

Project:

flickering_Nordex_N163_Stelpe1_kumulativa_ietekme

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

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Laura Kurzemniece / laura.kurzemniece@environment.lv

Calculated:

07.04.2025 13:03/4.1.254

SHADOW - Calendar per WTG

Calculation: Flickering_Nordex_N163_kumulativa_ietekme

WTG: 1 - NORDEX N163/6.X 7000 163.0 !OI! hub: 169,0 m (TOT: 250,5 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
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
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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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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 19:42	07:52 18:22	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 21:37	04:30 22:16	04:57 21:57	05:57 20:53	06:59 19:32	08:01 18:12	08:07 16:06	08:54 15:43
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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	08:56 15:46
25	08:33 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	08:21 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	07:18 16:53	08:23 15:54	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	07:20 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	07:22 16:48	08:27 15:52	08:57 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	07:24 16:46	08:29 15:51	08:57 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	07:21 16:44	07:26 16:44	08:30 15:52	08:57 15:52
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
	Sun set (hh:mm)	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	Minutes with flicker

Project:

flickering_Nordex_N163_Stelpe1_kumulativa_ietekme

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Laura Kurzemniece / laura.kurzemniece@environment.lv

Calculated:

07.04.2025 13:03/4.1.254

SHADOW - Calendar per WTG

Calculation: Flickering_Nordex_N163_kumulativa_ietekme WTG: 1 - Siemens Gamesa SG 6.6-170 6600 170.0 !OI hub: 165,0 m (TOT: 250,0 m) (37) 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	July	August	September	October	November	December
1	08:58 15:53 15:54	08:21 16:51 16:53	07:17 17:53 17:55	17:19-17:24/5 19:59 20:01	06:55 18:44-19:02/18 20:01	05:38 21:02 21:04	04:41 22:00 22:16	04:35 22:16 21:33	05:21 06:23 06:25	07:23 17:57-18:08/11 19:00	07:29 18:10-18:29/19 16:41	08:31 15:50 08:33
2	08:57 15:54 15:57	08:19 16:53 17:55	07:14 17:55 17:58	17:18-17:27/9 20:01 20:03	06:52 18:46-19:00/14 20:03	05:36 21:04 21:06	04:40 22:01 22:15	04:36 21:33 20:18	05:23 06:25 06:27	07:25 17:54-18:09/15 18:57	07:31 18:10-18:26/16 16:39	08:33 15:49 08:34
3	08:57 15:56 15:57	08:17 16:55 17:58	07:12 17:58 18:00	17:16-17:29/13 20:03 20:05	06:49 18:49-18:55/6 20:05	05:33 21:06 21:08	04:39 22:02 22:14	04:37 22:15 21:28	05:25 06:27 06:29	07:27 17:53-18:10/17 18:54	07:33 18:11-18:23/12 16:37	08:34 15:48 08:36
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5	08:56 15:58 16:00	08:13 17:00 18:11	07:07 18:02 18:04	17:15-17:33/18 20:08 20:10	06:44 20:08 20:12	05:29 21:10 21:12	04:37 22:05 22:06	04:39 21:26 21:23	05:29 06:31 06:33	07:32 17:50-18:11/21 18:49	07:38 18:12-18:11/21 16:33	08:38 15:47 08:39
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11	08:52 16:08 16:10	08:00 17:13 18:15	06:51 18:15 18:17	17:15-17:31/16 20:20 20:22	06:28 20:20 20:24	05:16 21:23 21:24	04:46 22:11 22:12	04:46 21:13 21:10	05:41 06:43 06:45	18:37-18:54/17 07:44 17:50-18:01/11	07:51 18:11-18:11/21 16:20	08:46 15:43 08:47
12	08:51 16:10 16:11	07:58 17:15 18:17	06:48 18:17 18:19	17:17-17:30/13 20:22 20:24	06:25 20:22 20:26	05:14 21:24 21:26	04:47 22:07 22:06	04:47 21:10 21:08	05:43 06:45 06:47	18:35-18:56/21 07:46 17:51-17:58/7	07:53 18:11-18:11/21 16:18	08:47 15:43 08:49
13	08:50 16:11 16:12	07:56 17:18 18:19	06:46 18:19 18:21	17:19-17:26/7 20:23 20:24	06:23 20:24 20:26	05:12 21:26 21:28	04:48 22:06 22:07	04:48 21:08 21:06	05:45 06:47 06:49	18:33-18:56/23 07:48 17:53-17:56/3	07:55 18:11-18:11/21 16:17	08:49 15:43 08:50
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29	08:27 16:44 16:45	07:17 18:03 19:03	05:59 18:42-19:07/25 20:53 20:58	18:42-19:07/25 20:53 20:58	05:43 20:58 20:58	04:45 21:55 21:57	05:15 22:17 22:18	05:15 20:28 20:26	06:17 07:19 07:21	18:10-18:32/22 07:22 18:10-18:32/22	08:28 18:11-18:11/21 16:48	08:58 15:50 08:59
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31	08:23 16:48 16:49	06:57 18:42-19:03/21 19:57 20:02	05:38 18:42-19:03/21 20:02 20:06	18:42-19:03/21 20:02 20:06	05:38 20:06 20:10	04:42 21:58 21:59	05:19 22:17 22:18	05:19 20:23 20:20	06:21 07:23 07:25	18:10-18:32/22 07:27 18:10-18:32/22	08:31 18:11-18:11/21 16:44	08:58 15:52 08:59
Potential sun hours	234	266	366	426	509	530	530	470	385	323	247	215
Sum of minutes with flicker	0	0	766	38	0	0	0	0	561	257	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_N163_Stelpe1_kumulativa_ietekme

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Laura Kurzemniece / laura.kurzemniece@environment.lv

Calculated:

07.04.2025 13:03/4.1.254

SHADOW - Calendar per WTG

Calculation: Flickering_Nordex_N163_kumulativa_ietekme

WTG: 2 - NORDEX N163/6.X 7000 163.0 !OI hub: 169,0 m (TOT: 250,5 m) (16)

Assumptions for shadow calculations

Sunshine probability 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	04:37 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	04:38 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	05:32 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	05:34 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	07:51 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	05:42 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 17:17	06:45 18:19	06:23 20:24	05:12 21:26	04:31 22:13	04:48 22:06	05:44 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	05:46 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	04:30 22:14	04:51 22:03	05:48 21:03	06:51 19:42	07:52 18:22	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	05:50 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 17:26	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	08:07 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	05:02 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	08:56 15:45
25	08:33 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 17:46	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	08:21 15:56	08:57 15:47
27	08:30 16:39	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	07:18 16:53	08:23 15:54	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	07:20 16:50	08:25 15:53	08:57 15:49
29	08:27 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 15:52	08:58 15:50
30	08:25 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 15:51	08:57 15:51
31	08:23 16:48		06:57 19:57		04:42 21:58		05:19 21:36	06:21 20:23		07:26 16:44		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)	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_Nordex_N163_Stelpe1_kumulativa_ietekme

Licensed user:

SIA Estonian, Latvian & Lithuanian environment
 Vilandes 3-6
 LV-1010 Riga
 0037167242411
 Laura Kurzemniece / laura.kurzemniece@environment.lv
 Calculated:
 07.04.2025 13:03/4.1.254

SHADOW - Calendar per WTG

Calculation: Flickering_Nordex_N163_kumulativa_ietekme WTG: 2 - Siemens Gamesa SG 6.6-170 6600 170,0 !OI hub: 165,0 m (TOT: 250,0 m) (33)
 Sunshine probability 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	08:58 15:53	08:21 16:51	07:17 17:53	06:55 19:59	05:38 21:02	19:34-20:11/37 22:00
2	08:57 15:54	08:19 16:53	07:14 17:55	06:52 20:01	19:21-19:27/6 21:04	19:34-20:11/37 22:01
3	08:57 15:56	08:17 16:55	07:12 17:58	06:49 20:03	19:16-19:31/15 21:06	19:33-20:10/37 22:02
4	08:57 15:57	08:15 16:57	07:09 18:00	06:46 20:05	19:14-19:34/20 21:08	19:33-20:10/37 22:04
5	08:56 15:58	08:13 17:00	07:07 18:02	06:44 20:08	19:11-19:35/24 21:10	19:33-20:09/36 22:05
6	08:56 16:00	08:11 17:02	07:04 18:04	06:41 20:10	19:09-19:36/27 21:12	19:34-20:09/35 22:06
7	08:55 16:01	08:09 17:04	07:01 18:06	06:39 20:12	19:08-19:37/29 21:14	19:34-20:09/35 22:07
8	08:54 16:03	08:07 17:06	06:59 18:08	06:36 20:14	19:07-19:37/30 21:16	19:34-20:08/34 22:08
9	08:54 16:04	08:05 17:09	06:56 18:11	06:33 20:16	19:06-19:38/32 21:18	19:35-20:08/33 22:09
10	08:53 16:06	08:03 17:11	06:54 18:13	06:31 20:18	19:05-19:38/33 21:20	19:35-20:07/32 22:10
11	08:52 16:08	08:00 17:13	06:51 18:15	06:28 20:20	19:04-19:38/34 21:22	19:36-20:06/30 22:11
12	08:51 16:10	07:58 17:15	06:48 18:17	06:25 20:22	19:04-19:38/34 21:24	19:37-20:06/29 22:12
13	08:50 16:11	07:56 17:18	06:46 18:19	06:23 20:24	19:03-19:38/35 21:26	19:38-20:05/27 22:13
14	08:49 16:13	07:54 17:20	06:43 18:21	06:20 20:26	19:03-19:38/35 21:28	19:39-20:04/25 22:14
15	08:48 16:15	07:51 17:22	06:40 18:23	06:18 20:28	19:03-19:37/34 21:30	19:40-20:03/23 22:14
16	08:47 16:17	07:49 17:24	06:38 18:26	06:15 20:31	19:03-19:37/34 21:32	19:42-20:02/20 22:15
17	08:46 16:19	07:47 17:27	06:35 18:28	06:12 20:33	19:03-19:36/33 21:34	19:43-20:00/17 22:16
18	08:44 16:21	07:44 17:29	06:32 18:30	06:10 20:35	19:04-19:36/32 21:36	19:45-19:58/13 22:16
19	08:43 16:23	07:42 17:31	06:30 18:32	06:07 20:37	19:04-19:34/30 21:38	19:48-19:56/8 22:17
20	08:42 16:25	07:39 17:33	06:27 18:34	06:05 20:39	19:05-19:33/28 21:40	19:46-20:02/16 22:17
21	08:40 16:27	07:37 17:36	06:24 18:36	06:02 20:41	19:06-19:33/27 21:42	20:44-20:52/8 22:17
22	08:39 16:29	07:35 17:38	06:21 18:38	06:00 20:43	19:07-19:31/24 21:43	20:40-20:55/15 22:17
23	08:37 16:31	07:32 17:40	06:19 18:40	05:57 20:45	19:08-19:29/21 21:45	20:39-20:57/18 22:18
24	08:36 16:33	07:30 17:42	06:16 18:42	05:55 20:47	19:11-19:27/16 21:47	20:37-20:58/21 22:18
25	08:34 16:35	07:27 17:44	06:13 18:45	05:52 20:49	19:13-19:23/10 21:49	20:36-21:00/24 22:18
26	08:32 16:37	07:25 17:47	06:11 18:47	05:50 20:52	19:37-20:08/31 21:50	20:35-21:01/26 22:18
27	08:31 16:40	07:22 17:49	06:08 18:49	05:47 20:54	19:36-20:10/34 21:52	20:34-21:03/29 22:17
28	08:29 16:42	07:20 17:51	06:05 18:51	05:45 20:56	19:35-20:10/35 21:54	20:33-21:03/30 22:17
29	08:27 16:44		07:03 19:53	05:43 20:58	19:34-20:10/36 21:55	20:32-21:04/32 22:17
30	08:25 16:46		07:00 19:55	05:40 21:00	19:34-20:10/36 21:57	20:32-21:05/33 22:17
31	08:23 16:48		06:57 19:57		20:31-21:05/34 21:58	
Potential sun hours	234	266	366	426	509	530
Sum of minutes with flicker	0	0	0	971	815	1217

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_N163_Stelpe1_kumulativa_ietekme

Licensed user:

SIA Estonian, Latvian & Lithuanian environment
 Vilandes 3-6
 LV-1010 Riga
 0037167242411
 Laura Kurzemniece / laura.kurzemniece@environment.lv
 Calculated:
 07.04.2025 13:03/4.1.254

