39-20:05/26 20:41	04:57 20:29-21:05/36 21:41 05:30-06:11/41	04:30 20:54-21:32/38 22:17 05:37-05:52/15
22	08:38 16:29	07:34 17:38	06:21 17:28-17:45/17 18:38 17:46-18:09/23	06:00 19:39-20:06/27 20:43	04:55 20:29-21:06/37 21:43 05:29-06:11/42	04:30 20:54-21:32/38 22:17 05:37-05:52/15
23	08:37 16:31	07:32 17:40	06:18 17:30-17:42/12 18:40 17:46-18:10/24	05:57 19:39-20:06/27 20:45	04:53 20:30-21:08/38 21:45 05:29-06:11/42	04:31 20:54-21:32/38 22:17 05:37-05:52/15
24	08:35 16:33	07:29 17:42	06:16 17:45-18:10/25 18:42	05:55 19:39-20:05/26 20:47	04:52 20:29-21:09/40 21:46 05:28-06:10/42	04:31 20:47-20:49/2 05:38-05:53/15 22:17 20:54-21:32/38
25	08:33 16:35	07:27 17:44	06:13 17:44-18:09/25 18:44	05:52 19:39-20:05/26 20:49	04:50 20:30-21:11/41 21:48 05:28-06:09/41	04:31 20:47-20:51/4 05:37-05:53/16 22:17 20:54-21:32/38
26	08:32 16:37	07:24 17:46	06:10 17:44-18:09/25 18:46	05:50 19:40-20:05/25 20:51	04:49 20:30-21:13/43 21:50 05:29-06:09/40	04:32 20:46-20:51/5 05:38-05:54/16 22:17 20:54-21:32/38
27	08:30 16:39	07:22 17:49	06:08 17:45-18:09/24 18:48	05:47 19:39-20:03/24 20:53	04:47 20:30-21:13/43 21:51 05:29-06:09/40	04:32 20:46-20:52/6 05:38-05:54/16 22:17 20:55-21:32/37
28	08:28 16:42	07:19 17:51	06:05 17:45-18:08/23 18:50	05:45 19:40-20:03/23 20:55	04:46 20:30-21:15/45 21:53 05:29-06:07/38	04:33 20:45-20:53/8 05:38-05:55/17 22:17 20:54-21:32/38
29	08:26 16:44		07:02 18:45-19:06/21 19:53	05:42 19:41-20:02/21 20:57	04:44 20:31-21:16/45 05:28-05:51/23 21:55 05:54-06:06/12	04:33 20:45-20:54/9 05:37-05:55/18 22:16 20:55-21:32/37
30	08:25 16:46		07:00 18:46-19:05/19 19:55	05:40 19:42-20:01/19 20:59	04:43 20:32-21:18/46 05:29-05:51/22 21:56 05:55-06:05/10	04:34 20:45-21:32/47 22:16 05:38-05:55/17
31	08:23 16:48		06:57 18:47-19:03/16 19:57		04:42 20:32-21:19/47 05:29-05:52/23 21:58 05:57-06:04/7	
Potential sun hours	235	266	366	426	508	529
Sum of minutes with flicker	0	0	600	699	1555	1845

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_Nordex_N175_Stelpe1

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Laura Kurzemniece / laura.kurzemniece@environment.lv

Calculated:

03.04.2025 10:38/4.1.254

SHADOW - Calendar per WTG

Calculation: Flickering_Nordex_N175 WTG: 4 - NORDEX N175/6.X 6800 175.0 !-! hub: 179,0 m (TOT: 266,5 m) (19)

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0,80	1,82	4,75	6,63	9,63	10,06	8,16	7,72	5,94	2,93	0,63	0,52

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

	July	August	September	October	November	December
1	04:35 20:44-21:31/47 22:15 05:38-05:56/18	05:21 20:45-21:00/15 21:34 05:59-06:22/23	06:23 07:03-07:28/25 20:20	07:23 18:07-18:28/21 18:59	07:29 16:41	08:31 15:50
2	04:36 20:43-21:31/48 22:15 05:37-05:56/19	05:23 20:45-20:57/12 21:32 06:00-06:21/21	06:25 07:02-07:27/25 20:17	07:25 18:08-18:26/18 18:57	07:31 16:39	08:32 15:49
3	04:37 20:43-21:30/47 22:14 05:37-05:56/19	05:25 20:47-20:55/8 21:30 06:00-06:20/20	06:27 07:02-07:26/24 20:15	07:27 18:09-18:23/14 18:54	07:33 16:37	08:34 15:48
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5	04:38 20:43-21:28/45 22:13 05:37-05:57/20	05:29 06:02-06:18/16 21:26	06:31 07:03-07:24/21 20:09	07:31 18:15-18:18/3 18:49	07:37 16:33	08:37 15:47
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31	05:19 20:43-21:01/18 21:36 05:58-06:22/24	06:21 07:04-07:28/24 20:22		07:26 16:44		08:57 15:52
Potential sun hours	530	470	385	323	247	216
Sum of minutes with flicker	2143	710	732	66	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_Nordex_N175_Stelpe1

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Laura Kurzemniece / laura.kurzemniece@environment.lv

Calculated:

03.04.2025 10:38/4.1.254

SHADOW - Calendar per WTG

Calculation: Flickering_Nordex_N175 WTG: 5 - NORDEX N175/6.X 6800 175.0 !-! hub: 179,0 m (TOT: 266,5 m) (17)

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
0,80 1,82 4,75 6,63 9,63 10,06 8,16 7,72 5,94 2,93 0,63 0,52

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

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

Project:

flickering_Nordex_N175_Stelpe1

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Laura Kurzemniece / laura.kurzemniece@environment.lv

Calculated:

03.04.2025 10:38/4.1.254

SHADOW - Calendar per WTG

Calculation: Flickering_Nordex_N175 WTG: 6 - NORDEX N175/6.X 6800 175.0 !-! hub: 179,0 m (TOT: 266,5 m) (14)
Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
0,80 1,82 4,75 6,63 9,63 10,06 8,16 7,72 5,94 2,93 0,63 0,52