SHADOW - Calendar per WTG

Calculation: Flickering_Nordex_N163_kumulativa_ietekme WTG: 2 - Siemens Gamesa SG 6.6-170 6600 170.0 !OI hub: 165,0 m (TOT: 250,0 m) (33)
 Sunshine probability 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 20:35-21:16/41 22:16	05:21 19:47-20:17/30 21:35	06:23 19:04-19:38/34 20:20	07:23 18:59 16:41	07:29 16:41 15:50	08:31 15:50
2	04:36 20:34-21:15/41 22:16	05:23 19:46-20:17/31 21:33	06:25 19:04-19:37/33 20:18	07:25 18:57 16:39	07:31 16:39 15:49	08:33 15:49
3	04:36 20:35-21:15/40 22:15	05:25 19:45-20:18/33 21:30	06:27 19:03-19:35/32 20:15	07:27 18:54 16:37	07:33 16:37 15:48	08:34 15:48
4	04:37 20:35-21:15/40 22:14	05:27 19:45-20:18/33 21:28	06:29 19:04-19:34/30 20:12	07:29 18:51 16:35	07:36 16:35 15:47	08:36 15:47
5	04:38 20:36-21:15/39 22:14	05:29 19:44-20:19/35 21:26	06:31 19:04-19:33/29 20:10	07:32 18:49 16:33	07:38 16:33 15:47	08:38 15:47
6	04:39 20:36-21:15/39 22:13	05:31 19:44-20:19/35 21:24	06:33 19:05-19:32/27 20:07	07:34 18:46 16:31	07:40 16:31 15:46	08:39 15:46
7	04:41 20:37-21:15/38 22:12	05:33 19:43-20:19/36 21:22	06:35 19:06-19:30/24 20:04	07:36 18:43 16:28	07:42 16:28 15:45	08:41 15:45
8	04:42 20:37-21:15/38 22:11	05:35 19:43-20:19/36 21:20	06:37 19:08-19:28/20 20:02	07:38 18:41 16:26	07:44 16:26 15:45	08:42 15:45
9	04:43 20:38-21:15/37 22:10	05:37 19:43-20:19/36 21:17	06:39 19:10-19:25/15 19:59	07:40 18:38 16:24	07:47 16:24 15:44	08:44 15:44
10	04:44 20:38-21:14/36 22:09	05:39 19:43-20:19/36 21:15	06:41 19:14-19:21/7 19:56	07:42 18:36 16:22	07:49 16:22 15:44	08:45 15:44
11	04:46 20:39-21:15/36 22:08	05:41 19:43-20:19/36 21:13	06:43 19:54 19:54	07:44 18:33 16:20	07:51 16:20 15:43	08:46 15:43
12	04:47 20:40-21:14/34 22:07	05:43 19:43-20:19/36 21:10	06:45 19:51 19:51	07:46 18:30 16:18	07:53 16:18 15:43	08:47 15:43
13	04:48 20:40-21:14/34 22:06	05:45 19:43-20:19/36 21:08	06:47 19:48 19:48	07:48 18:28 16:17	07:55 16:17 15:43	08:49 15:43
14	04:50 20:41-21:13/32 22:05	05:47 19:42-20:17/35 21:06	06:49 19:45 19:45	07:50 18:25 16:15	07:57 16:15 15:43	08:50 15:43
15	04:51 20:42-21:13/31 22:04	05:49 19:42-20:17/35 21:03	06:51 19:43 19:43	07:52 18:23 16:13	08:00 16:13 15:43	08:51 15:43
16	04:53 20:42-21:12/30 22:02	05:51 19:43-20:16/33 21:01	06:53 19:40 19:40	07:54 18:20 16:11	08:02 16:11 15:43	08:52 15:43
17	04:54 20:43-21:11/28 22:01	05:53 19:43-20:16/33 20:58	06:55 19:37 19:37	07:57 18:18 16:09	08:04 16:09 15:43	08:53 15:43
18	04:56 20:45-21:10/25 21:59	05:55 19:19-19:31/12 20:56	06:57 19:35 19:35	07:59 18:15 16:08	08:06 16:08 15:43	08:53 15:43
19	04:57 20:46-21:09/23 21:58	05:57 19:16-19:33/17 20:54	06:59 19:32 19:32	08:01 18:12 16:06	08:08 16:06 15:43	08:54 15:43
20	04:59 20:48-21:08/20 21:56	05:59 19:14-19:35/21 20:51	07:01 19:29 19:29	08:03 18:10 16:04	08:10 16:04 15:43	08:55 15:43
21	05:01 20:49-21:06/17 21:55	06:01 19:12-19:36/24 20:49	07:03 19:26 19:26	08:05 18:08 16:03	08:12 16:03 15:44	08:56 15:44
22	05:02 20:52-21:03/11 21:53	06:03 19:11-19:37/26 20:46	07:05 19:24 19:24	08:07 18:05 16:01	08:14 16:01 15:44	08:56 15:44
23	05:04 21:51 21:51	06:05 19:08-19:37/29 20:44	07:07 19:21 19:21	08:09 18:03 16:00	08:16 16:00 15:45	08:57 15:45
24	05:06 21:50 21:50	06:07 19:07-19:38/31 20:41	07:09 19:18 19:18	08:12 18:00 15:58	08:18 15:58 15:45	08:57 15:45
25	05:08 19:57-20:08/11 21:48	06:09 19:06-19:38/32 20:38	07:11 19:16 19:16	07:14 16:58 15:57	08:20 15:57 15:46	08:57 15:46
26	05:10 19:54-20:09/15 21:46	06:11 19:06-19:39/33 20:36	07:13 19:13 19:13	07:16 16:55 15:56	08:22 15:56 15:47	08:58 15:47
27	05:11 19:53-20:11/18 21:44	06:13 19:05-19:39/34 20:33	07:15 19:10 19:10	07:18 16:53 15:54	08:24 15:54 15:48	08:58 15:48
28	05:13 19:51-20:13/22 21:42	06:15 19:05-19:39/34 20:31	07:17 19:08 19:08	07:20 16:51 15:53	08:26 15:53 15:49	08:58 15:49
29	05:15 19:49-20:14/25 21:41	06:17 19:04-19:39/35 20:28	07:19 19:05 19:05	07:22 16:48 15:52	08:28 15:52 15:50	08:58 15:50
30	05:17 19:49-20:15/26 21:39	06:19 19:04-19:39/35 20:26	07:21 19:02 19:02	07:25 16:46 15:51	08:29 15:51 15:51	08:58 15:51
31	05:19 19:48-20:16/28 21:37	06:21 19:04-19:38/34 20:23		07:27 16:44 15:52		08:58 15:52
Potential sun hours	530	470	385	323	247	215
Sum of minutes with flicker	855	1132	251	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_N163_Stelpe1_kumulativa_ietekme

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Laura Kurzemniece / laura.kurzemniece@environment.lv

Calculated:

07.04.2025 13:03/4.1.254

SHADOW - Calendar per WTG

Calculation: Flickering_Nordex_N163_kumulativa_ietekme WTG: 3 - NORDEX N163/6.X 7000 163.0 !O! hub: 169,0 m (TOT: 250,5 m) (20) 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 19:59	05:38 21:02	04:41 21:59
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
3	08:57 15:56	08:17 16:55	07:11 17:57	06:49 20:03	05:33 21:06	04:39 22:02
4	08:56 15:57	08:15 16:57	07:09 18:00	06:46 20:05	05:31 21:08	04:38 22:03
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
6	08:55 16:00	08:11 17:02	07:04 18:04	06:41 20:09	05:26 21:12	04:36 22:05
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
8	08:54 16:03	08:07 17:06	07:05 18:08	06:36 20:13	05:22 21:16	04:34 22:08
9	08:53 16:04	08:04 17:08	07:24 18:10	06:33 20:16	05:20 21:18	04:33 22:09
10	08:52 16:06	08:02 17:11	07:23 18:13	06:30 20:18	05:18 21:20	04:33 22:10
11	08:51 16:08	08:00 17:13	07:22 18:15	06:28 20:20	05:16 21:22	04:32 22:11
12	08:51 16:10	07:58 17:15	07:22 18:17	06:25 20:22	05:14 21:24	04:32 22:12
13	08:50 16:11	07:55 17:17	07:22 18:19	06:23 20:24	05:12 21:26	04:31 22:12
14	08:49 16:13	07:53 17:20	07:21 18:21	06:20 20:26	05:10 21:28	04:31 22:13
15	08:47 16:15	07:51 17:22	07:21 18:23	06:17 20:28	05:08 21:30	04:31 22:14
16	08:46 16:17	07:49 17:24	07:22 18:25	06:15 20:30	05:06 21:32	04:30 22:14
17	08:45 16:19	07:46 17:26	07:23 18:27	06:12 20:32	05:04 21:34	04:30 22:15
18	08:44 16:21	07:44 17:29	07:23 18:29	06:10 20:34	05:02 21:36	04:30 22:15
19	08:42 16:23	07:41 17:31	07:26 18:32	06:07 20:36	05:00 21:37	04:30 22:16
20	08:41 16:25	07:39 17:33	17:41-18:04/23	06:05 20:39	04:58 21:39	04:30 22:16
21	08:40 16:27	07:37 17:35	17:40-18:04/24	06:02 20:41	04:57 21:41	04:30 22:16
22	08:38 16:29	07:34 17:38	17:40-18:03/23	06:00 20:43	04:55 21:43	04:30 22:17
23	08:37 16:31	07:32 17:40	17:40-18:03/23	05:57 20:45	04:53 21:45	04:31 22:17
24	08:35 16:33	07:29 17:42	17:40-18:02/22	05:55 20:47	04:52 21:46	04:31 22:17
25	08:33 16:35	07:27 17:44	17:40-18:01/21	05:52 20:49	04:50 21:48	04:31 22:17
26	08:32 16:37	07:24 17:46	17:41-17:59/18	05:50 20:51	04:49 21:50	04:32 22:17
27	08:30 16:39	07:22 17:49	17:43-17:58/15	05:47 20:53	04:47 21:51	04:32 22:17
28	08:28 16:42	07:19 17:51	17:45-17:55/10	05:45 20:55	04:46 21:53	04:33 22:16
29	08:26 16:44		19:53	05:42 20:57	04:45 21:54	04:33 22:16
30	08:25 16:46		19:55	05:40 20:59	04:43 21:56	04:34 22:16
31	08:23 16:48		19:57		04:42 21:58	
Potential sun hours	235	266	366	426	508	529
Sum of minutes with flicker	0	0	521	2130	1486	1104

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_N163_Stelpe1_kumulativa_ietekme

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Laura Kurzemniece / laura.kurzemniece@environment.lv

Calculated:

07.04.2025 13:03/4.1.254

SHADOW - Calendar per WTG

Calculation: Flickering_Nordex_N163_kumulativa_ietekme WTG: 3 - NORDEX N163/6.X 7000 163.0 !O! hub: 169,0 m (TOT: 250,5 m) (20) 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.

	July	August	September	October	November	December
1	04:35 05:37-06:14/37 22:15	05:21 20:34-20:56/22 21:34 05:57-06:18/21	06:23 19:01-19:45/44 20:20 06:59-07:23/24	07:23 08:01-08:24/23 18:59	07:29 08:30 16:41 15:50	08:30 15:50
2	04:36 05:36-06:13/37 22:15	05:23 20:33-20:55/22 21:32 05:58-06:17/19	06:25 19:02-19:44/42 20:17 06:59-07:21/22	07:25 08:01-08:24/23 18:57	07:31 08:32 16:39 15:49	08:32 15:49
3	04:37 05:37-06:14/37 22:14	05:25 20:34-20:54/20 21:30 05:58-06:16/18	06:27 19:02-19:44/42 20:15 06:59-07:20/21	07:27 08:01-08:23/22 18:54	07:33 08:34 16:37 15:48	08:34 15:48
4	04:38 05:37-06:14/37 22:14	05:27 20:34-20:54/20 06:00-06:15/15 21:28 19:46-19:54/8	06:29 19:04-19:41/37 20:12 07:00-07:18/18	07:29 08:01-08:22/21 18:51	07:35 08:36 16:35 15:47	08:36 15:47
5	04:39 05:37-06:14/37 22:13	05:29 20:35-20:52/17 06:02-06:14/12 21:26 19:43-19:57/14	06:31 19:05-19:39/34 20:09 07:02-07:16/14	07:31 08:01-08:21/20 18:49	07:37 08:37 16:33 15:47	08:37 15:47
6	04:40 05:38-06:15/37 22:12	05:31 20:35-20:49/14 06:04-06:11/7 21:23 19:41-19:59/18	06:33 19:07-19:36/29 20:07 07:05-07:13/8	07:33 08:02-08:19/17 18:46	07:40 08:39 16:30 15:46	08:39 15:46
7	04:41 05:38-06:15/37 22:12	05:33 20:37-20:47/10 21:21 19:38-20:00/22	06:35 19:29-19:34/5 20:04 19:11-19:22/11	07:35 08:04-08:17/13 18:43	07:42 08:40 16:28 15:45	08:40 15:45
8	04:42 05:38-06:15/37 22:11	05:34 20:06-20:13/7 06:46-06:52/6 21:19 20:38-20:45/7 19:37-20:01/24	06:37 07:37 20:01 18:41	08:07-08:13/6 18:41	07:44 08:42 16:26 15:45	08:42 15:45
9	04:43 05:38-06:15/37 22:10	05:36 20:03-20:15/12 19:36-20:02/26 21:17 06:43-06:55/12	06:39 07:39 19:59 18:38	07:39 07:39 18:38	07:46 08:43 16:24 15:44	08:43 15:44
10	04:44 05:39-06:15/36 22:09	05:38 19:35-20:17/42 21:15 06:41-06:57/16	06:41 07:42 19:56 18:35	07:42 07:42 18:35	07:48 08:44 16:22 15:44	08:44 15:44
11	04:46 05:39-06:16/37 22:08	05:40 19:18-20:18/60 21:12 06:40-06:58/18	06:43 07:44 19:53 18:33	07:44 07:44 18:33	07:50 08:46 16:20 15:43	08:46 15:43
12	04:47 05:39-06:16/37 22:07	05:42 19:15-20:19/64 21:10 06:39-06:59/20	06:45 07:46 19:51 18:30	07:46 07:46 18:30	07:53 08:47 16:18 15:43	08:47 15:43
13	04:48 05:39-06:16/37 22:05	05:44 19:12-20:19/67 21:08 06:38-07:00/22	06:47 07:48 19:48 18:28	07:48 07:48 18:28	07:55 08:48 16:16 15:43	08:48 15:43
14	04:50 05:39-06:16/37 22:04	05:46 19:10-20:19/69 21:05 06:37-06:59/22	06:49 07:50 19:45 18:25	07:50 07:50 18:25	07:57 08:49 16:15 15:43	08:49 15:43
15	04:51 05:39-06:16/37 22:03	05:48 19:09-20:20/71 21:03 06:36-07:00/24	06:51 18:35-18:43/8 19:42 18:22	07:52 07:52 18:22	07:59 08:50 16:13 15:43	08:50 15:43
16	04:53 05:39-06:16/37 22:02	05:50 19:08-20:20/72 21:00 06:36-07:00/24	06:53 18:32-18:46/14 19:40 18:20	07:54 07:54 18:20	08:01 08:51 16:11 15:43	08:51 15:43
17	04:54 20:42-20:45/3 22:00 05:40-06:16/36	05:53 19:06-20:20/74 20:58 06:36-07:00/24	06:55 18:30-18:47/17 19:37 18:17	07:56 07:56 18:17	08:03 08:52 16:09 15:43	08:52 15:43
18	04:56 20:40-20:48/8 21:59 05:39-06:16/37	05:55 19:05-20:20/75 20:56 06:36-07:00/24	06:57 18:28-18:48/20 19:34 18:15	07:58 07:58 18:15	08:05 08:53 16:08 15:43	08:53 15:43
19	04:57 20:38-20:50/12 21:57 05:40-06:16/36	05:57 19:05-20:19/74 20:53 06:36-07:00/24	06:59 18:27-18:48/21 19:32 18:12	08:00 08:00 18:12	08:07 08:54 16:06 15:43	08:54 15:43
20	04:59 20:37-20:51/14 21:56 05:40-06:17/37	05:59 19:04-20:19/75 06:36-06:59/23 20:51 07:12-07:17/5	07:01 18:26-18:49/23 19:29 18:10	08:03 08:03 18:10	08:09 08:54 16:04 15:44	08:54 15:44
21	05:01 20:36-20:52/16 21:54 05:41-06:18/37	06:01 19:02-20:16/74 06:36-06:59/23 20:48 07:08-07:20/12	07:03 18:25-18:48/23 19:26 18:07	08:05 08:05 18:07	08:11 08:55 16:03 15:44	08:55 15:44
22	05:03 20:36-20:53/17 21:53 05:41-06:18/37	06:03 19:02-20:14/72 06:37-06:58/21 20:46 07:06-07:22/16	07:05 18:25-18:48/23 19:23 18:05	08:07 08:07 18:05	08:13 08:55 16:01 15:44	08:55 15:44
23	05:04 20:34-20:53/19 21:51 05:41-06:19/38	06:05 19:01-20:12/71 06:37-06:56/19 20:43 07:03-07:22/19	07:07 18:24-18:48/24 19:21 18:02	08:09 08:09 18:02	08:15 08:56 16:00 15:45	08:56 15:45
24	05:06 20:34-20:54/20 21:49 05:41-06:19/38	06:07 19:01-20:09/68 06:38-06:54/16 20:41 07:02-07:23/21	07:09 08:10-08:19/9 19:18 18:24-18:47/23	08:11 08:11 18:00	08:17 08:56 15:58 15:46	08:56 15:46
25	05:08 20:34-20:55/21 21:47 05:43-06:19/36	06:09 19:01-20:07/66 06:40-06:52/12 20:38 07:01-07:24/23	07:11 08:07-08:21/14 19:15 18:25-18:45/20	07:13 07:13 16:58	08:19 08:57 15:57 15:46	08:57 15:46
26	05:10 20:33-20:55/22 21:46 05:45-06:20/35	06:11 19:00-20:04/64 06:43-06:49/6 20:35 07:00-07:24/24	07:13 08:05-08:22/17 19:13 18:25-18:42/17	07:16 07:16 16:55	08:21 08:57 15:56 15:47	08:57 15:47
27	05:11 20:33-20:55/22 21:44 05:46-06:19/33	06:13 19:00-20:02/62 20:33 07:00-07:25/25	07:15 08:03-08:23/20 19:10 18:26-18:39/13	07:18 07:18 16:53	08:23 08:57 15:54 15:48	08:57 15:48
28	05:13 20:33-20:56/23 21:42 05:48-06:19/31	06:15 19:00-20:00/60 20:30 06:59-07:25/26	07:17 08:02-08:24/22 19:07 18:27-18:36/9	07:20 07:20 16:50	08:25 08:57 15:53 15:49	08:57 15:49
29	05:15 20:33-20:55/22 05:56-06:19/23 21:40 05:50-05:55/5	06:17 19:01-19:57/56 20:28 06:59-07:24/25	07:19 08:02-08:25/23 19:05 18:30-18:34/4	07:22 07:22 16:48	08:27 08:57 15:52 15:50	08:57 15:50
30	05:17 20:33-20:56/23 21:38 05:56-06:18/22	06:19 19:01-19:47/46 20:25 06:59-07:24/25	07:21 08:02-08:25/23 19:02 16:46	07:24 07:24 16:46	08:29 08:57 15:51 15:51	08:57 15:51
31	05:19 20:33-20:56/23 21:36 05:56-06:18/22	06:21 19:00-19:46/46 20:22 06:59-07:24/25	16:46 07:26 16:44	07:26 07:26 16:44	08:57 08:57 15:52 15:52	08:57 15:52
Potential sun hours	530	470	385	323	247	216
Sum of minutes with flicker	1359	2385	738	145	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_N163_Stelpe1_kumulativa_ietekme

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Laura Kurzemniece / laura.kurzemniece@environment.lv

Calculated:

07.04.2025 13:03/4.1.254

SHADOW - Calendar per WTG

Calculation: Flickering_Nordex_N163_kumulativa_ietekme WTG: 3 - Siemens Gamesa SG 6.6-170 6600 170.0 !OI hub: 165,0 m (TOT: 250,0 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	6,63	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	08:58 15:53 08:57 15:54 08:57 15:56 08:57 15:57 08:56 15:58 08:56 16:00 08:55 16:01 08:54 16:03 08:53 16:06 08:52 16:08 08:51 16:09 08:50 16:11 08:49 16:13 08:48 16:15 08:47 16:17 08:46 16:19 08:44 16:21 08:43 16:23 08:42 16:25 08:40 16:27 08:39 16:29 08:37 16:31 08:36 16:33 08:34 16:35 08:32 16:37 08:31 16:39 08:29 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 08:05 17:09 08:03 17:11 08:00 17:13 07:58 17:15 07:56 17:18 07:54 17:20 07:51 17:22 07:49 17:24 07:47 17:27 07:44 17:29 07:42 17:31 07:39 17:33 07:37 17:36 07:35 17:38 07:32 17:40 07:30 17:42 07:27 17:44 07:25 17:47 07:22 17:49 07:19 17:51 07:03 19:53 07:00 19:55 06:57 19:57	07:17 17:53 07:14 17:55 07:12 17:58 07:09 18:00 07:07 18:02 07:04 18:04 07:01 18:06 06:59 18:08 06:56 18:11 06:53 18:13 06:51 18:15 06:48 18:17 06:46 18:19 06:43 18:21 06:40 18:23 06:38 18:26 06:35 18:28 06:32 18:30 06:29 18:32 06:27 18:34 06:24 18:36 06:21 18:38 06:19 18:40 06:16 18:42 06:13 18:44 06:11 18:47 06:08 18:49 06:05 18:51 07:03 19:53 07:00 19:55 06:57 19:57	06:54 19:59 06:52 20:01 06:49 20:03 06:46 20:05 06:44 20:07 06:41 20:10 06:38 20:12 06:36 20:14 06:33 20:16 06:31 20:18 06:28 20:20 06:25 20:22 06:24 20:24 06:20 20:26 06:17 20:28 06:15 20:31 06:12 20:33 06:10 20:35 06:07 20:37 06:05 20:39 06:02 20:41 06:00 20:43 05:57 20:45 05:55 20:47 05:52 20:49 05:50 20:52 05:47 20:54 05:45 20:56 05:43 20:58 05:41 20:59 05:38 21:00 05:35 21:02 05:32 21:04 05:29 21:06 05:26 21:12 05:24 21:14 05:22 21:16 05:20 21:18 05:18 21:20 05:16 21:22 05:14 21:24 05:12 21:26 05:10 21:28 05:08 21:30 05:06 20:54-20:56/2 05:04 20:53-20:59/6 05:02 20:51-21:00/9 05:00 20:51-21:02/11 04:58 20:50-21:04/14 04:57 20:50-21:06/16 04:55 20:49-21:07/18 04:53 20:49-21:09/20 04:52 20:48-21:10/22 04:50 20:49-21:11/22 04:49 20:49-21:12/23 04:47 20:48-21:11/23 04:52 20:48-21:11/23 04:46 20:48-21:11/23 04:44 20:49-21:11/22 04:43 20:49-21:12/23 04:42 20:49-21:12/23 04:41 20:49-21:12/23 04:40 20:49-21:12/23 04:39 20:49-21:12/23 04:38 20:49-21:12/23 04:37 20:49-21:12/23 04:36 20:49-21:12/23 04:35 20:49-21:12/23 04:34 20:49-21:12/23 04:33 20:49-21:12/23 04:32 20:49-21:12/23 04:31 20:49-21:12/23 04:30 20:49-21:12/23 04:29 20:49-21:12/23 04:28 20:49-21:12/23 04:27 20:49-21:12/23 04:26 20:49-21:12/23 04:25 20:49-21:12/23 04:24 20:49-21:12/23 04:23 20:49-21:12/23 04:22 20:49-21:12/23 04:21 20:49-21:12/23 04:20 20:49-21:12/23 04:19 20:49-21:12/23 04:18 20:49-21:12/23 04:17 20:49-21:12/23 04:16 20:49-21:12/23 04:15 20:49-21:12/23 04:14 20:49-21:12/23 04:13 20:49-21:12/23 04:12 20:49-21:12/23 04:11 20:49-21:12/23 04:10 20:49-21:12/23 04:09 20:49-21:12/23 04:08 20:49-21:12/23 04:07 20:49-21:12/23 04:06 20:49-21:12/23 04:05 20:49-21:12/23 04:04 20:49-21:12/23 04:03 20:49-21:12/23 04:02 20:49-21:12/23 04:01 20:49-21:12/23 04:00 20:49-21:12/23 03:59 20:49-21:12/23 03:58 20:49-21:12/23 03:57 20:49-21:12/23 03:56 20:49-21:12/23 03:55 20:49-21:12/23 03:54 20:49-21:12/23 03:53 20:49-21:12/23 03:52 20:49-21:12/23 03:51 20:49-21:12/23 03:50 20:49-21:12/23 03:49 20:49-21:12/23 03:48 20:49-21:12/23 03:47 20:49-21:12/23 03:46 20:49-21:12/23 03:45 20:49-21:12/23 03:44 20:49-21:12/23 03:43 20:49-21:12/23 03:42 20:49-21:12/23 03:41 20:49-21:12/23 03:40 20:49-21:12/23 03:39 20:49-21:12/23 03:38 20:49-21:12/23 03:37 20:49-21:12/23 03:36 20:49-21:12/23 03:35 20:49-21:12/23 03:34 20:49-21:12/23 03:33 20:49-21:12/23 03:32 20:49-21:12/23 03:31 20:49-21:12/23 03:30 20:49-21:12/23 03:29 20:49-21:12/23 03:28 20:49-21:12/23 03:27 20:49-21:12/23 03:26 20:49-21:12/23 03:25 20:49-21:12/23 03:24 20:49-21:12/23 03:23 20:49-21:12/23 03:22 20:49-21:12/23 03:21 20:49-21:12/23 03:20 20:49-21:12/23 03:19 20:49-21:12/23 03:18 20:49-21:12/23 03:17 20:49-21:12/23 03:16 20:49-21:12/23 03:15 20:49-21:12/23 03:14 20:49-21:12/23 03:13 20:49-21:12/23 03:12 20:49-21:12/23 03:11 20:49-21:12/23 03:10 20:49-21:12/23 03:09 20:49-21:12/23 03:08 20:49-21:12/23 03:07 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20:49-21:12/23 11:58 20:49-21:12/23 11:57 20:49-21:12/23 11:56 20:49-21:12/23 11:55 20:49-21:12/23 11:54 20:49-21:12/23 11:53 20:49-21:12/23 11:52 20:49-21:12/23 11:51 20:49-21:12/23 11:50 20:49-21:12/23 11:49 20:49-21:12/23 11:48 20:49-21:12/23 11:47 20:49-21:12/23 11:46 20:49-21:12/23 11:45 20:49-21:12/23 11:44 20:49-21:12/23 11:43 20:49-21:12/23 11:42 20:49-21:12/23 11:41 20:49-21:12/23 11:40 20:49-21:12/23 11:39 20:49-21:12/23 11:38 20:49-21:12/23 11:37 20:49-21:12/23 11:36 20:49-21:12/23 11:35 20:49-21:12/23 11:34 20:49-21:12/23 11:33 20:49-21:12/23 11:32 20:49-21:12/23 11:31 20:49-21:12/23 11:30 20:49-21:12/23 11:29 20:49-21:12/23 11:28 20:49-21:12/23 11:27 20:49-21:12/23 11:26 20:49-21:12/23 11:25 20:49-21:12/23 11:24 20:49-21:12/23 11:23 20:49-21:12/23 11:22 20:49-21:12/23 11:21 20:49-21:12/23 11:20 20:49-21:12/23 11:19 20:49-21:12/23 11:18 20:49-21:12/23 11:17 20:49-21:12/23 11:16 20:49-21:12/23 11:15 20:49-21:12/23 11:14 20:49-21:12/23 11:13 20:49-21:12/23 11:12 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Project:

flickering_Nordex_N163_Stelpe1_kumulativa_ietekme

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Laura Kurzemniece / laura.kurzemniece@environment.lv

Calculated:

07.04.2025 13:03/4.1.254

SHADOW - Calendar per WTG

Calculation: Flickering_Nordex_N163_kumulativa_ietekme WTG: 4 - NORDEX N163/6.X 7000 163.0 !OI hub: 169,0 m (TOT: 250,5 m) (19)
Sunshine probability 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 16:50	07:17 17:53	06:54 19:59	05:38 19:49-19:56/7 21:02	04:41 20:36-21:16/40 21:59
2	08:57 15:54	08:19 16:53	07:14 17:55	06:52 20:01	05:35 21:04	04:40 20:36-21:17/41 22:00
3	08:57 15:56	08:17 16:55	07:11 17:57	06:49 07:14-07:21/7 20:03	05:33 21:06	04:39 20:37-21:17/40 22:02
4	08:56 15:57	08:15 16:57	07:09 18:00	06:46 07:12-07:24/12 20:05	05:31 21:08	04:38 20:39-21:19/40 22:03
5	08:56 15:58	08:13 16:59	07:06 18:02	06:44 07:09-07:25/16 20:07	05:29 05:57-06:02/5 21:10	04:37 20:39-21:20/41 22:04
6	08:55 16:00	08:11 17:02	07:04 18:04	06:41 07:07-07:26/19 20:09	05:26 05:55-06:05/10 21:12	04:36 20:40-21:22/42 22:06
7	08:55 16:01	08:09 17:04	07:01 18:06	06:38 07:06-07:27/21 20:11	05:24 05:53-06:06/13 21:14	04:35 20:41-20:49/8 22:07 20:51-21:24/33
8	08:54 16:03	08:07 17:06	06:58 18:08	06:36 07:05-07:27/22 20:13	05:22 05:51-06:07/16 21:16	04:34 20:43-20:49/6 22:08 20:52-21:26/34
9	08:53 16:04	08:04 17:08	06:56 17:34-17:41/7 18:10	06:33 07:05-07:28/23 20:16	05:20 20:39-20:44/5 21:18 05:49-06:08/19	04:33 20:52-21:26/34 22:09
10	08:52 16:06	08:02 17:11	06:53 17:33-17:44/11 18:13	06:30 07:04-07:27/23 20:18	05:18 20:37-20:46/9 21:20 05:49-06:09/20	04:33 20:53-21:28/35 22:10
11	08:51 16:08	08:00 17:13	06:51 17:31-17:46/15 18:15	06:28 07:04-07:26/22 20:20	05:16 20:35-20:47/12 21:22 05:48-06:09/21	04:32 20:52-21:28/36 22:11
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13	08:50 16:11	07:55 17:17	06:45 17:29-17:50/21 18:19	06:23 07:04-07:25/21 20:24	05:12 20:34-20:52/18 21:26 05:48-06:10/22	04:31 20:54-21:30/36 22:12
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31	08:23 16:48		06:57 18:52-19:00/8 19:57		04:42 20:35-21:14/39 21:58	
Potential sun hours	235	266	366	426	508	529
Sum of minutes with flicker	0	0	499	602	1086	1126

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_N163_Stelpe1_kumulativa_ietekme

Licensed user:

SIA Estonian, Latvian & Lithuanian environment
 Vilandes 3-6
 LV-1010 Riga
 0037167242411
 Laura Kurzemniece / laura.kurzemniece@environment.lv
 Calculated:
 07.04.2025 13:03/4.1.254

SHADOW - Calendar per WTG

Calculation: Flickering_Nordex_N163_kumulativa_ietekme WTG: 4 - NORDEX N163/6.X 7000 163.0 !OI hub: 169,0 m (TOT: 250,5 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.