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

	January	February	March	April	May	June
1	08:57 15:53	08:21 16:51	07:17 17:53	06:54 19:59	07:42-08:04/22 21:02	05:38 19:51-20:14/23 21:59
2	08:57 15:54	08:19 16:53	07:14 17:55	06:52 20:01	07:39-08:06/27 21:04	05:35 19:51-20:12/21 22:00
3	08:57 15:56	08:17 16:55	07:12 17:57	06:49 20:03	07:36-08:08/32 21:06	05:33 19:52-20:11/19 22:02
4	08:56 15:57	08:15 16:57	07:09 18:00	06:46 20:05	07:35-08:09/34 21:08	05:31 19:53-20:09/16 22:03
5	08:56 15:58	08:13 16:59	07:06 18:02	06:44 20:07	07:33-08:10/37 21:10	05:29 19:55-20:06/11 22:04
6	08:55 16:00	08:11 17:02	07:04 18:04	06:41 20:09	07:31-08:11/40 21:12	05:26 20:00-20:01/1 22:06
7	08:55 16:01	08:09 17:04	07:01 18:06	06:38 20:11	07:31-08:12/41 21:14	05:24 21:14 22:07
8	08:54 16:03	08:07 17:06	06:59 18:08	06:36 20:13	07:29-08:12/43 21:16	05:22 21:16 22:08
9	08:53 16:05	08:04 17:08	06:56 18:10	06:33 20:16	07:29-08:13/44 21:18	05:20 21:18 22:09
10	08:52 16:06	08:02 17:11	06:53 18:13	06:30 20:18	07:27-08:13/46 21:20	05:18 21:20 22:10
11	08:52 16:08	08:00 17:13	06:51 18:15	06:28 20:20	07:26-08:12/46 21:22	05:16 21:22 22:11
12	08:51 16:10	07:58 17:15	06:48 18:17	06:25 20:22	07:26-08:13/47 21:24	05:14 21:24 22:12
13	08:50 16:11	07:56 17:18	06:45 18:19	06:23 20:24	07:25-08:12/47 21:26	05:12 21:26 22:12
14	08:49 16:13	07:53 17:20	06:43 18:21	06:20 20:26	07:25-08:13/48 21:28	05:10 21:28 22:13
15	08:47 16:15	07:51 17:22	06:40 18:23	06:17 20:28	07:25-08:12/47 21:30	05:08 21:30 22:14
16	08:46 16:17	07:49 17:24	06:37 18:25	06:15 20:30	07:25-08:12/47 21:32	05:06 21:32 22:14
17	08:45 16:19	07:46 17:27	06:35 18:27	06:12 20:32	07:24-08:11/47 21:34	05:04 21:34 22:15
18	08:44 16:21	07:44 17:29	06:32 18:30	06:10 20:34	20:02-20:04/2 07:25-08:11/46 21:36	05:02 21:36 22:16
19	08:42 16:23	07:41 17:31	06:29 18:32	06:07 20:36	19:57-20:06/9 07:24-08:10/46 21:37	05:00 21:37 22:16
20	08:41 16:25	07:39 17:33	06:27 18:34	06:05 20:39	19:55-20:08/13 07:25-08:09/44 21:39	04:58 21:39 22:16
21	08:40 16:27	07:37 17:35	06:24 18:36	06:02 20:41	19:53-20:09/16 07:25-08:09/44 21:41	04:57 21:41 22:17
22	08:38 16:29	07:34 17:38	06:21 18:38	06:00 20:43	19:52-20:12/20 07:25-08:08/43 21:43	04:55 21:43 22:17
23	08:37 16:31	07:32 17:40	06:19 18:40	05:57 20:45	19:52-20:14/22 07:26-08:07/41 21:45	04:53 21:45 22:17
24	08:35 16:33	07:29 17:42	06:16 18:42	05:55 20:47	19:50-20:15/25 07:26-08:05/39 21:46	04:52 21:46 22:17
25	08:33 16:35	07:27 17:44	06:13 18:44	05:52 20:49	19:50-20:16/26 07:27-08:04/37 21:48	04:50 21:48 22:17
26	08:32 16:37	07:24 17:47	06:10 18:46	05:50 20:51	19:50-20:16/26 07:28-08:03/35 21:50	04:49 21:50 22:17
27	08:30 16:40	07:22 17:49	06:08 18:48	05:47 20:53	19:49-20:15/26 07:29-08:02/33 21:51	04:47 21:51 22:17
28	08:28 16:42	07:19 17:51	06:05 18:50	05:45 20:55	19:50-20:15/25 07:30-07:59/29 21:53	04:46 21:53 22:17
29	08:27 16:44		07:02 19:53	05:43 20:57	19:50-20:15/25 07:32-07:58/26 21:55	04:45 21:55 22:16
30	08:25 16:46		07:00 19:55	05:40 20:59	19:50-20:14/24 07:34-07:55/21 21:56	04:43 21:56 22:16
31	08:23 16:48		06:57 19:57	07:46-08:00/14		04:42
Potential sun hours	235	266	366	426	508	529
Sum of minutes with flicker	0	0	14	1438	111	24

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_Nordex_N175_Stelpe1

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Laura Kurzemniece / laura.kurzemniece@environment.lv

Calculated:

03.04.2025 10:38/4.1.254

SHADOW - Calendar per WTG

Calculation: Flickering_Nordex_N175 WTG: 6 - NORDEX N175/6.X 6800 175.0 I-! hub: 179,0 m (TOT: 266,5 m) (14

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0,80	1,82	4,75	6,63	9,63	10,06	8,16	7,72	5,94	2,93	0,63	0,52

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

	July	August	September	October	November	December
1	04:35 22:16	05:21 21:34	06:23 07:26-08:12/46 20:20	07:23 18:59	07:29 16:41	08:31 15:50
2	04:36 22:15	05:23 21:32	06:25 07:25-08:11/46 20:17	07:25 18:57	07:31 16:39	08:32 15:49
3	04:37 22:15	05:25 21:30	06:27 07:26-08:10/44 20:15	07:27 18:54	07:33 16:37	08:34 15:48
4	04:38 22:14	05:27 21:28	06:29 07:26-08:09/43 20:12	07:29 18:51	07:35 16:35	08:36 15:47
5	04:39 22:13	05:29 21:26	06:31 07:27-08:08/41 20:09	07:31 18:49	07:37 16:33	08:37 15:47
6	04:40 22:12	05:31 21:24	06:33 07:27-08:07/40 20:07	07:33 18:46	07:40 16:30	08:39 15:46
7	04:41 22:12	05:33 20:07-20:13/6 21:21	06:35 07:28-08:05/37 20:04	07:35 18:43	07:42 16:28	08:40 15:45
8	04:42 22:11	05:35 20:04-20:17/13 21:19	06:37 07:29-08:04/35 20:01	07:37 18:41	07:44 16:26	08:42 15:45
9	04:43 22:10	05:36 20:02-20:19/17 21:17	06:39 07:30-08:02/32 19:59	07:39 18:38	07:46 16:24	08:43 15:44
10	04:44 22:09	05:38 20:01-20:20/19 21:15	06:41 07:32-08:00/28 19:56	07:42 18:35	07:48 16:22	08:44 15:44
11	04:46 22:08	05:40 20:00-20:21/21 21:12	06:43 07:34-07:57/23 19:53	07:44 18:33	07:50 16:20	08:46 15:43
12	04:47 22:07	05:42 19:59-20:22/23 21:10	06:45 07:37-07:53/16 19:51	07:46 18:30	07:53 16:18	08:47 15:43
13	04:48 22:06	05:44 19:58-20:22/24 21:08	06:47 19:48	07:48 18:28	07:55 16:16	08:48 15:43
14	04:50 22:04	05:47 19:57-20:22/25 21:05	06:49 19:45	07:50 18:25	07:57 16:15	08:49 15:43
15	04:51 22:03	05:49 19:57-20:22/25 21:03	06:51 19:42	07:52 18:22	07:59 16:13	08:50 15:43
16	04:53 22:02	05:51 19:57-20:23/26 21:00	06:53 19:40	07:54 18:20	08:01 16:11	08:51 15:43
17	04:54 22:00	05:53 19:57-20:22/25 20:58	06:55 19:37	07:56 18:17	08:03 16:09	08:52 15:43
18	04:56 21:59	05:55 19:57-20:22/25 20:56	06:57 19:34	07:58 18:15	08:05 16:08	08:53 15:43
19	04:58 21:57	05:57 19:57-20:22/25 20:53	06:59 19:32	08:01 18:12	08:07 16:06	08:54 15:43
20	04:59 21:56	05:59 19:58-20:19/21 20:51	07:01 19:29	08:03 18:10	08:09 16:04	08:54 15:44
21	05:01 21:54	06:01 19:57-20:16/19 20:48	07:03 19:26	08:05 18:07	08:12 16:03	08:55 15:44
22	05:03 21:53	06:03 19:58-20:14/16 20:46	07:05 19:24	08:07 18:05	08:14 16:01	08:56 15:44
23	05:04 21:51	06:05 19:59-20:12/13 20:43	07:07 19:21	08:09 18:02	08:16 16:00	08:56 15:45
24	05:06 21:49	06:07 20:01-20:09/8 20:41	07:09 19:18	08:11 18:00	08:18 15:58	08:56 15:46
25	05:08 21:47	06:09 07:27-08:14/47 20:38	07:11 19:15	07:13 16:58	08:19 15:57	08:57 15:46
26	05:10 21:46	06:11 07:27-08:14/47 20:36	07:13 19:13	07:16 16:55	08:21 15:56	08:57 15:47
27	05:11 21:44	06:13 07:27-08:14/47 20:33	07:15 19:10	07:18 16:53	08:23 15:55	08:57 15:48
28	05:13 21:42	06:15 07:26-08:14/48 20:30	07:17 19:07	07:20 16:51	08:25 15:53	08:57 15:49
29	05:15 21:40	06:17 07:26-08:14/48 20:28	07:19 19:05	07:22 16:48	08:27 15:52	08:57 15:50
30	05:17 21:38	06:19 07:26-08:13/47 20:25	07:21 19:02	07:24 16:46	08:29 15:51	08:57 15:51
31	05:19 21:36	06:21 07:26-08:13/47 20:23		07:26 16:44		08:57 15:52
Potential sun hours	530	470	385	323	247	216
Sum of minutes with flicker	0	1155	431	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_Nordex_N175_Stelpe1

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Laura Kurzemniece / laura.kurzemniece@environment.lv

Calculated:

03.04.2025 10:38/4.1.254

SHADOW - Calendar per WTG

Calculation: Flickering_Nordex_N175 WTG: 7 - NORDEX N175/6.X 6800 175.0 !-! hub: 179,0 m (TOT: 266,5 m) (15)

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0,80	1,82	4,75	6,63	9,63	10,06	8,16	7,72	5,94	2,93	0,63	0,52

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

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:57 15:53	08:21 16:51	07:17 17:53	06:54 19:59	05:38 21:02	04:41 21:59	04:35 22:16	05:21 21:34	06:23 20:20	07:23 18:59	07:29 16:41	08:31 15:50
2	08:57 15:54	08:19 16:53	07:14 17:55	06:52 20:01	05:35 21:04	04:40 22:01	04:36 22:15	05:23 21:32	06:25 20:17	07:25 18:57	07:31 16:39	08:32 15:49
3	08:57 15:56	08:17 16:55	07:12 17:57	06:49 20:03	05:33 21:06	04:39 22:02	04:37 22:15	05:25 21:30	06:27 20:15	07:27 18:54	07:33 16:37	08:34 15:48
4	08:56 15:58	08:15 16:59	07:09 18:02	06:46 20:07	05:31 21:10	04:38 22:04	04:38 22:13	05:27 21:26	06:29 20:09	07:29 18:49	07:35 16:33	08:36 15:47
5	08:56 15:58	08:13 16:59	07:06 18:02	06:44 20:07	05:29 21:10	04:37 22:04	04:39 22:13	05:29 21:26	06:31 20:09	07:31 18:49	07:37 16:33	08:37 15:47
6	08:55 16:00	08:11 17:02	07:04 18:04	06:41 20:09	05:26 21:12	04:36 22:06	04:40 22:13	05:31 21:24	06:33 20:07	07:33 18:46	07:40 16:30	08:39 15:46
7	08:55 16:01	08:09 17:04	07:01 18:06	06:38 20:11	05:24 21:14	04:35 22:07	04:41 22:12	05:33 21:21	06:35 20:04	07:35 18:43	07:42 16:28	08:40 15:45
8	08:54 16:03	08:07 17:06	06:59 18:08	06:36 20:14	05:22 21:16	04:34 22:08	04:42 22:11	05:35 21:19	06:37 20:01	07:37 18:41	07:44 16:26	08:42 15:45
9	08:53 16:04	08:05 17:08	06:56 18:10	06:33 20:16	05:20 21:18	04:33 22:09	04:43 22:10	05:37 21:17	06:39 19:59	07:40 18:38	07:46 16:24	08:43 15:44
10	08:52 16:06	08:02 17:11	06:53 18:13	06:30 20:18	05:18 21:20	04:33 22:10	04:44 22:09	05:38 21:15	06:41 19:56	07:42 18:35	07:48 16:22	08:44 15:44
11	08:52 16:08	08:00 17:13	06:51 18:15	06:28 20:20	05:16 21:22	04:32 22:11	04:46 22:08	05:40 21:12	06:43 19:53	07:44 18:33	07:51 16:20	08:46 15:43
12	08:51 16:10	07:58 17:15	06:48 18:17	06:25 20:22	05:14 21:24	04:32 22:12	04:47 22:07	05:43 21:10	06:45 19:51	07:46 18:30	07:53 16:18	08:47 15:43
13	08:50 16:11	07:56 17:18	06:45 18:19	06:23 20:24	05:12 21:26	04:31 22:13	04:48 22:06	05:45 21:08	06:47 19:48	07:48 18:28	07:55 16:16	08:48 15:43
14	08:49 16:13	07:53 17:20	06:43 18:21	06:20 20:26	05:10 21:28	04:31 22:13	04:50 22:04	05:47 21:05	06:49 19:45	07:50 18:25	07:57 16:15	08:49 15:43
15	08:48 16:15	07:51 17:22	06:40 18:23	06:17 20:28	05:08 21:30	04:31 22:14	04:51 22:03	05:49 21:03	06:51 19:43	07:52 18:23	07:59 16:13	08:50 15:43
16	08:46 16:17	07:49 17:24	06:37 18:25	06:15 20:30	05:06 21:32	04:30 22:15	04:53 22:02	05:51 21:01	06:53 19:40	07:54 18:20	08:01 16:11	08:51 15:43
17	08:45 16:19	07:46 17:27	06:35 18:27	06:12 20:32	05:04 21:34	04:30 22:15	04:54 22:00	05:53 20:58	06:55 19:37	07:56 18:17	08:03 16:09	08:52 15:43
18	08:44 16:21	07:44 17:29	06:32 18:30	06:10 20:34	05:02 21:36	04:30 22:16	04:56 21:59	05:55 20:56	06:57 19:34	07:58 18:15	08:05 16:08	08:53 15:43
19	08:43 16:23	07:42 17:31	06:29 18:32	06:07 20:37	05:00 21:38	04:30 22:16	04:57 21:57	05:57 20:53	06:59 19:32	08:01 18:12	08:08 16:06	08:54 15:43
20	08:41 16:25	07:39 17:33	06:27 18:34	06:05 20:39	04:58 21:39	04:30 22:16	04:59 21:56	05:59 20:51	07:01 19:29	08:03 18:10	08:10 16:04	08:54 15:44
21	08:40 16:27	07:37 17:35	06:24 18:36	06:02 20:41	04:57 21:41	04:30 22:17	05:01 21:54	06:01 20:48	07:03 19:26	08:05 18:07	08:12 16:03	08:55 15:44
22	08:38 16:29	07:34 17:38	06:21 18:38	06:00 20:43	04:55 21:43	04:30 22:17	05:03 21:53	06:03 20:46	07:05 19:24	08:07 18:05	08:14 16:01	08:56 15:44
23	08:37 16:31	07:32 17:40	06:19 18:40	05:57 20:45	04:53 21:45	04:31 22:17	05:04 21:51	06:05 20:43	07:07 19:21	08:09 18:02	08:16 16:00	08:56 15:45
24	08:35 16:33	07:29 17:42	06:16 18:42	05:55 20:47	04:52 21:46	04:31 22:17	05:06 21:49	06:07 20:41	07:09 19:18	08:11 18:00	08:18 15:58	08:57 15:46
25	08:34 16:35	07:27 17:44	06:13 18:44	05:52 20:49	04:50 21:48	04:31 22:17	05:08 21:48	06:09 20:38	07:11 19:15	08:13 16:58	08:20 15:57	08:57 15:46
26	08:32 16:37	07:24 17:47	06:10 18:46	05:50 20:51	04:49 21:50	04:32 22:17	05:10 21:46	06:11 20:36	07:13 19:13	08:15 16:55	08:22 15:56	08:57 15:47
27	08:30 16:40	07:22 17:49	06:08 18:48	05:47 20:53	04:47 21:51	04:32 22:17	05:11 21:44	06:13 20:33	07:15 19:10	08:17 16:53	08:23 15:55	08:57 15:48
28	08:28 16:42	07:19 17:51	06:05 18:51	05:45 20:55	04:46 21:53	04:33 22:17	05:13 21:42	06:15 20:30	07:17 19:07	08:19 16:51	08:25 15:53	08:57 15:49
29	08:27 16:44	07:17 19:53	06:02 19:53	05:43 20:57	04:45 21:55	04:33 22:16	05:15 21:40	06:17 20:28	07:19 19:05	08:21 16:48	08:27 15:52	08:58 15:50
30	08:25 16:46	07:15 19:55	07:00 19:55	05:40 21:00	04:43 21:56	04:34 22:16	05:17 21:38	06:19 20:25	07:21 19:02	08:23 16:46	08:29 15:51	08:58 15:51
31	08:23 16:48	07:13 19:57	06:57 19:57	05:37 21:58	04:42 21:58	04:32 21:36	05:19 21:36	06:21 20:23	07:23 16:44	08:25 15:52	08:31 15:52	08:57 15:52
Potential sun hours	235	266	366	426	508	529	530	470	385	323	247	215
Sum of minutes with flicker	0	0	0	0	0	0	0	0	0	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_Nordex_N175_Stelpe1