	July	August	September	October	November	December
1	04:35 20:57-21:32/35 22:15	05:21 20:45-21:00/15 21:34 05:59-06:20/21	06:23 07:03-07:26/23 20:20	07:23 18:08-18:28/20 18:59	07:29 16:41 15:50	08:31 15:50
2	04:36 20:57-21:32/35 22:15	05:23 20:46-20:57/11 21:32 05:59-06:20/21	06:25 07:02-07:25/23 20:17	07:25 18:09-18:26/17 18:57	07:31 16:39 15:49	08:32 15:49
3	04:37 20:57-21:32/35 22:14	05:25 20:48-20:55/7 21:30 05:59-06:19/20	06:27 07:02-07:25/23 20:15	07:27 18:10-18:23/13 18:54	07:33 16:37 15:48	08:34 15:48
4	04:37 20:49-20:53/4 22:14 20:57-21:31/34	05:27 20:51-20:54/3 21:28 06:00-06:18/18	06:29 07:02-07:24/22 20:12	07:29 18:11-18:21/10 18:51	07:35 16:35 15:47	08:36 15:47
5	04:38 20:48-20:55/7 22:13 20:57-21:31/34	05:29 06:02-06:17/15 21:26	06:31 07:02-07:23/21 20:09	07:31 18:14-18:18/4 18:49	07:37 16:33 15:47	08:37 15:47
6	04:40 20:47-20:56/9 22:12 20:58-21:29/31	05:30 06:04-06:16/12 21:24	06:33 07:03-07:22/19 20:07	07:33 18:46 15:46	07:40 16:30 15:46	08:39 15:46
7	04:41 20:46-21:26/40 22:12	05:32 06:05-06:13/8 21:21	06:35 07:04-07:21/17 20:04	07:35 18:43 15:45	07:42 16:28 15:45	08:40 15:45
8	04:42 20:45-21:26/41 22:11	05:34 21:19 20:01	06:37 07:06-07:19/13 20:01	07:37 18:41 15:45	07:44 16:26 15:45	08:42 15:45
9	04:43 20:45-21:25/40 22:10	05:36 21:17 19:59	06:39 07:08-07:15/7 19:59	07:39 18:38 15:44	07:46 16:24 15:44	08:43 15:44
10	04:44 20:44-21:25/41 22:09	05:38 21:15 19:56	06:41 19:56 18:35	07:42 18:35 15:44	07:48 16:22 15:44	08:44 15:44
11	04:46 20:43-21:24/41 22:08	05:40 21:12 19:53	06:43 19:53 18:33	07:44 18:33 15:43	07:50 16:20 15:43	08:46 15:43
12	04:47 20:44-21:24/40 22:07	05:42 19:56-20:04/8 21:10	06:45 18:45-18:52/7 19:51	07:46 18:30 15:43	07:53 16:18 15:43	08:47 15:43
13	04:48 20:43-21:22/39 22:05	05:44 19:53-20:07/14 21:08	06:47 18:40-18:54/14 19:48	07:48 18:28 15:43	07:55 16:16 15:43	08:48 15:43
14	04:50 20:42-21:21/39 22:04	05:46 19:51-20:08/17 21:05	06:49 18:38-18:55/17 19:45	07:50 18:25 15:43	07:57 16:15 15:43	08:49 15:43
15	04:51 20:43-21:22/39 22:03 06:07-06:10/3	05:48 19:50-20:09/19 21:03	06:51 18:36-18:56/20 19:42	07:52 18:22 15:43	07:59 16:13 15:43	08:50 15:43
16	04:53 20:42-21:21/39 22:02 06:04-06:12/8	05:50 19:49-20:10/21 21:00	06:53 18:35-18:56/21 19:40	07:54 18:20 15:43	08:01 16:11 15:43	08:51 15:43
17	04:54 20:41-21:21/40 22:00 06:03-06:15/12	05:52 19:48-20:11/23 20:58	06:55 18:34-18:57/23 19:37	07:56 18:17 15:43	08:03 16:09 15:43	08:52 15:43
18	04:56 20:42-21:21/39 21:59 06:02-06:16/14	05:55 19:48-20:11/23 20:56	06:57 18:34-18:57/23 19:34	07:58 18:15 15:43	08:05 16:08 15:43	08:53 15:43
19	04:57 20:41-21:20/39 21:57 06:01-06:16/15	05:57 19:47-20:11/24 20:53	06:59 18:33-18:57/24 19:32	08:00 18:12 15:43	08:07 16:06 15:43	08:54 15:43
20	04:59 20:41-21:19/38 21:56 06:01-06:17/16	05:59 19:47-20:11/24 20:51	07:01 18:33-18:56/23 19:29	08:03 18:10 15:44	08:09 16:04 15:44	08:54 15:44
21	05:01 20:41-21:17/36 21:54 05:59-06:18/19	06:01 19:46-20:10/24 20:48	07:03 18:18-18:26/8 19:26 18:33-18:56/23	08:05 18:07 15:44	08:11 16:03 15:44	08:55 15:44
22	05:02 20:41-21:16/35 21:53 05:59-06:19/20	06:03 19:46-20:10/24 20:46	07:05 18:15-18:29/14 19:23 18:33-18:53/20	08:07 18:05 15:44	08:14 16:01 15:44	08:55 15:44
23	05:04 20:41-21:14/33 21:51 05:59-06:20/21	06:05 19:46-20:10/24 20:43	07:07 18:13-18:30/17 19:21 18:33-18:50/17	08:09 18:02 15:45	08:16 16:00 15:45	08:56 15:45
24	05:06 20:41-21:13/32 21:49 05:58-06:20/22	06:07 19:46-20:09/23 20:41	07:09 18:11-18:31/20 19:18 18:34-18:47/13	08:11 18:00 15:45	08:17 15:58 15:45	08:56 15:45
25	05:08 20:42-21:11/29 21:47 05:59-06:20/21	06:09 07:14-07:19/5 20:38 19:46-20:07/21	07:11 18:10-18:31/21 19:15 18:35-18:45/10	07:13 16:58 15:46	08:19 15:57 15:46	08:57 15:46
26	05:10 20:41-21:05/24 21:06-21:09/3 21:46 05:58-06:20/22	06:11 07:10-07:22/12 20:35 19:47-20:04/17	07:13 18:09-18:31/22 19:13 18:37-18:42/5	07:16 16:55 15:47	08:21 15:56 15:47	08:57 15:47
27	05:11 20:42-21:05/23 21:44 05:58-06:21/23	06:13 07:08-07:24/16 20:33 19:48-20:02/14	07:15 18:08-18:31/23 19:10 16:53	07:18 16:53 15:48	08:23 15:54 15:48	08:57 15:48
28	05:13 20:43-21:05/22 21:42 05:58-06:21/23	06:15 07:07-07:25/18 20:30 19:50-20:00/10	07:17 18:08-18:31/23 19:07 16:50	07:20 16:50 15:49	08:25 15:53 15:49	08:57 15:49
29	05:15 20:42-21:04/22 21:40 05:58-06:21/23	06:17 07:05-07:26/21 20:28 19:52-19:57/5	07:19 18:08-18:30/22 19:05 16:48	07:22 16:48 15:50	08:27 15:52 15:50	08:57 15:50
30	05:17 20:43-21:03/20 21:38 05:58-06:20/22	06:19 07:05-07:26/21 20:25	07:21 18:08-18:30/22 19:02 16:46	07:24 16:46 15:51	08:29 15:51 15:51	08:57 15:51
31	05:19 20:44-21:01/17 21:36 05:58-06:20/22	06:21 07:04-07:26/22 20:22	16:44 15:52	07:26 15:52 15:52	08:57 15:52 15:52	08:57 15:52
Potential sun hours	530	470	385	323	247	216
Sum of minutes with flicker	1381	601	620	64	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_N163_Stelpe1_kumulativa_ietekme

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Laura Kurzemniece / laura.kurzemniece@environment.lv

Calculated:

07.04.2025 13:03/4.1.254

SHADOW - Calendar per WTG

Calculation: Flickering_Nordex_N163_kumulativa_ietekme WTG: 4 - Siemens Gamesa SG 6.6-170 6600 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (32)

Assumptions for shadow calculations

Sunshine probability 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	08:58 15:53	08:21 16:51	07:17 17:53	06:55 19:59	05:38 21:02	04:41 22:00	04:35 22:16	05:21 21:35	06:23 20:20	07:23 19:00	07:29 16:41	08:31 15:50
2	08:58 15:54	08:19 16:53	07:14 17:55	06:52 20:01	05:36 21:04	04:40 22:01	04:36 22:16	05:23 21:33	06:25 20:18	07:25 18:57	07:31 16:39	08:33 15:49
3	08:57 15:56	08:17 16:55	07:12 17:58	06:49 20:03	05:33 21:06	04:39 22:02	04:37 22:15	05:25 21:31	06:27 20:15	07:27 18:54	07:34 16:37	08:35 15:48
4	08:57 15:57	08:15 16:57	07:09 18:00	06:47 20:05	05:31 21:08	04:38 22:04	04:37 22:15	05:27 21:28	06:29 20:12	07:30 18:52	07:36 16:35	08:36 15:47
5	08:56 15:58	08:13 17:00	07:07 18:02	06:44 20:08	05:29 21:10	04:37 22:05	04:38 22:14	05:29 21:26	06:31 20:10	07:32 18:49	07:38 16:33	08:38 15:47
6	08:56 16:00	08:11 17:02	07:04 18:04	06:41 20:10	05:27 21:12	04:36 22:06	04:40 22:13	05:31 21:24	06:33 20:07	07:34 18:46	07:40 16:31	08:39 15:46
7	08:55 16:01	08:09 17:04	07:01 18:06	06:39 20:12	05:24 21:14	04:35 22:07	04:41 22:12	05:33 21:22	06:35 20:04	07:36 18:44	07:42 16:28	08:41 15:45
8	08:55 16:03	08:07 17:06	06:59 18:09	06:36 20:14	05:22 21:17	04:34 22:09	04:42 22:11	05:35 21:20	06:37 20:02	07:38 18:41	07:44 16:26	08:42 15:45
9	08:54 16:04	08:05 17:09	06:56 18:11	06:33 20:16	05:20 21:19	04:33 22:10	04:43 22:11	05:37 21:17	06:39 19:59	07:40 18:38	07:47 16:24	08:44 15:44
10	08:53 16:06	08:03 17:11	06:54 18:13	06:31 20:18	05:18 21:21	04:33 22:11	04:44 22:10	05:39 21:15	06:41 19:56	07:42 18:36	07:49 16:22	08:45 15:44
11	08:52 16:08	08:01 17:13	06:51 18:15	06:28 20:20	05:16 21:23	04:32 22:11	04:46 22:08	05:41 21:13	06:43 19:54	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 21:25	04:32 22:12	04:47 22:07	05:43 21:11	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	06:46 18:19	06:23 20:24	05:12 21:27	04:31 22:13	04:48 22:06	05:45 21:08	06:47 19:48	07:48 18:28	07:55 16:17	08:49 15:43
14	08:49 16:13	07:54 17:20	06:43 18:21	06:20 20:26	05:10 21:29	04:31 22:14	04:50 22:05	05:47 21:06	06:49 19:46	07:50 18:25	07:57 16:15	08:50 15:43
15	08:48 16:15	07:51 17:22	06:40 18:23	06:18 20:29	05:08 21:30	04:30 22:15	04:51 22:04	05:49 21:03	06:51 19:43	07:52 18:23	08:00 16:13	08:51 15:43
16	08:47 16:17	07:49 17:24	06:38 18:26	06:15 20:31	05:06 21:32	04:30 22:15	04:53 22:02	05:51 21:01	06:53 19:40	07:55 18:20	08:02 16:11	08:52 15:43
17	08:46 16:19	07:47 17:27	06:35 18:28	06:12 20:33	05:04 21:34	04:30 22:16	04:54 22:01	05:53 20:59	06:55 19:37	07:57 18:18	08:04 16:09	08:53 15:43
18	08:44 16:21	07:44 17:29	06:32 18:30	06:10 20:35	05:02 21:36	04:30 22:16	04:56 21:59	05:55 20:56	06:57 19:35	07:59 18:15	08:06 16:08	08:54 15:43
19	08:43 16:23	07:42 17:31	06:30 18:32	06:07 20:37	05:00 21:38	04:30 22:17	04:57 21:58	05:57 20:54	06:59 19:32	08:01 18:13	08:08 16:06	08:54 15:43
20	08:42 16:25	07:40 17:33	06:27 18:34	06:05 20:39	04:58 21:40	04:30 22:17	04:59 21:56	05:59 20:51	07:01 19:29	08:03 18:10	08:10 16:04	08:55 15:44
21	08:40 16:27	07:37 17:36	06:24 18:36	06:02 20:41	04:57 21:42	04:30 22:17	05:01 21:55	06:01 20:49	07:03 19:27	08:05 18:08	08:12 16:03	08:56 15:44
22	08:39 16:29	07:35 17:38	06:22 18:38	06:00 20:43	04:55 21:44	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	04:30 22:18	05:04 21:52	06:05 20:44	07:07 19:21	08:10 18:03	08:16 16:00	08:57 15:45
24	08:36 16:33	07:30 17:42	06:16 18:42	05:55 20:47	04:52 21:47	04:31 22:18	05:06 21:50	06:07 20:41	07:09 19:18	08:12 18:00	08:18 15:58	08:57 15:45
25	08:34 16:35	07:27 17:45	06:13 18:45	05:52 20:50	04:50 21:49	04:31 22:18	05:08 21:48	06:09 20:39	07:11 19:16	08:14 16:58	08:20 15:57	08:57 15:46
26	08:32 16:37	07:25 17:47	06:11 18:47	05:50 20:52	04:49 21:50	04:32 22:18	05:10 21:46	06:11 20:36	07:13 19:13	08:16 16:55	08:22 15:56	08:58 15:47
27	08:31 16:40	07:22 17:49	06:08 18:49	05:47 20:54	04:47 21:52	04:32 22:17	05:11 21:44	06:13 20:33	07:15 19:10	07:18 16:53	08:24 15:55	08:58 15:48
28	08:29 16:42	07:20 17:51	06:05 18:51	05:45 20:56	04:46 21:54	04:33 22:17	05:13 21:43	06:15 20:31	07:17 19:08	07:20 16:51	08:26 15:53	08:58 15:49
29	08:27 16:44		07:03 19:53	05:43 20:58	04:45 21:55	04:33 22:17	05:15 21:41	06:17 20:28	07:19 19:05	07:23 16:48	08:28 15:52	08:58 15:50
30	08:25 16:46		07:00 19:55	05:40 21:00	04:43 21:57	04:34 22:17	05:17 21:39	06:19 20:26	07:21 19:02	07:25 16:46	08:29 15:51	08:58 15:51
31	08:23 16:48		06:57 19:57		04:42 21:58		05:19 21:37	06:21 20:23		07:27 16:44		08:58 15:52
Potential sun hours	234	266	366	426	509	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
			First time (hh:mm) with flicker	Last time (hh:mm) with flicker	Minutes with flicker

Project:

flickering_Nordex_N163_Stelpe1_kumulativa_ietekme

Licensed user:

SIA Estonian, Latvian & Lithuanian environment
Vilandes 3-6
LV-1010 Riga
0037167242411
Laura Kurzemniece / laura.kurzemniece@environment.lv
Calculated:
07.04.2025 13:03/4.1.254