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Laura Kurzemniece / laura.kurzemniece@environment.lv

Calculated:

03.04.2025 10:38/4.1.254

SHADOW - Calendar per WTG

Calculation: Flickering_Nordex_N175 WTG: 8 - NORDEX N175/6.X 6800 175.0 !-! hub: 179,0 m (TOT: 266,5 m) (21)
Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0,80	1,82	4,75	6,63	9,63	10,06	8,16	7,72	5,94	2,93	0,63	0,52

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

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:57 11:50-12:37/47 15:53	08:21 12:17-12:31/14 16:50	07:17 06:54 17:53	06:54 19:59 21:02	05:38 21:02 21:59	04:41 22:16 21:34	04:35 22:16 21:34	05:21 20:20 18:59	06:23 18:59 16:41	07:23 16:41 15:50	07:29 15:50 15:49	08:31 11:37-12:24/48 08:32 11:37-12:25/48
2	08:57 11:51-12:38/47 15:54	08:19 16:53 17:55	07:14 06:52 17:55	06:52 20:01 21:04	05:35 21:04 22:01	04:40 22:15 21:32	04:36 22:15 21:32	05:23 20:17 18:57	06:25 16:39 15:49	07:25 15:49 15:48	07:31 15:48 15:47	08:32 11:37-12:25/48 08:36 11:37-12:25/48
3	08:57 11:51-12:39/48 15:56	08:17 16:55 17:57	07:12 06:49 17:57	06:49 20:03 21:06	05:33 21:06 22:02	04:38 22:15 21:30	04:36 22:15 21:30	05:25 20:15 18:54	06:27 16:37 15:48	07:27 15:48 15:47	07:33 15:47 15:46	08:34 11:36-12:24/48 08:36 11:37-12:25/48
4	08:56 11:51-12:39/48 15:57	08:15 16:57 18:00	07:09 06:46 18:00	06:46 20:05 21:08	05:31 21:08 22:03	04:37 22:14 21:28	04:37 22:14 21:28	05:27 20:12 18:51	06:29 16:35 15:48	07:29 15:48 15:47	07:35 15:47 15:46	08:36 11:37-12:25/48 08:37 11:38-12:26/48
5	08:56 11:52-12:40/48 15:58	08:13 16:59 18:02	07:06 06:44 18:02	06:44 20:07 21:10	05:29 21:10 22:05	04:36 22:13 21:26	04:38 22:13 21:26	05:28 20:09 18:49	06:31 16:32 15:47	07:31 15:47 15:46	07:38 15:46 15:45	08:37 11:38-12:26/48 08:39 11:38-12:26/48
6	08:55 11:52-12:40/48 16:00	08:11 17:02 18:04	07:04 06:41 18:04	06:41 20:09 21:12	05:26 21:12 22:06	04:36 22:13 21:24	04:39 22:13 21:24	05:30 20:07 18:46	06:33 16:30 15:46	07:33 15:46 15:45	07:40 15:45 15:44	08:39 11:38-12:26/48 08:40 11:38-12:26/48
7	08:55 11:52-12:40/48 16:01	08:09 17:04 18:06	07:01 06:38 18:06	06:38 20:11 21:14	05:24 21:14 22:07	04:35 22:12 21:22	04:41 22:12 21:22	05:32 20:04 18:43	06:35 16:28 15:45	07:35 15:45 15:44	07:42 15:44 15:43	08:40 11:38-12:26/48 08:42 11:39-12:27/48
8	08:54 11:53-12:41/48 16:03	08:07 17:06 18:08	06:59 06:36 18:08	06:36 20:14 21:16	05:22 21:16 22:08	04:34 22:11 21:19	04:42 22:11 21:19	05:34 20:01 18:41	06:37 16:26 15:45	07:37 15:45 15:44	07:44 15:44 15:43	08:42 11:39-12:27/48 08:43 11:39-12:27/48
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10	08:53 11:54-12:42/48 16:06	08:02 17:11 18:13	06:53 06:30 18:13	06:30 20:18 21:20	05:18 21:20 22:10	04:33 22:09 21:15	04:44 22:09 21:15	05:38 20:30 18:30	06:41 16:22 15:44	07:42 15:44 15:43	07:48 15:43 15:42	08:45 11:40-12:28/48 08:47 11:41-12:29/48
11	08:52 11:54-12:42/48 16:08	08:00 17:13 18:15	06:51 06:28 18:15	06:28 20:16 21:22	05:16 21:22 22:11	04:32 22:08 21:12	04:45 22:08 21:12	05:40 20:33 18:33	06:43 16:20 15:43	07:44 15:43 15:42	07:51 15:42 15:41	08:46 11:40-12:28/48 08:47 11:41-12:29/48
12	08:51 11:54-12:42/48 16:09	07:58 17:15 18:17	06:48 06:25 18:17	06:25 20:12 21:24	05:14 21:24 22:12	04:32 22:07 21:10	04:47 22:07 21:10	05:42 20:30 18:30	06:45 16:18 15:43	07:46 15:43 15:42	07:53 15:42 15:41	08:47 11:41-12:29/48 08:48 11:41-12:29/48
13	08:50 11:55-12:42/47 16:11	07:56 17:17 18:19	06:45 06:23 18:19	06:23 20:12 21:26	05:12 21:26 22:13	04:31 22:06 21:08	04:48 22:06 21:08	05:44 20:48 18:28	06:47 16:16 15:43	07:48 15:43 15:42	07:55 15:42 15:41	08:48 11:41-12:29/48 08:49 11:42-12:29/47
14	08:49 11:56-12:43/47 16:13	07:53 17:20 18:21	06:43 06:20 18:21	06:20 20:12 21:28	05:10 21:28 22:13	04:31 22:05 21:05	04:50 22:05 21:05	05:46 20:45 18:25	06:49 16:15 15:43	07:50 15:43 15:42	07:57 15:42 15:41	08:49 11:42-12:29/47 08:50 11:42-12:29/47