SHADOW - Calendar per WTG

Calculation: Flickering_Nordex_N163_kumulativa_ietekme WTG: 5 - NORDEX N163/6.X 7000 163.0 !OI hub: 169,0 m (TOT: 250,5 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	08:21 16:50	07:17 17:53	06:54 19:59	05:38 21:02	04:41 21:59	05:29-05:51/22 22:16	04:35 22:16	05:37-05:55/18 21:34	06:23 20:20	07:23 18:59	07:29 16:41
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	05:29-05:51/22 22:15	04:36 22:15	05:37-05:55/18 21:32	06:25 20:17	07:25 18:57	07:31 16:39
3	08:57 15:56	08:17 16:55	07:11 17:57	06:49 20:03	05:33 21:06	04:39 22:02	05:29-05:51/22 22:15	04:36 22:15	05:37-05:56/19 21:30	06:27 20:15	07:27 18:54	07:33 16:37
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	05:30-05:51/21 22:14	04:37 22:14	05:37-05:56/19 21:28	06:29 20:12	07:29 18:51	07:35 16:35
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	05:30-05:51/21 22:13	04:38 22:13	05:37-05:57/20 21:26	06:31 20:09	07:31 18:49	07:37 16:32
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	05:30-05:51/21 22:12	04:39 22:12	05:37-05:57/20 21:24	06:33 20:07	07:33 18:46	07:40 16:30
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	05:31-05:51/20 22:12	04:41 22:12	05:37-05:57/20 21:21	06:35 20:04	07:35 18:43	07:42 16:28
8	08:54 16:03	08:07 17:06	06:58 18:08	06:36 20:13	05:22 21:16	04:34 22:08	05:31-05:51/20 22:11	04:42 22:11	05:37-05:58/21 21:19	06:37 20:01	07:37 18:41	07:44 16:26
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	05:31-05:50/19 22:10	04:43 22:10	05:37-05:58/21 21:17	06:36 19:59	07:39 18:38	07:46 16:24
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	05:32-05:51/19 22:09	04:44 22:09	05:36-05:58/22 21:15	06:41 19:56	07:42 18:35	07:48 16:22
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	05:33-05:51/18 22:08	04:46 22:08	05:37-05:59/22 21:12	06:43 19:53	07:44 18:33	07:50 16:20
12	08:51 16:09	07:58 17:15	06:48 18:17	06:25 20:22	05:14 21:24	04:32 22:12	05:33-05:51/18 22:07	04:47 22:07	05:37-05:59/22 21:10	06:45 19:51	07:46 18:30	07:53 16:18
13	08:50 16:11	07:56 17:17	06:45 18:19	06:23 20:24	05:12 21:26	04:31 22:12	05:34-05:51/17 22:06	04:48 22:06	05:37-05:59/22 21:08	06:47 19:48	07:48 18:28	07:55 16:16
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	05:34-05:51/17 22:04	04:50 22:04	05:37-05:59/22 21:05	06:49 19:45	07:50 18:25	07:57 16:15
15	08:47 16:15	07:51 17:22	06:40 18:23	06:17 20:28	05:08 21:30	04:30 22:14	05:35-05:51/16 22:03	04:51 22:03	05:37-06:00/23 21:03	06:51 19:42	07:52 18:22	07:59 16:13
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	05:34-05:50/16 22:15	04:53 22:15	05:37-06:00/23 21:00	06:50 19:40	07:54 18:20	08:01 16:11
17	08:45 16:19	07:46 17:26	06:35 18:27	06:12 20:32	05:04 21:34	04:30 22:15	05:35-05:51/16 22:00	04:54 22:00	05:38-06:00/22 20:58	06:55 19:37	07:56 18:17	08:03 16:09
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	05:35-05:51/16 22:16	04:56 22:16	05:38-06:00/22 20:56	06:57 19:34	07:58 18:15	08:05 16:08
19	08:42 16:23	07:41 17:31	06:29 18:32	06:07 20:36	05:00 21:37	04:30 22:16	05:35-05:51/16 22:16	04:57 22:16	05:37-05:59/22 20:53	06:59 19:32	08:00 18:12	08:07 16:06
20	08:41 16:25	07:39 17:33	06:27 18:34	06:05 20:39	05:05 21:39	04:30 22:16	05:36-05:52/16 22:16	04:59 22:16	05:38-06:00/22 20:51	06:59 19:29	08:03 18:10	08:09 16:04
21	08:40 16:27	07:37 17:35	06:24 18:36	06:02 20:41	05:07 21:41	04:30 22:17	05:36-05:52/16 22:17	05:01 22:17	05:38-05:59/21 20:48	07:03 19:26	08:05 18:07	08:12 16:03
22	08:38 16:29	07:34 17:38	06:21 18:38	06:00 20:43	05:05 21:43	04:30 22:17	05:36-05:52/16 22:17	05:02 22:17	05:39-05:59/20 20:46	07:05 19:23	08:07 18:05	08:14 16:01
23	08:37 16:31	07:32 17:40	06:18 18:40	05:57 20:45	05:03 21:45	04:30 22:17	05:36-05:52/16 22:17	05:04 22:17	05:40-05:59/19 20:43	07:07 19:21	08:09 18:02	08:16 16:00
24	08:35 16:33	07:29 17:42	06:16 18:42	05:55 20:47	05:02 21:46	04:31 22:17	05:37-05:53/16 22:17	05:06 22:17	05:41-05:58/17 20:41	07:09 19:18	08:11 18:00	08:18 15:58
25	08:33 16:35	07:27 17:44	06:13 18:44	05:52 20:49	05:00 21:48	04:31 22:17	05:37-05:53/16 22:17	05:08 22:17	05:43-05:57/14 20:38	07:11 19:15	07:13 16:58	08:19 15:57
26	08:32 16:37	07:24 17:46	06:10 18:46	05:50 20:51	05:00 21:50	04:30 22:17	05:36-05:53/17 22:17	05:10 22:17	05:44-05:56/12 20:36	07:13 19:13	07:16 16:55	08:21 15:56
27	08:30 16:39	07:22 17:49	06:08 18:48	05:47 20:53	05:00 21:51	04:30 22:17	05:37-05:53/16 22:17	05:11 22:17	05:46-05:54/8 20:33	07:15 19:10	07:18 16:53	08:23 15:54
28	08:28 16:42	07:19 17:51	06:05 18:50	05:45 20:55	05:00 21:53	04:30 22:17	05:37-05:54/17 22:17	05:13 22:17	05:48-05:52/4 20:30	07:17 19:07	07:20 16:50	08:25 15:53
29	08:27 16:44	07:19 17:53	06:05 19:53	05:42 20:57	05:00 21:55	04:30 22:16	05:37-05:54/17 22:16	05:15 22:16	05:48-05:52/4 20:28	07:19 19:05	07:22 16:48	08:27 15:52
30	08:25 16:46	07:19 17:55	06:05 19:55	05:40 20:59	05:00 21:56	04:30 22:16	05:37-05:55/18 22:16	05:17 22:16	05:48-05:52/4 20:25	07:21 19:02	07:24 16:46	08:29 15:51
31	08:23 16:48	07:19 17:57	06:05 19:57	05:40 20:59	05:00 21:58	04:30 22:16	05:37-05:55/18 22:16	05:19 22:16	05:48-05:52/4 20:23	07:21 19:02	07:24 16:46	08:29 15:51
Potential sun hours	235	266	366	426	508	529	530	470	385	323	247	215
Sum of minutes with flicker	0	0	0	245	301	538	535	246	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_N163_Stelpe1_kumulativa_ietekme

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Laura Kurzemniece / laura.kurzemniece@environment.lv

Calculated:

07.04.2025 13:03/4.1.254

SHADOW - Calendar per WTG

Calculation: Flickering_Nordex_N163_kumulativa_ietekme WTG: 5 - Siemens Gamesa SG 6.6-170 6600 170.0 !OI hub: 165,0 m (TOT: 250,0 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	6,63	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	08:58 15:53	08:21 16:51	07:17 17:53	06:55 19:59	05:38 21:02	04:41 21:13-21:21/8	04:35 21:14-21:35/21	05:21 21:35	06:23 20:20	07:23 18:59	07:29 16:41	08:31 15:50
2	08:58 15:54	08:19 16:53	07:14 17:55	06:52 20:01	05:36 21:04	04:40 21:12-21:22/10	04:36 21:14-21:35/21	05:23 21:33	06:25 20:18	07:25 18:57	07:31 16:39	08:33 15:49
3	08:57 15:56	08:17 16:55	07:12 17:58	06:49 20:03	05:33 21:06	04:38 21:11-21:23/12	04:36 21:15-21:35/20	05:25 21:30	06:27 20:15	07:27 18:54	07:33 16:37	08:35 15:48
4	08:57 15:57	08:15 16:57	07:09 18:00	06:46 20:05	05:31 21:08	04:37 21:12-21:25/13	04:37 21:16-21:34/18	05:27 21:28	06:29 20:12	07:29 18:51	07:36 16:35	08:36 15:47
5	08:56 15:58	08:13 17:00	07:07 18:02	06:44 20:08	05:29 21:10	04:36 21:11-21:26/15	04:38 21:16-21:34/18	05:29 21:26	06:31 20:10	07:32 18:49	07:38 16:33	08:38 15:47
6	08:56 16:00	08:11 17:02	07:04 18:04	06:41 20:10	05:26 21:12	04:36 21:11-21:27/16	04:39 21:17-21:33/16	05:31 21:24	06:33 20:07	07:34 18:46	07:40 16:30	08:39 15:46
7	08:55 16:01	08:09 17:04	07:01 18:06	06:39 20:12	05:24 21:14	04:35 21:10-21:27/17	04:41 21:17-21:33/16	05:33 21:22	06:35 20:04	07:36 18:43	07:42 16:28	08:41 15:45
8	08:55 16:03	08:07 17:06	06:59 18:08	06:36 20:14	05:22 21:16	04:34 21:10-21:29/19	04:42 21:18-21:32/14	05:35 21:20	06:37 20:02	07:38 18:41	07:44 16:26	08:42 15:45
9	08:54 16:04	08:05 17:09	06:56 18:11	06:33 20:16	05:20 21:19	04:33 21:10-21:29/19	04:43 21:19-21:31/12	05:37 21:17	06:39 20:02	07:40 18:38	07:47 16:24	08:44 15:44
10	08:53 16:06	08:03 17:11	06:54 18:13	06:31 20:18	05:18 21:21	04:33 21:10-21:31/21	04:44 21:19-21:30/11	05:39 21:15	06:41 20:02	07:42 18:36	07:49 16:22	08:45 15:44
11	08:52 16:08	08:00 17:13	06:51 18:15	06:28 20:20	05:16 21:23	04:32 21:10-21:31/21	04:45 21:20-21:29/9	05:41 21:13	06:43 20:02	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 21:25	04:32 21:10-21:32/22	04:47 21:22-21:29/7	05:43 21:10	06:45 20:02	07:46 18:30	07:53 16:18	08:47 15:43
13	08:50 16:11	07:56 17:18	06:46 18:19	06:23 20:24	05:12 21:27	04:31 21:10-21:33/23	04:48 21:24-21:27/3	05:45 21:08	06:47 20:02	07:48 18:28	07:55 16:16	08:49 15:43
14	08:49 16:13	07:54 17:20	06:43 18:21	06:20 20:26	05:10 21:28	04:31 21:11-21:34/23	04:50 22:05	05:47 21:06	06:49 20:02	07:50 18:25	07:57 16:15	08:50 15:43
15	08:48 16:15	07:51 17:22	06:40 18:23	06:18 20:29	05:08 21:30	04:30 21:10-21:34/24	04:51 22:04	05:49 21:03	06:51 20:02	07:52 18:23	08:00 16:13	08:51 15:43
16	08:47 16:17	07:49 17:24	06:38 18:26	06:15 20:31	05:06 21:32	04:30 21:10-21:34/24	04:53 22:02	05:51 21:01	06:53 20:02	07:54 18:20	08:02 16:11	08:52 15:43
17	08:46 16:19	07:47 17:27	06:35 18:28	06:12 20:33	05:04 21:34	04:30 21:10-21:34/24	04:54 22:01	05:53 20:59	06:55 20:02	07:57 18:18	08:04 16:09	08:53 15:43
18	08:44 16:21	07:44 17:29	06:32 18:30	06:10 20:35	05:02 21:36	04:30 21:10-21:35/25	04:56 21:59	05:55 20:56	06:57 20:02	07:59 18:15	08:06 16:08	08:53 15:43
19	08:43 16:23	07:42 17:31	06:30 18:32	06:07 20:37	05:00 21:38	04:30 21:11-21:35/24	04:57 21:58	05:57 20:54	06:59 20:02	08:01 18:12	08:08 16:06	08:54 15:43
20	08:42 16:25	07:39 17:33	06:27 18:34	06:05 20:39	04:58 21:40	04:30 21:11-21:35/24	04:59 21:56	05:59 20:51	07:01 20:02	08:03 18:10	08:10 16:04	08:55 15:43
21	08:40 16:27	07:37 17:36	06:24 18:36	06:02 20:41	04:57 21:42	04:30 21:12-21:36/24	05:01 21:55	06:01 20:49	07:03 20:02	08:05 18:08	08:12 16:03	08:56 15:44
22	08:39 16:29	07:35 17:38	06:21 18:38	06:00 20:43	04:55 21:43	04:30 21:12-21:36/24	05:02 21:53	06:03 20:46	07:05 20:02	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	04:30 21:12-21:36/24	05:04 21:52	06:05 20:44	07:07 20:02	08:09 18:03	08:16 16:00	08:57 15:45
24	08:36 16:33	07:30 17:42	06:16 18:42	05:55 20:47	04:52 21:47	04:31 21:12-21:36/24	05:06 21:50	06:07 20:41	07:09 20:02	08:12 18:00	08:18 15:58	08:57 15:45
25	08:34 16:35	07:27 17:44	06:13 18:45	05:52 20:49	04:50 21:49	04:31 21:12-21:37/25	05:08 21:48	06:09 20:38	07:11 20:02	07:14 16:58	08:20 15:57	08:57 15:46
26	08:32 16:37	07:25 17:47	06:11 18:47	05:50 20:52	04:49 21:50	04:32 21:12-21:36/24	05:10 21:46	06:11 20:36	07:13 20:02	07:16 16:55	08:22 15:56	08:58 15:47
27	08:31 16:40	07:22 17:49	06:08 18:49	05:47 20:54	04:47 21:52	04:32 21:13-21:37/24	05:11 21:44	06:13 20:33	07:15 20:02	07:18 16:53	08:24 15:54	08:58 15:48
28	08:29 16:42	07:20 17:51	06:05 18:51	05:45 20:56	04:46 21:54	04:33 21:13-21:36/23	05:13 21:43	06:15 20:31	07:17 20:02	07:20 16:51	08:26 15:53	08:58 15:49
29	08:27 16:44	07:17 19:53	06:03 19:53	05:43 20:58	04:44 21:55	04:33 21:13-21:36/23	05:15 21:41	06:17 20:28	07:19 20:02	07:23 16:48	08:28 15:52	08:58 15:49
30	08:25 16:46	07:00 19:55	05:40 21:00	04:43 21:57	21:16-21:18/2	04:34 21:14-21:36/22	05:17 21:39	06:19 20:26	07:21 19:02	07:25 16:46	08:29 15:51	08:58 15:50
31	08:23 16:48	06:57 19:57	05:17 21:57	04:42 21:58	21:14-21:20/6	04:32 21:14-21:20/6	05:19 21:37	06:21 20:23	07:27 16:44	07:27 16:44	08:27 15:52	08:58 15:52
Potential sun hours	234	266	366	426	509	530	530	470	385	323	247	215
Sum of minutes with flicker	0	0	0	0	8	621	186	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_N163_Stelpe1_kumulativa_ietekme

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Laura Kurzemniece / laura.kurzemniece@environment.lv

Calculated:

07.04.2025 13:03/4.1.254

SHADOW - Calendar per WTG

Calculation: Flickering_Nordex_N163_kumulativa_ietekme WTG: 6 - NORDEX N163/6.X 7000 163.0 !O! hub: 169,0 m (TOT: 250,5 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	07:40-08:04/24 21:02	05:38 19:54-20:11/17 21:59
2	08:57 15:54	08:19 16:53	07:14 17:55	06:52 20:01	07:37-08:05/28 21:04	05:35 19:54-20:09/15 22:00
3	08:57 15:56	08:17 16:55	07:12 17:57	06:49 20:03	07:35-08:06/31 21:06	05:33 19:55-20:07/12 22:02
4	08:56 15:57	08:15 16:57	07:09 18:00	06:46 20:05	07:34-08:08/34 21:08	05:31 19:58-20:04/6 22:03
5	08:56 15:58	08:13 16:59	07:06 18:02	06:44 20:07	07:32-08:08/36 21:10	05:29 22:04
6	08:55 16:00	08:11 17:02	07:04 18:04	06:41 20:09	07:30-08:09/39 21:12	05:26 22:06
7	08:55 16:01	08:09 17:04	07:01 18:06	06:38 20:11	07:30-08:10/40 21:14	05:24 22:07
8	08:54 16:03	08:07 17:06	06:59 18:08	06:36 20:13	07:28-08:10/42 21:16	05:22 22:08
9	08:53 16:05	08:04 17:08	06:56 18:10	06:33 20:16	07:28-08:10/42 21:18	05:20 22:09
10	08:52 16:06	08:02 17:11	06:53 18:13	06:30 20:18	07:27-08:10/43 21:20	05:18 22:10
11	08:52 16:08	08:00 17:13	06:51 18:15	06:28 20:20	07:26-08:10/44 21:22	05:16 22:11
12	08:51 16:10	07:58 17:15	06:48 18:17	06:25 20:22	07:26-08:10/44 21:24	05:14 22:12
13	08:50 16:11	07:56 17:18	06:45 18:19	06:23 20:24	07:25-08:09/44 21:26	05:12 22:12
14	08:49 16:13	07:53 17:20	06:43 18:21	06:20 20:26	07:25-08:10/45 21:28	05:10 22:13
15	08:47 16:15	07:51 17:22	06:40 18:23	06:17 20:28	07:25-08:09/44 21:30	05:08 22:14
16	08:46 16:17	07:49 17:24	06:37 18:25	06:15 20:30	07:25-08:09/44 21:32	05:06 22:14
17	08:45 16:19	07:46 17:27	06:35 18:27	06:12 20:32	07:25-08:07/42 21:34	05:04 22:15
18	08:44 16:21	07:44 17:29	06:32 18:30	06:10 20:34	20:01-20:04/3 07:25-08:07/42 21:36	05:02 22:16
19	08:42 16:23	07:41 17:31	06:29 18:32	06:07 20:36	19:58-20:06/8 07:25-08:06/41 21:37	05:00 22:16
20	08:41 16:25	07:39 17:33	06:27 18:34	06:05 20:39	19:56-20:08/12 07:26-08:05/39 21:39	04:58 22:16
21	08:40 16:27	07:37 17:35	06:24 18:36	06:02 20:41	19:54-20:09/15 07:27-08:05/38 21:41	04:57 22:17
22	08:38 16:29	07:34 17:38	06:21 18:38	06:00 20:43	19:53-20:12/19 07:27-08:03/36 21:43	04:55 22:17
23	08:37 16:31	07:32 17:40	06:19 18:40	05:57 20:45	19:53-20:14/21 07:28-08:02/34 21:45	04:53 22:17
24	08:35 16:33	07:29 17:42	06:16 18:42	05:55 20:47	19:52-20:13/21 07:28-08:00/32 21:46	04:52 22:17
25	08:33 16:35	07:27 17:44	06:13 18:44	05:52 20:49	19:52-20:14/22 07:30-07:58/28 21:48	04:50 22:17
26	08:32 16:37	07:24 17:47	06:10 18:46	05:50 20:51	19:52-20:14/22 07:31-07:57/26 21:50	04:49 22:17
27	08:30 16:40	07:22 17:49	06:08 18:48	05:47 20:53	19:51-20:13/22 07:33-07:55/22 21:51	04:47 22:17
28	08:28 16:42	07:19 17:51	06:05 18:50	05:45 20:55	19:51-20:13/22 07:35-07:51/16 21:53	04:46 22:17
29	08:27 16:44		07:02 19:53	05:43 20:57	19:52-20:12/20 07:40-07:46/6 21:55	04:45 22:16
30	08:25 16:46		07:00 19:55	05:40 20:59	19:53-20:12/19 21:56	04:43 22:16
31	08:23 16:48		06:57 19:57		07:43-08:00/17 21:58	04:42
Potential sun hours	235	266	366	426	508	529
Sum of minutes with flicker	0	0	23	1252	50	80

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_Nordex_N163_Stelpe1_kumulativa_ietekme

Licensed user:

SIA Estonian, Latvian & Lithuanian environment
 Vilandes 3-6
 LV-1010 Riga
 0037167242411
 Laura Kurzemniece / laura.kurzemniece@environment.lv
 Calculated:
 07.04.2025 13:03/4.1.254

SHADOW - Calendar per WTG

Calculation: Flickering_Nordex_N163_kumulativa_ietekme WTG: 6 - NORDEX N163/6.X 7000 163.0 !OI hub: 169,0 m (TOT: 250,5 m) (14)
 Sunshine probability 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 07:26-08:10/44 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 07:25-08:08/43 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 07:25-08:07/42 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 07:25-08:07/42 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 07:26-08:06/40 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 07:26-08:05/39 20:07	07:33 18:46	07:40 16:30	08:39 15:46
7	04:41 22:12	05:33 21:21	06:35 07:27-08:04/37 20:04	07:35 18:43	07:42 16:28	08:40 15:45
8	04:42 22:11	05:35 21:19	06:37 07:28-08:02/34 20:01	07:37 18:41	07:44 16:26	08:42 15:45
9	04:43 22:10	05:36 20:07-20:15/8 21:17	06:39 07:29-08:00/31 19:59	07:39 18:38	07:46 16:24	08:43 15:44
10	04:44 22:09	05:38 20:04-20:17/13 21:15	06:41 07:30-07:58/28 19:56	07:42 18:35	07:48 16:22	08:44 15:44
11	04:46 22:08	05:40 20:03-20:18/15 21:12	06:43 07:32-07:56/24 19:53	07:44 18:33	07:50 16:20	08:46 15:43
12	04:47 22:07	05:42 20:02-20:20/18 21:10	06:45 07:35-07:53/18 19:51	07:46 18:30	07:53 16:18	08:47 15:43
13	04:48 22:06	05:44 20:00-20:19/19 21:08	06:47 07:39-07:48/9 19:48	07:48 18:28	07:55 16:16	08:48 15:43
14	04:50 22:04	05:47 19:59-20:20/21 21:05	06:49 07:46-07:55/9 19:45	07:50 18:25	07:57 16:15	08:49 15:43
15	04:51 22:03	05:49 19:59-20:20/21 21:03	06:51 07:42-07:59/17 19:42	07:52 18:22	07:59 16:13	08:50 15:43
16	04:53 22:02	05:51 19:58-20:20/22 21:00	06:53 07:39-08:02/23 19:40	07:54 18:20	08:01 16:11	08:51 15:43
17	04:54 22:00	05:53 19:58-20:20/22 20:58	06:55 07:37-08:04/27 19:37	07:56 18:17	08:03 16:09	08:52 15:43
18	04:56 21:59	05:55 19:58-20:20/22 20:56	06:57 07:36-08:05/29 19:34	07:58 18:15	08:05 16:08	08:53 15:43
19	04:58 21:57	05:57 19:58-20:20/22 20:53	06:59 07:34-08:07/33 19:32	08:01 18:12	08:07 16:06	08:54 15:43
20	04:59 21:56	05:59 19:59-20:19/20 20:51	07:01 07:33-08:08/35 19:29	08:03 18:10	08:09 16:04	08:54 15:44
21	05:01 21:54	06:01 19:58-20:16/18 20:48	07:03 07:32-08:09/37 19:26	08:05 18:07	08:12 16:03	08:55 15:44
22	05:03 21:53	06:03 19:59-20:14/15 20:46	07:05 07:30-08:09/39 19:24	08:07 18:05	08:14 16:01	08:56 15:44
23	05:04 21:51	06:05 20:00-20:12/12 20:43	07:07 07:29-08:09/40 19:21	08:09 18:02	08:16 16:00	08:56 15:45
24	05:06 21:49	06:07 20:02-20:09/7 20:41	07:09 07:29-08:10/41 19:18	08:11 18:00	08:18 15:58	08:56 15:46
25	05:08 21:47	06:09 20:05-20:07/2 20:38	07:11 07:28-08:10/42 19:15	08:13 18:00	08:19 15:57	08:57 15:46
26	05:10 21:46	06:11 07:27-08:10/43 20:36	07:13 07:27-08:10/43 19:13	08:15 17:55	08:21 15:56	08:57 15:47
27	05:11 21:44	06:13 07:27-08:10/43 20:33	07:15 07:27-08:10/43 19:10	08:18 17:53	08:23 15:55	08:57 15:48
28	05:13 21:42	06:15 07:27-08:11/44 20:30	07:17 07:27-08:11/44 19:07	08:20 17:51	08:25 15:53	08:57 15:49
29	05:15 21:40	06:17 07:26-08:10/44 20:28	07:19 07:26-08:10/44 19:05	08:22 17:48	08:27 15:52	08:57 15:50
30	05:17 21:38	06:19 07:26-08:10/44 20:25	07:21 07:26-08:10/44 19:02	08:24 17:46	08:29 15:51	08:57 15:51
31	05:19 21:36	06:21 07:26-08:10/44 20:23		08:26 17:44		08:57 15:52
Potential sun hours	530	470	385	323	247	216
Sum of minutes with flicker	0	911	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_N163_Stelpe1_kumulativa_ietekme

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Laura Kurzemniece / laura.kurzemniece@environment.lv

Calculated:

07.04.2025 13:03/4.1.254

SHADOW - Calendar per WTG

Calculation: Flickering_Nordex_N163_kumulativa_ietekme WTG: 6 - Siemens Gamesa SG 6.6-170 6600 170.0 !O! hub: 165,0 m (TOT: 250,0 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	6,63	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	08:58 15:53	08:21 16:50	07:17 17:53	06:55 19:59	05:38 21:02	04:41 22:00	04:35 22:16	05:21 21:35	06:23 20:20	07:23 18:59	07:29 16:41	08:31 15:50
2	08:58 15:54	08:20 16:53	07:14 17:55	06:52 20:01	05:35 21:04	04:39 22:01	04:35 22:16	05:23 21:33	06:25 20:18	07:25 18:57	07:31 16:39	08:33 15:49
3	08:57 15:55	08:18 16:55	07:12 17:58	06:49 20:03	05:33 21:06	04:38 22:03	04:36 22:15	05:25 21:31	06:27 20:15	07:27 18:54	07:34 16:37	08:35 15:48
4	08:57 15:57	08:16 16:57	07:09 18:00	06:46 20:05	05:31 21:08	04:37 22:04	04:37 22:15	05:27 21:28	06:29 20:12	07:30 18:51	07:36 16:35	08:36 15:47
5	08:56 15:58	08:13 16:59	07:07 18:02	06:44 20:08	05:29 21:10	04:36 22:05	04:38 22:14	05:29 21:26	06:31 20:10	07:32 18:49	07:38 16:33	08:38 15:46
6	08:56 16:00	08:11 17:02	07:04 18:04	06:41 20:10	05:26 21:12	04:36 22:06	04:39 22:13	05:31 21:24	06:33 20:07	07:34 18:46	07:40 16:30	08:39 15:46
7	08:55 16:01	08:09 17:04	07:01 18:06	06:39 20:12	05:24 21:15	04:35 22:07	04:40 22:12	05:32 21:22	06:35 20:04	07:36 18:43	07:42 16:28	08:41 15:45
8	08:55 16:03	08:07 17:06	06:59 18:08	06:36 20:14	05:22 21:17	04:34 22:09	04:42 22:12	05:34 21:20	06:37 20:02	07:38 18:41	07:44 16:26	08:42 15:45
9	08:54 16:04	08:05 17:09	06:56 18:11	06:33 20:16	05:20 21:19	04:33 22:10	04:43 22:11	05:36 21:17	06:39 19:59	07:40 18:38	07:47 16:24	08:44 15:44
10	08:53 16:06	08:03 17:11	06:54 18:13	06:31 20:18	05:18 21:21	04:33 22:11	04:44 22:10	05:38 21:15	06:41 19:56	07:42 18:36	07:49 16:22	08:45 15:44
11	08:52 16:08	08:01 17:13	06:51 18:15	06:28 20:20	05:16 21:23	04:32 22:12	04:45 22:09	05:40 21:13	06:43 19:54	07:44 18:33	07:51 16:20	08:46 15:43
12	08:51 16:09	07:58 17:15	06:48 18:17	06:25 20:22	05:14 21:25	04:31 22:12	04:47 22:07	05:42 21:11	06:45 19:51	07:46 18:30	07:53 16:18	08:48 15:43
13	08:50 16:11	07:56 17:18	06:46 18:19	06:23 20:24	05:12 21:27	04:31 22:13	04:48 22:06	05:45 21:08	06:47 19:48	07:48 18:28	07:55 16:16	08:49 15:43
14	08:49 16:13	07:54 17:20	06:43 18:21	06:20 20:26	05:10 21:29	04:31 22:14	04:50 22:05	05:47 21:06	06:49 19:46	07:50 18:25	07:57 16:15	08:50 15:43
15	08:48 16:15	07:51 17:22	06:40 18:23	06:17 20:29	05:08 21:31	04:30 22:15	04:51 22:04	05:49 21:03	06:51 19:43	07:52 18:23	08:00 16:13	08:51 15:43
16	08:47 16:17	07:49 17:24	06:38 18:26	06:15 20:31	05:06 21:32	04:30 22:15	04:53 22:02	05:51 21:01	06:53 19:40	07:55 18:20	08:02 16:11	08:52 15:43
17	08:46 16:19	07:47 17:27	06:35 18:28	06:12 20:33	05:04 21:34	04:30 22:16	04:54 22:01	05:53 20:59	06:55 19:37	07:57 18:18	08:04 16:09	08:53 15:43
18	08:44 16:21	07:44 17:29	06:32 18:30	06:10 20:35	05:02 21:36	04:30 22:16	04:56 22:00	05:55 20:56	06:57 19:35	07:59 18:15	08:06 16:08	08:54 15:43
19	08:43 16:23	07:42 17:31	06:30 18:32	06:07 20:37	05:00 21:38	04:30 22:17	04:57 21:58	05:57 20:54	06:59 19:32	08:01 18:12	08:08 16:06	08:54 15:43
20	08:42 16:25	07:40 17:33	06:27 18:34	06:05 20:39	04:58 21:40	04:30 22:17	04:59 21:57	05:59 20:51	07:01 19:29	08:03 18:10	08:10 16:04	08:55 15:43
21	08:40 16:27	07:37 17:36	06:24 18:36	06:02 20:41	04:57 21:42	04:30 22:17	05:01 21:55	06:01 20:49	07:03 19:27	08:05 18:07	08:12 16:03	08:56 15:44
22	08:39 16:29	07:35 17:38	06:21 18:38	06:00 20:43	04:55 21:44	04:30 22:18	05:02 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	04:30 22:18	05:04 21:52	06:05 20:44	07:07 19:21	08:10 18:03	08:16 16:00	08:57 15:45
24	08:36 16:33	07:30 17:42	06:16 18:42	05:55 20:47	04:52 21:47	04:31 22:18	05:06 21:50	06:07 20:41	07:09 19:18	08:12 18:00	08:18 15:58	08:57 15:45
25	08:34 16:35	07:27 17:44	06:13 18:45	05:52 20:50	04:50 21:49	04:31 22:18	05:08 21:48	06:09 20:39	07:11 19:16	07:14 16:58	08:20 15:57	08:58 15:46
26	08:32 16:37	07:25 17:47	06:11 18:47	05:50 20:52	04:49 21:50	04:31 22:18	05:09 21:46	06:11 20:36	07:13 19:13	07:16 16:55	08:22 15:56	08:58 15:47
27	08:31 16:39	07:22 17:49	06:08 18:49	05:47 20:54	04:47 21:52	04:32 22:18	05:11 21:44	06:13 20:33	07:15 19:10	07:18 16:53	08:24 15:54	08:58 15:48
28	08:29 16:42	07:20 17:51	06:05 18:51	05:45 20:56	04:46 21:54	04:33 22:17	05:13 21:43	06:15 20:31	07:17 19:08	07:20 16:51	08:26 15:53	08:58 15:48
29	08:27 16:44		07:03 19:53	05:43 20:58	04:44 21:55	04:33 22:17	05:15 21:41	06:17 20:28	07:19 19:05	07:23 16:48	08:28 15:52	08:58 15:49
30	08:25 16:46		07:00 19:55	05:40 21:00	04:43 21:57	04:34 22:17	05:17 21:39	06:19 20:26	07:21 19:02	07:25 16:46	08:29 15:51	08:58 15:50
31	08:23 16:48		06:57 19:57		04:42 21:58		05:19 21:37	06:21 20:23		07:27 16:44		08:58 15:51
Potential sun hours	234	266	366	427	509	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)	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_N163_Stelpe1_kumulativa_ietekme