15	08:48 11:56-12:43/47 16:15	07:51 17:22 18:23	06:40 06:17 18:23	06:17 20:10 21:30	05:08 21:30 22:14	04:30 22:03 21:03	04:51 22:03 21:03	05:48 20:43 18:22	06:51 16:13 15:43	07:52 15:43 15:42	07:59 15:42 15:41	08:50 11:42-12:29/47 08:51 11:43-12:30/47
16	08:46 11:57-12:43/46 16:17	07:49 17:24 18:25	06:37 06:15 18:25	06:15 20:10 21:32	05:06 21:32 22:15	04:30 22:02 21:01	04:53 22:02 21:01	05:50 20:40 18:20	06:53 16:11 15:43	07:54 15:43 15:42	08:01 15:42 15:41	08:51 11:43-12:30/47 08:52 11:43-12:30/47
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18	08:44 11:58-12:44/46 16:21	07:44 17:29 18:30	06:32 06:10 18:30	06:10 20:10 21:36	05:02 21:36 22:16	04:30 22:01 21:01	04:56 22:01 21:01	05:54 20:34 18:15	06:57 16:07 15:43	07:58 15:43 15:42	08:06 15:42 15:41	08:53 11:44-12:31/47 08:54 11:45-12:32/47
19	08:43 11:58-12:43/45 16:23	07:42 17:31 18:32	06:29 06:07 18:32	06:07 20:10 21:38	05:00 21:38 22:16	04:30 22:01 21:01	04:57 22:01 21:01	05:57 20:32 18:12	06:59 16:06 15:43	08:01 15:43 15:42	08:08 15:42 15:41	08:54 11:45-12:32/47 08:55 11:46-12:33/47
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22	08:38 12:01-12:43/42 16:29	07:34 17:38 18:38	06:21 06:00 18:38	06:00 20:10 21:43	04:55 21:43 22:17	04:30 22:01 21:01	05:02 22:01 21:01	06:03 20:46 18:05	07:05 16:01 15:43	08:07 15:43 15:42	08:14 15:42 15:41	08:56 11:48-12:35/47 08:57 11:49-12:36/48
23	08:37 12:01-12:42/41 16:31	07:32 17:40 18:40	06:19 05:57 18:40	05:57 20:10 21:45	04:53 21:45 22:17	04:30 22:01 21:01	05:04 22:01 21:01	06:05 20:43 18:02	07:07 16:00 15:43	08:09 15:43 15:42	08:16 15:42 15:41	08:56 11:49-12:36/48 08:57 11:50-12:37/48
24	08:35 12:02-12:42/40 16:33	07:29 17:42 18:42	06:16 05:55 18:42	05:55 20:10 21:47	04:52 21:47 22:17	04:31 22:01 21:01	05:06 22:01 21:01	06:07 20:41 18:00	07:09 16:00 15:43	08:11 15:43 15:42	08:18 15:42 15:41	08:57 11:49-12:36/48 08:58 11:50-12:37/48
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26	08:32 12:04-12:41/37 16:37	07:24 17:46 18:46	06:10 05:50 18:46	05:50 20:10 21:50	04:49 21:50 22:17	04:32 22:01 21:01	05:09 22:01 21:01	06:11 20:36 18:00	07:13 16:00 15:43	08:15 15:43 15:42	08:22 15:42 15:41	08:57 11:49-12:36/48 08:58 11:50-12:37/48
27	08:30 12:05-12:40/35 16:39	07:22 17:49 18:48	06:08 05:47 18:48	05:47 20:10 21:52	04:47 21:52 22:17	04:32 22:01 21:01	05:11 22:01 21:01	06:13 20:33 18:00	07:15 16:00 15:43	08:17 15:43 15:42	08:24 15:42 15:41	08:57 11:49-12:36/48 08:58 11:50-12:37/48
28	08:28 12:07-12:39/32 16:42	07:19 17:51 18:51	06:05 05:45 18:51	05:45 20:10 21:53	04:46 21:53 22:17	04:33 22:01 21:01	05:13 22:01 21:01	06:15 20:30 18:00	07:17 16:00 15:43	08:19 15:43 15:42	08:26 15:42 15:41	08:58 11:49-12:36/48 08:59 11:50-12:37/48
29	08:27 12:09-12:38/29 16:44	07:17 17:53 19:02	06:03 05:42 19:02	05:42 20:10 21:55	04:44 21:55 22:17	04:33 22:01 21:01	05:15 22:01 21:01	06:17 20:28 18:00	07:19 16:00 15:43	08:21 15:43 15:42	08:28 15:42 15:41	08:58 11:49-12:36/48 08:59 11:50-12:37/48
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31	08:23 12:13-12:34/21 16:48	07:13 17:57 19:07	06:01 05:39 19:07	05:39 20:10 21:58	04:42 21:58 22:16	04:34 22:01 21:01	05:19 22:01 21:01	06:21 20:23 18:00	07:23 16:00 15:43	08:25 15:43 15:42	08:32 15:42 15:41	08:58 11:49-12:36/48 08:59 11:50-12:37/48
Potential sun hours	235	266	366	426	508	530	530	470	385	323	247	215
Sum of minutes with flicker	1325	14	0	0	0	0	0	0	0	0	817	1473

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_Nordex_N175_Stelpe1

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Laura Kurzemniece / laura.kurzemniece@environment.lv

Calculated:

03.04.2025 10:38/4.1.254

SHADOW - Calendar per WTG

Calculation: Flickering_Nordex_N175 WTG: 9 - NORDEX N175/6.X 6800 175.0 !-! hub: 179,0 m (TOT: 266,5 m) (22)

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
0,80 1,82 4,75 6,63 9,63 10,06 8,16 7,72 5,94 2,93 0,63 0,52