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Laura Kurzemniece / laura.kurzemniece@environment.lv

Calculated:

07.04.2025 13:03/4.1.254

SHADOW - Calendar per WTG

Calculation: Flickering_Nordex_N163_kumulativa_ietekme

WTG: 7 - NORDEX N163/6.X 7000 163.0 !OI hub: 169,0 m (TOT: 250,5 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	07:18 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	07:20 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	07:22 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	07:24 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	07:21 16:44	07:27 16:44	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)	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_Nordex_N163_Stelpe1_kumulativa_ietekme

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Laura Kurzemniece / laura.kurzemniece@environment.lv

Calculated:

07.04.2025 13:03/4.1.254

SHADOW - Calendar per WTG

Calculation: Flickering_Nordex_N163_kumulativa_ietekme WTG: 7 - Siemens Gamesa SG 6.6-170 6600 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (27)

Assumptions for shadow calculations

Sunshine probability 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	08:58 15:53	08:22 16:51	07:17 17:53	06:55 19:59	05:38 21:02	04:41 22:00	04:35 22:16	05:21 21:35	06:23 20:20	07:23 19:00	07:29 16:41	08:31 15:50
2	08:58 15:54	08:20 16:53	07:15 17:56	06:52 20:01	05:36 21:04	04:40 22:01	04:36 22:16	05:23 21:33	06:25 20:18	07:25 18:57	07:31 16:39	08:33 15:49
3	08:57 15:56	08:18 16:55	07:12 17:58	06:49 20:03	05:33 21:06	04:38 22:03	04:36 22:15	05:25 21:31	06:27 20:15	07:28 18:54	07:34 16:37	08:35 15:48
4	08:57 15:57	08:16 16:57	07:09 18:00	06:47 20:06	05:31 21:08	04:37 22:04	04:37 22:15	05:27 21:29	06:29 20:12	07:30 18:52	07:36 16:35	08:36 15:47
5	08:57 15:58	08:14 17:00	07:07 18:02	06:44 20:08	05:29 21:10	04:36 22:05	04:38 22:14	05:29 21:26	06:31 20:10	07:32 18:49	07:38 16:33	08:38 15:47
6	08:56 16:00	08:11 17:02	07:04 18:04	06:41 20:10	05:26 21:13	04:36 22:06	04:39 22:13	05:31 21:24	06:33 20:07	07:34 18:46	07:40 16:31	08:39 15:46
7	08:55 16:01	08:09 17:04	07:02 18:06	06:39 20:12	05:24 21:15	04:35 22:08	04:41 22:12	05:33 21:22	06:35 20:04	07:36 18:44	07:42 16:28	08:41 15:45
8	08:55 16:03	08:07 17:06	06:59 18:09	06:36 20:14	05:22 21:17	04:34 22:09	04:42 22:12	05:35 21:20	06:37 20:02	07:38 18:41	07:45 16:26	08:42 15:45
9	08:54 16:04	08:05 17:09	06:56 18:11	06:33 20:16	05:20 21:19	04:33 22:10	04:43 22:11	05:37 21:18	06:39 19:59	07:40 18:38	07:47 16:24	08:44 15:44
10	08:53 16:06	08:03 17:11	06:54 18:13	06:31 20:18	05:18 21:21	04:33 22:11	04:44 22:10	05:39 21:15	06:41 19:56	07:42 18:36	07:49 16:22	08:45 15:44
11	08:52 16:08	08:01 17:13	06:51 18:15	06:28 20:20	05:16 21:23	04:32 22:12	04:45 22:09	05:41 21:13	06:43 19:54	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 21:25	04:32 22:12	04:47 22:07	05:43 21:11	06:45 19:51	07:46 18:30	07:53 16:18	08:48 15:43
13	08:50 16:11	07:56 17:18	06:46 18:19	06:23 20:24	05:12 21:27	04:31 22:13	04:48 22:06	05:45 21:08	06:47 19:48	07:48 18:28	07:55 16:17	08:49 15:43
14	08:49 16:13	07:54 17:20	06:43 18:21	06:20 20:27	05:10 21:29	04:31 22:14	04:50 22:05	05:47 21:06	06:49 19:46	07:50 18:25	07:58 16:15	08:50 15:43
15	08:48 16:15	07:51 17:22	06:40 18:24	06:18 20:29	05:08 21:31	04:30 22:15	04:51 22:04	05:49 21:03	06:51 19:43	07:52 18:23	08:00 16:13	08:51 15:43
16	08:47 16:17	07:49 17:24	06:38 18:26	06:15 20:31	05:06 21:33	04:30 22:15	04:53 22:02	05:51 21:01	06:53 19:40	07:55 18:20	08:02 16:11	08:52 15:43
17	08:46 16:19	07:47 17:27	06:35 18:28	06:12 20:33	05:04 21:34	04:30 22:16	04:54 22:01	05:53 20:59	06:55 19:37	07:57 18:18	08:04 16:09	08:53 15:43
18	08:45 16:21	07:44 17:29	06:32 18:30	06:10 20:35	05:02 21:36	04:30 22:16	04:56 22:00	05:55 20:56	06:57 19:35	07:59 18:15	08:06 16:08	08:54 15:43
19	08:43 16:23	07:42 17:31	06:30 18:32	06:07 20:37	05:00 21:38	04:30 22:17	04:57 21:58	05:57 20:54	06:59 19:32	08:01 18:13	08:08 16:06	08:54 15:43
20	08:42 16:25	07:40 17:33	06:27 18:34	06:05 20:39	04:58 21:40	04:30 22:17	04:59 21:57	05:59 20:51	07:01 19:29	08:03 18:10	08:10 16:04	08:55 15:43
21	08:40 16:27	07:37 17:36	06:24 18:36	06:02 20:41	04:57 21:42	04:30 22:17	05:01 21:55	06:01 20:49	07:03 19:27	08:05 18:08	08:12 16:03	08:56 15:44
22	08:39 16:29	07:35 17:38	06:22 18:38	06:00 20:43	04:55 21:44	04:30 22:18	05:02 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	04:30 22:18	05:04 21:52	06:05 20:44	07:07 19:21	08:10 18:03	08:16 16:00	08:57 15:45
24	08:36 16:33	07:30 17:42	06:16 18:43	05:55 20:48	04:52 21:47	04:31 22:18	05:06 21:50	06:07 20:41	07:09 19:18	08:12 18:00	08:18 15:58	08:57 15:45
25	08:34 16:35	07:27 17:45	06:13 18:45	05:52 20:50	04:50 21:49	04:31 22:18	05:08 21:48	06:09 20:39	07:11 19:16	07:14 16:58	08:20 15:57	08:58 15:46
26	08:32 16:37	07:25 17:47	06:11 18:47	05:50 20:52	04:49 21:51	04:32 22:18	05:10 21:46	06:11 20:36	07:13 19:13	07:16 16:55	08:22 15:56	08:58 15:47
27	08:31 16:40	07:22 17:49	06:08 18:49	05:47 20:54	04:47 21:52	04:32 22:18	05:11 21:45	06:13 20:33	07:15 19:10	07:18 16:53	08:24 15:54	08:58 15:48
28	08:29 16:42	07:20 17:51	06:05 18:51	05:45 20:56	04:46 21:54	04:33 22:17	05:13 21:43	06:15 20:31	07:17 19:08	07:20 16:51	08:26 15:53	08:58 15:49
29	08:27 16:44		07:03 19:53	05:43 20:58	04:44 21:55	04:33 22:17	05:15 21:41	06:17 20:28	07:19 19:05	07:23 16:48	08:28 15:52	08:58 15:49
30	08:25 16:46		07:00 19:55	05:40 21:00	04:43 21:57	04:34 22:17	05:17 21:39	06:19 20:26	07:21 19:02	07:25 16:46	08:30 15:51	08:58 15:50
31	08:23 16:48		06:57 19:57		04:42 21:58		05:19 21:37	06:21 20:23		07:27 16:44		08:58 15:52
Potential sun hours	234	266	366	427	509	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)	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_N163_Stelpe1_kumulativa_ietekme

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Laura Kurzemniece / laura.kurzemniece@environment.lv

Calculated:

07.04.2025 13:03/4.1.254

SHADOW - Calendar per WTG

Calculation: Flickering_Nordex_N163_kumulativa_ietekme WTG: 8 - NORDEX N163/6.X 7000 163.0 !O! hub: 169,0 m (TOT: 250,5 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 11:51-12:36/45	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 11:38-12:22/44
2	15:53 11:52-12:37/45	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 11:39-12:23/44
3	08:57 11:52-12:37/45	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 11:38-12:23/45
4	15:56 11:52-12:37/45	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 11:39-12:23/44
5	15:57 11:53-12:38/45	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	07:38 16:32	08:37 11:39-12:24/45
6	15:58 11:54-12:39/45	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 11:40-12:25/45
7	16:00 11:54-12:39/45	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 21:22	06:35 20:04	07:35 18:43	07:42 16:28	08:40 11:39-12:24/45
8	16:01 11:54-12:39/45	08:07 17:06	06:59 18:08	06:36 20:14	05:22 21:16	04:34 22:08	04:42 22:11	05:34 21:19	06:37 20:01	07:37 18:41	07:44 16:26	08:42 11:40-12:25/45
9	16:03 11:55-12:39/44	08:05 17:08	06:56 18:10	06:33 20:16	05:20 21:18	04:33 22:09	04:43 22:10	05:36 21:17	06:39 20:04	07:40 18:38	07:46 16:24	08:43 11:40-12:25/45
10	16:04 11:56-12:40/44	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 20:01	07:42 18:35	07:48 16:22	08:45 11:41-12:26/45
11	16:06 11:56-12:40/44	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 20:04	07:44 18:33	07:51 16:20	08:46 11:41-12:26/45
12	16:08 11:56-12:40/44	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 20:01	07:46 18:30	07:53 16:18	08:47 11:42-12:27/45
13	16:09 11:57-12:40/43	07:56 17:17	06:45 18:19	06:23 20:24	05:12 21:26	04:31 22:13	04:48 22:06	05:44 21:08	06:47 20:01	07:48 18:28	07:55 16:16	08:48 11:42-12:28/46
14	16:11 11:58-12:41/43	07:53 17:20	06:43 18:21	06:20 20:26	05:10 21:28	04:31 22:13	04:50 22:05	05:46 21:05	06:49 20:04	07:50 18:25	07:57 16:15	08:49 11:43-12:28/45
15	16:13 11:58-12:40/42	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 20:04	07:52 18:22	07:59 16:13	08:50 11:43-12:28/45
16	16:15 11:59-12:41/42	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 20:04	07:54 18:20	08:01 16:11	08:51 11:44-12:29/45
17	16:17 11:59-12:40/41	07:46 17:26	06:35 18:27	06:12 20:32	05:04 21:34	04:30 22:15	04:54 22:01	05:52 21:08	06:55 20:05	07:56 18:17	08:03 16:09	08:52 11:44-12:29/45
18	16:19 12:01-12:41/40	07:44 17:29	06:32 18:30	06:10 20:35	05:02 21:36	04:30 22:16	04:56 21:59	05:54 20:56	06:57 20:06	07:58 18:15	08:06 16:07	08:53 11:45-12:30/45
19	16:21 12:01-12:40/39	07:42 17:31	06:29 18:32	06:07 20:37	05:00 21:38	04:30 22:16	04:57 21:58	05:57 20:53	06:59 20:07	08:01 18:12	08:08 16:06	08:54 11:46-12:30/44
20	16:23 12:02-12:40/38	07:39 17:33	06:27 18:34	06:05 20:39	04:58 21:39	04:30 22:17	04:59 21:56	05:59 20:51	07:01 20:09	08:03 18:10	08:10 16:04	08:55 11:45-12:30/45
21	16:25 12:03-12:40/37	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 20:07	08:05 18:07	08:12 16:03	08:55 11:46-12:31/45
22	16:27 12:04-12:39/35	07:34 17:38	06:21 18:38	06:00 20:43	04:55 21:43	04:30 22:17	05:02 21:53	06:03 20:46	07:05 20:07	08:07 18:05	08:14 16:01	08:56 11:46-12:31/45
23	16:29 12:05-12:38/33	07:32 17:40	06:19 18:40	05:57 20:45	04:53 21:45	04:30 22:17	05:04 21:51	06:05 20:43	07:07 20:09	08:09 18:02	08:16 16:00	08:56 11:47-12:32/45
24	16:31 12:06-12:38/32	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 20:11	08:11 18:00	08:18 16:58	08:57 11:47-12:32/45
25	16:33 12:08-12:37/29	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 20:15	08:13 18:02	08:20 16:58	08:57 11:48-12:33/45
26	16:35 12:09-12:35/26	07:24 17:46	06:10 18:46	05:50 20:51	04:49 21:50	04:32 22:17	05:09 21:46	06:11 20:36	07:13 20:13	08:15 18:00	08:22 16:55	08:57 11:48-12:33/45
27	16:37 12:11-12:34/23	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 20:10	08:17 18:00	08:23 16:55	08:57 11:48-12:33/45
28	16:39 12:14-12:32/18	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 20:07	08:19 18:00	08:25 16:50	08:58 11:49-12:34/45
29	16:42 12:18-12:28/10	07:17 17:53	06:02 18:53	05:42 20:58	04:44 21:55	04:33 22:17	05:15 21:40	06:17 20:28	07:19 20:09	08:21 18:00	08:27 16:52	08:58 11:50-12:35/45
30	16:44 08:25	07:15 17:53	06:00 18:53	05:40 20:58	04:43 21:55	04:34 22:17	05:17 21:40	06:19 20:28	07:21 20:09	08:23 18:00	08:29 16:52	08:58 11:50-12:35/45
31	16:46 08:23	07:13 17:51	05:58 18:51	05:38 21:00	04:43 21:56	04:34 22:16	05:19 21:38	06:21 20:25	07:23 20:10	08:25 18:00	08:31 16:50	08:58 11:51-12:36/45
	16:48	07:11 17:49	05:56 18:49	05:36 20:58	04:42 21:58	04:34 22:16	05:19 21:38	06:21 20:25	07:23 20:10	08:25 18:00	08:31 16:50	08:58 11:51-12:36/45
Potential sun hours	235	266	366	426	508	530	530	470	385	323	247	215
Sum of minutes with flicker	1107	0	0	0	0	0	0	0	0	0	615	1392