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

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:57 09:49-10:12/23 15:53	08:21 10:09-10:13/4 16:50	07:17 17:53	06:54 19:59	05:38 21:02	04:41 21:59	04:35 22:16	05:21 21:34	06:23 20:20	07:23 18:59	07:29 16:41	08:31 09:33-10:02/29 15:50
2	08:57 09:50-10:13/23 15:54	08:19 16:53	07:14 17:55	06:52 20:01	05:35 21:04	04:39 22:01	04:36 22:15	05:23 21:32	06:25 20:17	07:25 18:57	07:31 16:39	08:32 09:34-10:02/28 15:49
3	08:57 09:49-10:14/25 15:55	08:17 16:55	07:12 17:57	06:49 20:03	05:33 21:06	04:38 22:02	04:36 22:15	05:25 21:30	06:27 20:15	07:27 18:54	07:33 16:37	08:34 09:33-10:01/28 15:48
4	08:56 09:49-10:14/25 15:57	08:15 16:57	07:09 18:00	06:46 20:05	05:31 21:08	04:37 22:03	04:37 22:14	05:26 21:28	06:29 20:12	07:29 18:51	07:35 16:35	08:36 09:34-10:02/28 15:47
5	08:56 09:50-10:16/26 15:58	08:13 16:59	07:06 18:02	06:44 20:07	05:29 21:10	04:36 22:05	04:38 22:13	05:28 21:26	06:31 20:09	07:31 18:49	07:37 16:32	08:37 09:35-10:02/27 15:46
6	08:55 09:50-10:16/26 16:00	08:11 17:02	07:04 18:04	06:41 20:09	05:26 21:12	04:36 22:06	04:39 22:13	05:30 21:24	06:33 20:07	07:33 18:46	07:40 16:30	08:39 09:36-10:02/26 15:45
7	08:55 09:50-10:17/27 16:01	08:09 17:04	07:01 18:06	06:38 20:11	05:24 21:14	04:35 22:07	04:40 22:12	05:32 21:21	06:35 20:04	07:35 18:43	07:42 16:28	08:40 09:36-10:02/26 15:45
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10	08:53 09:50-10:19/29 16:06	08:02 17:11	06:53 18:13	06:30 20:18	05:18 21:20	04:33 22:10	04:44 22:09	05:38 21:15	06:41 19:56	07:42 18:35	07:48 09:39-09:44/5 16:22	08:44 09:39-10:03/24 15:44
11	08:52 09:51-10:20/29 16:08	08:00 17:13	06:51 18:15	06:28 20:20	05:16 21:22	04:32 22:11	04:45 22:08	05:40 21:12	06:43 19:53	07:44 18:33	07:51 09:35-09:48/13 16:20	08:46 09:39-10:02/23 15:43
12	08:51 09:50-10:20/30 16:09	07:58 17:15	06:48 18:17	06:25 20:22	05:14 21:24	04:31 22:12	04:47 22:07	05:42 21:10	06:45 19:51	07:46 18:30	07:53 09:34-09:51/17 16:18	08:47 09:41-10:03/22 15:43
13	08:50 09:51-10:21/30 16:11	07:56 17:17	06:45 18:19	06:22 20:24	05:11 21:26	04:31 22:13	04:48 22:06	05:44 21:08	06:47 19:48	07:48 18:28	07:55 09:32-09:52/20 16:16	08:48 09:41-10:03/22 15:43
14	08:49 09:51-10:21/30 16:13	07:53 17:20	06:43 18:21	06:20 20:26	05:09 21:28	04:31 22:13	04:50 22:04	05:46 21:05	06:49 19:45	07:50 18:25	07:57 09:31-09:54/23 16:14	08:49 09:42-10:03/21 15:43
15	08:48 09:51-10:21/30 16:15	07:51 17:22	06:40 18:23	06:17 20:28	05:08 21:30	04:30 22:14	04:51 22:03	05:48 21:03	06:51 19:42	07:52 18:22	07:59 09:30-09:55/25 16:13	08:50 09:42-10:03/21 15:43
16	08:46 09:52-10:22/30 16:17	07:49 17:24	06:37 18:25	06:15 20:30	05:06 21:32	04:30 22:15	04:53 22:02	05:50 21:01	06:53 19:40	07:54 18:20	08:01 09:29-09:55/26 16:11	08:51 09:43-10:03/20 15:43
17	08:45 09:51-10:22/31 16:19	07:46 17:26	06:35 18:27	06:12 20:32	05:04 21:34	04:30 22:15	04:54 22:00	05:52 20:58	06:55 19:37	07:56 18:17	08:03 09:30-09:57/27 16:09	08:52 09:44-10:04/20 15:43
18	08:44 09:52-10:23/31 16:21	07:44 17:29	06:32 18:30	06:10 20:34	05:02 21:36	04:30 22:16	04:56 21:59	05:54 20:56	06:57 19:34	07:58 18:15	08:05 09:29-09:57/28 16:07	08:53 09:45-10:04/19 15:43
19	08:43 09:52-10:23/31 16:23	07:42 17:31	06:29 18:32	06:07 20:37	05:00 21:38	04:30 22:16	04:57 21:58	05:56 20:53	06:59 19:32	08:01 18:12	08:08 09:29-09:58/29 16:06	08:54 09:45-10:05/20 15:43
20	08:41 09:53-10:23/30 16:25	07:39 17:33	06:27 18:34	06:05 20:39	04:58 21:39	04:30 22:16	04:59 21:56	05:58 20:51	07:01 19:29	08:03 18:10	08:10 09:29-09:59/30 16:04	08:54 09:45-10:04/19 15:43
21	08:40 09:54-10:24/30 16:27	07:37 17:35	06:24 18:36	06:02 20:41	04:57 21:41	04:30 22:17	05:01 21:54	06:01 20:48	07:03 19:26	08:05 18:07	08:12 09:29-09:59/30 16:03	08:55 09:46-10:05/19 15:44
22	08:38 09:54-10:24/30 16:29	07:34 17:38	06:21 18:38	05:59 20:43	04:55 21:43	04:30 22:17	05:02 21:53	06:03 20:46	07:05 19:24	08:07 18:05	08:14 09:29-09:59/30 16:01	08:56 09:46-10:05/19 15:44
23	08:37 09:54-10:23/29 16:31	07:32 17:40	06:18 18:40	05:57 20:45	04:53 21:45	04:30 22:17	05:04 21:51	06:05 20:43	07:07 19:21	08:09 18:02	08:16 09:29-10:00/31 16:00	08:56 09:47-10:06/19 15:45
24	08:35 09:55-10:23/28 16:33	07:29 17:42	06:16 18:42	05:55 20:47	04:52 21:47	04:31 22:17	05:06 21:49	06:07 20:41	07:09 19:18	08:11 18:00	08:18 09:29-10:00/31 15:58	08:57 09:47-10:07/20 15:45
25	08:34 09:56-10:23/27 16:35	07:27 17:44	06:13 18:44	05:52 20:49	04:50 21:48	04:31 22:17	05:08 21:48	06:09 20:38	07:11 19:15	07:13 16:58	08:20 09:30-10:00/30 15:57	08:57 09:47-10:07/20 15:46
26	08:32 09:56-10:22/26 16:37	07:24 17:46	06:10 18:46	05:50 20:51	04:49 21:50	04:31 22:17	05:09 21:46	06:11 20:36	07:13 19:13	07:16 16:55	08:22 09:30-10:00/30 15:56	08:57 09:48-10:07/19 15:47
27	08:30 09:57-10:22/25 16:39	07:22 17:49	06:08 18:48	05:47 20:53	04:47 21:52	04:32 22:17	05:11 21:44	06:13 20:33	07:15 19:10	07:18 16:53	08:23 09:30-10:00/30 15:54	08:57 09:48-10:08/20 15:48
28	08:28 09:59-10:21/22 16:42	07:19 17:51	06:05 18:50	05:45 20:55	04:46 21:53	04:33 22:17	05:13 21:42	06:15 20:30	07:17 19:07	07:20 16:50	08:25 09:31-10:02/31 15:53	08:58 09:48-10:09/21 15:48
29	08:27 10:00-10:20/20 16:44		07:02 19:53	05:42 20:57	04:44 21:55	04:33 22:16	05:15 21:40	06:17 20:28	07:19 19:05	07:22 16:48	08:27 09:32-10:02/30 15:52	08:58 09:48-10:10/22 15:49
30	08:25 10:02-10:19/17 16:46		07:00 19:55	05:40 21:00	04:43 21:56	04:34 22:16	05:17 21:38	06:19 20:25	07:21 19:02	07:24 16:46	08:29 09:32-10:02/30 15:51	08:58 09:49-10:11/22 15:50
31	08:23 10:04-10:17/13 16:48		06:57 19:57		04:42 21:58		05:19 21:36	06:21 20:23		07:27 16:44		08:57 09:49-10:12/23 15:51
Potential sun hours	235	266	366	426	508	530	530	470	385	323	247	215
Sum of minutes with flicker	829	4	0	0	0	0	0	0	0	0	546	697

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_Nordex_N175_Stelpe1

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Laura Kurzemniece / laura.kurzemniece@environment.lv

Calculated:

03.04.2025 10:38/4.1.254

SHADOW - Calendar per WTG

Calculation: Flickering_Nordex_N175 WTG: 10 - NORDEX N175/6.X 6800 175.0 !-! hub: 179,0 m (TOT: 266,5 m) (23)

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0,80	1,82	4,75	6,63	9,63	10,06	8,16	7,72	5,94	2,93	0,63	0,52

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

	January		February		March		April	May	June
1	08:57	10:48-11:00/12	08:21		07:17	08:55-09:33/38	06:54	05:38	04:41
	15:53		16:50		17:53		19:59	21:02	21:59
2	08:57	10:49-11:01/12	08:19		07:14	08:56-09:31/35	06:52	05:35	04:39
	15:54		16:53		17:55		20:01	21:04	22:01
3	08:57	10:50-11:00/10	08:17		07:12	08:57-09:30/33	06:49	05:33	04:38
	15:55		16:55		17:57		20:03	21:06	22:02
4	08:56	10:52-10:58/6	08:15		07:09	08:59-09:28/29	06:46	05:31	04:37
	15:57		16:57		18:00		20:05	21:08	22:03
5	08:56		08:13	09:08-09:23/15	07:06	09:00-09:25/25	06:44	05:29	04:36
	15:58		16:59		18:02		20:07	21:10	22:05
6	08:55		08:11	09:06-09:26/20	07:04	09:03-09:23/20	06:41	05:26	04:36
	16:00		17:02		18:04		20:09	21:12	22:06
7	08:55		08:09	09:03-09:28/25	07:01	09:07-09:18/11	06:38	05:24	04:35
	16:01		17:04		18:06		20:11	21:14	22:07
8	08:54		08:07	09:01-09:30/29	06:59		06:36	05:22	04:34
	16:03		17:06		18:08		20:14	21:16	22:08
9	08:53		08:05	09:00-09:32/32	06:56		06:33	05:20	04:33
	16:04		17:08		18:10		20:16	21:18	22:09
10	08:53		08:02	08:58-09:33/35	06:53		06:30	05:18	04:33
	16:06		17:11		18:13		20:18	21:20	22:10
11	08:52		08:00	08:58-09:34/36	06:51		06:28	05:16	04:32
	16:08		17:13		18:15		20:20	21:22	22:11
12	08:51		07:58	08:57-09:36/39	06:48		06:25	05:13	04:31
	16:09		17:15		18:17		20:22	21:24	22:12
13	08:50		07:56	08:56-09:36/40	06:45		06:22	05:11	04:31
	16:11		17:17		18:19		20:24	21:26	22:13
14	08:49		07:53	08:56-09:37/41	06:43		06:20	05:09	04:31
	16:13		17:20		18:21		20:26	21:28	22:13
15	08:48		07:51	08:55-09:37/42	06:40		06:17	05:08	04:30
	16:15		17:22		18:23		20:28	21:30	22:14
16	08:46		07:49	08:54-09:38/44	06:37		06:15	05:06	04:30
	16:17		17:24		18:25		20:30	21:32	22:15
17	08:45		07:46	08:54-09:38/44	06:35		06:12	05:04	04:30
	16:19		17:26		18:27		20:32	21:34	22:15
18	08:44		07:44	08:54-09:39/45	06:32		06:10	05:02	04:30
	16:21		17:29		18:30		20:34	21:36	22:16
19	08:43		07:42	08:53-09:38/45	06:29		06:07	05:00	04:30
	16:23		17:31		18:32		20:37	21:38	22:16
20	08:41		07:39	08:53-09:39/46	06:27		06:05	04:58	04:30
	16:25		17:33		18:34		20:39	21:39	22:16
21	08:40		07:37	08:53-09:39/46	06:24		06:02	04:57	04:30
	16:27		17:35		18:36		20:41	21:41	22:17
22	08:38		07:34	08:52-09:38/46	06:21		05:59	04:55	04:30
	16:29		17:38		18:38		20:43	21:43	22:17
23	08:37		07:32	08:53-09:38/45	06:18		05:57	04:53	04:30
	16:31		17:40		18:40		20:45	21:45	22:17
24	08:35		07:29	08:53-09:37/44	06:16		05:55	04:52	04:31
	16:33		17:42		18:42		20:47	21:47	22:17
25	08:34		07:27	08:54-09:37/43	06:13		05:52	04:50	04:31
	16:35		17:44		18:44		20:49	21:48	22:17
26	08:32		07:24	08:53-09:36/43	06:10		05:50	04:49	04:31
	16:37		17:46		18:46		20:51	21:50	22:17
27	08:30		07:22	08:54-09:35/41	06:08		05:47	04:47	04:32
	16:39		17:49		18:48		20:53	21:52	22:17
28	08:28		07:19	08:55-09:35/40	06:05		05:45	04:46	04:33
	16:42		17:51		18:51		20:55	21:53	22:17
29	08:27				07:02		05:42	04:44	04:33
	16:44				19:53		20:58	21:55	22:17
30	08:25				07:00		05:40	04:43	04:34
	16:46				19:55		21:00	21:56	22:16
31	08:23				06:57			04:42	
	16:48				19:57			21:58	
Potential sun hours	235		266		366		426	508	530
Sum of minutes with flicker	40		926		191		0	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

SHADOW - Calendar per WTG

Calculation: Flickering_Nordex_N175 WTG: 10 - NORDEX N175/6.X 6800 175.0 !-! hub: 179,0 m (TOT: 266,5 m) (23)
 Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
 0,80 1,82 4,75 6,63 9,63 10,06 8,16 7,72 5,94 2,93 0,63 0,52

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

	July	August	September	October	November	December
1	04:35 22:16	05:21 21:34	06:23 20:20	07:23 18:59	07:29 08:28-09:02/34 16:41	08:31 15:50
2	04:35 22:15	05:23 21:32	06:25 20:17	07:25 18:57	07:31 08:30-09:01/31 16:39	08:32 15:49
3	04:36 22:15	05:25 21:30	06:27 20:15	07:27 18:54	07:33 08:31-08:59/28 16:37	08:34 15:48
4	04:37 22:14	05:26 21:28	06:29 20:12	07:29 18:51	07:35 08:33-08:57/24 16:35	08:36 15:47
5	04:38 22:13	05:28 21:26	06:31 20:09	07:31 18:49	07:37 08:36-08:55/19 16:32	08:37 15:46
6	04:39 22:13	05:30 21:24	06:33 20:07	07:33 18:46	07:40 08:39-08:52/13 16:30	08:39 15:46
7	04:40 22:12	05:32 21:21	06:35 20:04	07:35 09:40-09:56/16 18:43	07:42 16:28	08:40 15:45
8	04:42 22:11	05:34 21:19	06:37 20:01	07:37 09:36-09:59/23 18:41	07:44 16:26	08:42 10:40-10:46/6 15:45
9	04:43 22:10	05:36 21:17	06:39 19:59	07:40 09:35-10:02/27 18:38	07:46 16:24	08:43 10:40-10:49/9 15:44
10	04:44 22:09	05:38 21:15	06:41 19:56	07:42 09:33-10:04/31 18:35	07:48 16:22	08:45 10:39-10:50/11 15:44
11	04:45 22:08	05:40 21:12	06:43 19:53	07:44 09:31-10:05/34 18:33	07:51 16:20	08:46 10:38-10:51/13 15:43
12	04:47 22:07	05:42 21:10	06:45 19:51	07:46 09:29-10:06/37 18:30	07:53 16:18	08:47 10:38-10:52/14 15:43
13	04:48 22:06	05:44 21:08	06:47 19:48	07:48 09:28-10:07/39 18:28	07:55 16:16	08:48 10:38-10:53/15 15:43
14	04:50 22:04	05:46 21:05	06:49 19:45	07:50 09:27-10:08/41 18:25	07:57 16:14	08:49 10:38-10:54/16 15:43
15	04:51 22:03	05:48 21:03	06:51 19:42	07:52 09:26-10:08/42 18:22	07:59 16:13	08:50 10:38-10:54/16 15:43
16	04:53 22:02	05:50 21:01	06:53 19:40	07:54 09:25-10:09/44 18:20	08:01 16:11	08:51 10:38-10:55/17 15:43
17	04:54 22:00	05:52 20:58	06:55 19:37	07:56 09:24-10:09/45 18:17	08:03 16:09	08:52 10:39-10:56/17 15:43
18	04:56 21:59	05:54 20:56	06:57 19:34	07:58 09:24-10:09/45 18:15	08:05 16:07	08:53 10:39-10:57/18 15:43
19	04:57 21:58	05:56 20:53	06:59 19:32	08:01 09:24-10:09/45 18:12	08:08 16:06	08:54 10:40-10:57/17 15:43
20	04:59 21:56	05:58 20:51	07:01 19:29	08:03 09:23-10:09/46 18:10	08:10 16:04	08:55 10:39-10:57/18 15:43
21	05:01 21:54	06:01 20:48	07:03 19:26	08:05 09:23-10:09/46 18:07	08:12 16:03	08:55 10:40-10:58/18 15:44
22	05:02 21:53	06:03 20:46	07:05 19:24	08:07 09:24-10:09/45 18:05	08:14 16:01	08:56 10:40-10:58/18 15:44
23	05:04 21:51	06:05 20:43	07:07 19:21	08:09 09:23-10:09/46 18:02	08:16 16:00	08:56 10:41-10:59/18 15:45
24	05:06 21:49	06:07 20:41	07:09 19:18	08:11 09:23-10:08/45 18:00	08:18 15:58	08:57 10:42-10:59/17 15:45
25	05:08 21:48	06:09 20:38	07:11 19:15	08:13 08:24-09:08/44 17:58	08:20 15:57	08:57 10:42-10:59/17 15:46
26	05:09 21:46	06:11 20:36	07:13 19:13	08:16 08:24-09:07/43 17:55	08:22 15:56	08:57 10:42-11:00/18 15:47
27	05:11 21:44	06:13 20:33	07:15 19:10	08:18 08:24-09:06/42 17:53	08:23 15:54	08:57 10:43-11:00/17 15:48
28	05:13 21:42	06:15 20:30	07:17 19:07	08:20 08:25-09:06/41 17:50	08:25 15:53	08:58 10:44-11:00/16 15:48
29	05:15 21:40	06:17 20:28	07:19 19:05	08:22 08:26-09:05/39 17:48	08:27 15:52	08:58 10:45-11:00/15 15:49
30	05:17 21:38	06:19 20:25	07:21 19:02	08:24 08:26-09:04/38 17:46	08:29 15:51	08:58 10:46-11:01/15 15:50
31	05:19 21:36	06:21 20:23		08:27 08:28-09:04/36 17:43		08:58 10:47-11:01/14 15:51
Potential sun hours	530	470	385	323	247	215
Sum of minutes with flicker	0	0	0	980	149	370

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_Nordex_N175_Stelpe1

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Laura Kurzemniece / laura.kurzemniece@environment.lv

Calculated:

03.04.2025 10:38/4.1.254

SHADOW - Calendar per WTG

Calculation: Flickering_Nordex_N175 WTG: 13 - NORDEX N175/6.X 6800 175.0 !-! hub: 179,0 m (TOT: 266,5 m) (24

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0,80	1,82	4,75	6,63	9,63	10,06	8,16	7,72	5,94	2,93	0,63	0,52

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

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:57 15:53	08:21 16:50	07:17 17:53	06:54 19:59	05:38 21:02	04:41 21:59	04:35 22:16	05:21 21:34	06:23 20:20	07:23 18:59	07:29 16:41	08:31 15:50
2	08:57 15:54	08:19 16:53	07:14 17:55	06:52 20:01	05:35 21:04	04:40 22:01	04:36 22:15	05:23 21:32	06:25 20:17	07:25 18:57	07:31 16:39	08:32 15:49
3	08:57 15:56	08:17 16:55	07:12 17:57	06:49 20:03	05:33 21:06	04:38 22:02	04:36 22:15	05:25 21:30	06:27 20:15	07:27 18:54	07:33 16:37	08:34 15:48
4	08:56 15:57	08:15 16:57	07:09 18:00	06:46 20:05	05:31 21:08	04:37 22:03	04:37 22:14	05:27 21:28	06:29 20:12	07:29 18:51	07:35 16:35	08:36 15:47
5	08:56 15:58	08:13 16:59	07:06 18:02	06:44 20:07	05:29 21:10	04:36 22:04	04:38 22:13	05:28 21:26	06:31 20:09	07:31 18:49	07:37 16:32	08:37 15:47
6	08:55 16:00	08:11 17:02	07:04 18:04	06:41 20:09	05:26 21:12	04:36 22:06	04:39 22:13	05:30 21:24	06:33 20:07	07:33 18:46	07:40 16:30	08:39 15:46
7	08:55 16:01	08:09 17:04	07:01 18:06	06:38 20:11	05:24 21:14	04:35 22:07	04:41 22:12	05:32 21:21	06:35 20:04	07:35 18:43	07:42 16:28	08:40 15:45
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Potential sun hours	235	266	366	426	508	530	530	470	385	323	247	215
Sum of minutes with flicker	0	0	0	0	0	0	0	0	0	0	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