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_N163_Stelpe1_kumulativa_ietekme

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Laura Kurzemniece / laura.kurzemniece@environment.lv

Calculated:

07.04.2025 13:03/4.1.254

SHADOW - Calendar per WTG

Calculation: Flickering_Nordex_N163_kumulativa_ietekme WTG: 8 - Siemens Gamesa SG 6.6-170 6600 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (28)

Assumptions for shadow calculations

Sunshine probability 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	08:58 15:53	08:21 16:50	07:17 17:53	06:55 19:59	05:38 21:02	04:41 22:00	04:35 22:16	05:21 21:35	06:23 20:20	07:23 19:00	07:29 16:41	08:31 15:50
2	08:58 15:54	08:20 16:53	07:14 17:55	06:52 20:01	05:35 21:04	04:39 22:01	04:35 22:16	05:23 21:33	06:25 20:18	07:25 18:57	07:31 16:39	08:33 15:49
3	08:57 15:55	08:18 16:55	07:12 17:58	06:49 20:03	05:33 21:06	04:38 22:03	04:36 22:15	05:25 21:31	06:27 20:15	07:27 18:54	07:34 16:37	08:35 15:48
4	08:57 15:57	08:16 16:57	07:09 18:00	06:46 20:06	05:31 21:08	04:37 22:04	04:37 22:15	05:27 21:29	06:29 20:12	07:30 18:51	07:36 16:35	08:36 15:47
5	08:56 15:58	08:13 16:59	07:07 18:02	06:44 20:08	05:29 21:10	04:36 22:05	04:38 22:14	05:29 21:26	06:31 20:10	07:32 18:49	07:38 16:33	08:38 15:46
6	08:56 16:00	08:11 17:02	07:04 18:04	06:41 20:10	05:26 21:13	04:35 22:06	04:39 22:13	05:30 21:24	06:33 20:07	07:34 18:46	07:40 16:30	08:39 15:46
7	08:55 16:01	08:09 17:04	07:01 18:06	06:39 20:12	05:24 21:15	04:35 22:08	04:40 22:12	05:32 21:22	06:35 20:04	07:36 18:43	07:42 16:28	08:41 15:45
8	08:55 16:03	08:07 17:06	06:59 18:08	06:36 20:14	05:22 21:17	04:34 22:09	04:42 22:12	05:34 21:20	06:37 20:02	07:38 18:41	07:45 16:26	08:42 15:45
9	08:54 16:04	08:05 17:09	06:56 18:11	06:33 20:16	05:20 21:19	04:33 22:10	04:43 22:11	05:36 21:17	06:39 19:59	07:40 18:38	07:47 16:24	08:44 15:44
10	08:53 16:06	08:03 17:11	06:54 18:13	06:31 20:18	05:18 21:21	04:33 22:11	04:44 22:10	05:38 21:15	06:41 19:56	07:42 18:36	07:49 16:22	08:45 15:44
11	08:52 16:08	08:01 17:13	06:51 18:15	06:28 20:20	05:16 21:23	04:32 22:12	04:45 22:09	05:40 21:13	06:43 19:54	07:44 18:33	07:51 16:20	08:46 15:43
12	08:51 16:09	07:58 17:15	06:48 18:17	06:25 20:22	05:14 21:25	04:31 22:12	04:47 22:07	05:42 21:11	06:45 19:51	07:46 18:30	07:53 16:18	08:48 15:43
13	08:50 16:11	07:56 17:18	06:46 18:19	06:23 20:24	05:12 21:27	04:31 22:13	04:48 22:06	05:44 21:08	06:47 19:48	07:48 18:28	07:55 16:16	08:49 15:43
14	08:49 16:13	07:54 17:20	06:43 18:21	06:20 20:26	05:10 21:29	04:31 22:14	04:50 22:05	05:47 21:06	06:49 19:46	07:50 18:25	07:58 16:15	08:50 15:43
15	08:48 16:15	07:51 17:22	06:40 18:23	06:17 20:29	05:08 21:31	04:30 22:15	04:51 22:04	05:49 21:03	06:51 19:43	07:52 18:23	08:00 16:13	08:51 15:43
16	08:47 16:17	07:49 17:24	06:38 18:26	06:15 20:31	05:06 21:32	04:30 22:15	04:53 22:02	05:51 21:01	06:53 19:40	07:55 18:20	08:02 16:11	08:52 15:43
17	08:46 16:19	07:47 17:27	06:35 18:28	06:12 20:33	05:04 21:34	04:30 22:16	04:54 22:01	05:53 20:59	06:55 19:37	07:57 18:18	08:04 16:09	08:53 15:43
18	08:44 16:21	07:44 17:29	06:32 18:30	06:10 20:35	05:02 21:36	04:30 22:16	04:56 22:00	05:55 20:56	06:57 19:35	07:59 18:15	08:06 16:08	08:54 15:43
19	08:43 16:23	07:42 17:31	06:30 18:32	06:07 20:37	05:00 21:38	04:30 22:17	05:02 21:58	05:57 20:54	06:59 19:32	08:01 18:12	08:08 16:06	08:54 15:43
20	08:42 16:25	07:40 17:33	06:27 18:34	06:05 20:39	04:58 21:40	04:30 22:17	04:59 21:57	05:59 20:51	07:01 19:29	08:03 18:10	08:10 16:04	08:55 15:43
21	08:40 16:27	07:37 17:36	06:24 18:36	06:02 20:41	04:57 21:42	04:30 22:17	05:01 21:55	06:01 20:49	07:03 19:27	08:05 18:07	08:12 16:03	08:56 15:44
22	08:39 16:29	07:35 17:38	06:21 18:38	06:00 20:43	04:55 21:44	04:30 22:18	05:02 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	04:30 22:18	05:04 21:52	06:05 20:44	07:07 19:21	08:10 18:03	08:16 16:00	08:57 15:45
24	08:36 16:33	07:30 17:42	06:16 18:42	05:55 20:47	04:52 21:47	04:31 22:18	05:06 21:50	06:07 20:41	07:09 19:18	08:12 18:00	08:18 15:58	08:57 15:45
25	08:34 16:35	07:27 17:44	06:13 18:45	05:52 20:50	04:50 21:49	04:31 22:18	05:08 21:48	06:09 20:39	07:11 19:16	07:14 16:58	08:20 15:57	08:58 15:46
26	08:32 16:37	07:25 17:47	06:11 18:47	05:50 20:52	04:49 21:51	04:31 22:18	05:09 21:46	06:11 20:36	07:13 19:13	07:16 16:55	08:22 15:56	08:58 15:47
27	08:31 16:39	07:22 17:49	06:08 18:49	05:47 20:54	04:47 21:52	04:32 22:18	05:11 21:45	06:13 20:33	07:15 19:10	07:18 16:53	08:24 15:54	08:58 15:48
28	08:29 16:42	07:20 17:51	06:05 18:51	05:45 20:56	04:46 21:54	04:33 22:17	05:13 21:43	06:15 20:31	07:17 19:08	07:20 16:51	08:26 15:53	08:58 15:48
29	08:27 16:44		07:03 19:53	05:43 20:58	04:44 21:55	04:33 22:17	05:15 21:41	06:17 20:28	07:19 19:05	07:23 16:48	08:28 15:52	08:58 15:49
30	08:25 16:46		07:00 19:55	05:40 21:00	04:43 21:57	04:34 22:17	05:17 21:39	06:19 20:26	07:21 19:02	07:25 16:46	08:30 15:51	08:58 15:50
31	08:23 16:48		06:57 19:57		04:42 21:58		05:19 21:37	06:21 20:23		07:27 16:44		08:58 15:51
Potential sun hours	234	266	366	427	509	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)	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_N163_Stelpe1_kumulativa_ietekme

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Laura Kurzemniece / laura.kurzemniece@environment.lv

Calculated:

07.04.2025 13:03/4.1.254

SHADOW - Calendar per WTG

Calculation: Flickering_Nordex_N163_kumulativa_ietekme WTG: 9 - NORDEX N163/6.X 7000 163.0 !OI hub: 169,0 m (TOT: 250,5 m) (22) 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	July	August	September	October	November	December
1	08:57 09:48-10:12/24 15:53	08:21 16:50 17:53	07:17 19:59 21:02	06:54 21:02 21:59	05:38 22:16 21:34	04:41 22:16 21:34	04:35 22:16 21:34	05:21 22:16 21:34	06:23 22:16 21:34	07:23 22:16 21:34	07:29 22:16 21:34	08:31 22:16 21:34
2	08:57 09:49-10:13/24 15:54	08:19 16:53 17:55	07:14 20:01 21:04	06:52 20:01 21:04	05:35 21:04 21:04	04:39 22:15 21:32	04:36 22:15 21:32	05:23 22:15 21:32	06:25 22:15 21:32	07:25 22:15 21:32	07:31 22:15 21:32	08:32 22:15 21:32
3	08:57 09:49-10:13/24 15:55	08:17 16:55 17:57	07:12 20:03 21:06	06:49 21:06 21:06	05:33 22:02 21:30	04:38 22:15 21:30	04:36 22:15 21:30	05:25 22:15 21:30	06:27 22:15 21:30	07:27 22:15 21:30	07:33 22:15 21:30	08:34 22:15 21:30
4	08:56 09:49-10:13/24 15:57	08:15 16:57 18:00	07:09 20:05 21:08	06:46 21:08 21:08	05:31 22:03 21:30	04:37 22:14 21:28	04:37 22:14 21:28	05:26 22:14 21:28	06:29 22:14 21:28	07:29 22:14 21:28	07:35 22:14 21:28	08:36 22:14 21:28
5	08:56 09:50-10:15/25 15:58	08:13 16:59 18:02	07:06 20:07 21:10	06:44 21:10 21:10	05:29 22:05 21:33	04:36 22:13 21:26	04:38 22:13 21:26	05:28 22:13 21:26	06:31 22:13 21:26	07:31 22:13 21:26	07:37 22:13 21:26	08:37 22:13 21:26
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14	08:49 09:51-10:20/29 16:13	07:53 17:20 18:21	06:43 20:26 21:28	06:20 21:28 21:28	05:09 22:13 21:34	04:31 22:04 21:05	04:50 22:04 21:05	05:46 22:04 21:05	06:49 22:04 21:05	07:50 22:04 21:05	07:57 22:04 21:05	08:49 22:04 21:05
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17	08:45 09:52-10:21/29 16:19	07:46 17:26 18:27	06:35 20:32 21:34	06:12 21:34 21:34	05:04 22:15 21:34	04:30 22:00 20:58	04:54 22:00 20:58	05:52 22:00 20:58	06:55 22:00 20:58	07:56 22:00 20:58	08:03 22:00 20:58	08:52 22:00 20:58
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21	08:40 09:55-10:22/27 16:27	07:37 17:35 18:36	06:24 20:41 21:41	06:02 21:41 21:41	04:57 22:17 21:34	04:30 22:05 21:09	05:01 22:05 21:09	06:01 22:05 21:09	07:03 22:05 21:09	08:05 22:05 21:09	08:12 22:05 21:09	08:55 22:05 21:09
22	08:38 09:55-10:21/26 16:29	07:34 17:38 18:38	06:21 20:43 21:43	05:59 21:43 21:43	04:55 22:17 21:34	04:30 22:04 21:09	05:02 22:04 21:09	06:03 22:04 21:09	07:05 22:04 21:09	08:07 22:04 21:09	08:14 22:04 21:09	08:56 22:04 21:09
23	08:37 09:56-10:21/25 16:31	07:32 17:40 18:40	06:18 20:45 21:45	05:57 21:45 21:45	04:53 22:17 21:34	04:30 22:03 21:09	05:04 22:03 21:09	06:05 22:03 21:09	07:07 22:03 21:09	08:09 22:03 21:09	08:16 22:03 21:09	08:56 22:03 21:09
24	08:35 09:56-10:20/24 16:33	07:29 17:42 18:42	06:16 20:47 21:47	05:55 21:47 21:47	04:52 22:17 21:34	04:31 22:02 21:09	05:06 22:02 21:09	06:07 22:02 21:09	07:09 22:02 21:09	08:11 22:02 21:09	08:18 22:02 21:09	08:57 22:02 21:09
25	08:34 09:57-10:20/23 16:35	07:27 17:44 18:44	06:13 20:49 21:48	05:52 21:48 21:48	04:50 22:17 21:34	04:31 22:01 21:09	05:08 22:01 21:09	06:09 22:01 21:09	07:11 22:01 21:09	08:13 22:01 21:09	08:20 22:01 21:09	08:57 22:01 21:09
26	08:32 09:58-10:19/21 16:37	07:24 17:46 18:46	06:10 20:51 21:50	05:50 21:50 21:50	04:49 22:17 21:34	04:31 22:00 21:09	05:09 22:00 21:09	06:11 22:00 21:09	07:13 22:00 21:09	08:15 22:00 21:09	08:22 22:00 21:09	08:57 22:00 21:09
27	08:30 10:00-10:18/18 16:39	07:22 17:49 18:48	06:08 20:53 21:52	05:47 21:52 21:52	04:47 22:17 21:34	04:32 22:00 21:09	05:11 22:00 21:09	06:13 22:00 21:09	07:15 22:00 21:09	08:17 22:00 21:09	08:23 22:00 21:09	08:57 22:00 21:09
28	08:28 10:02-10:17/15 16:42	07:19 17:51 18:50	06:05 20:55 21:53	05:45 21:53 21:53	04:46 22:17 21:34	04:33 22:00 21:09	05:13 22:00 21:09	06:15 22:00 21:09	07:17 22:00 21:09	08:19 22:00 21:09	08:25 22:00 21:09	08:58 22:00 21:09
29	08:27 10:04-10:15/11 16:44	07:17 19:53 20:57	06:02 20:57 21:55	05:42 21:55 21:55	04:44 22:16 21:34	04:33 22:00 21:09	05:15 22:00 21:09	06:17 22:00 21:09	07:19 22:00 21:09	08:21 22:00 21:09	08:27 22:00 21:09	08:58 22:00 21:09
30	08:25 16:46 16:48	07:00 19:55 21:00	05:40 21:00 21:00	04:43 21:00 21:00	04:43 22:16 21:34	04:34 22:00 21:09	05:17 22:00 21:09	06:19 22:00 21:09	07:21 22:00 21:09	08:23 22:00 21:09	08:29 22:00 21:09	08:58 22:00 21:09
31	08:23 16:48	06:57 19:57 21:01	05:38 21:01 21:01	04:42 21:01 21:01	04:42 22:16 21:34	04:34 22:00 21:09	05:19 22:00 21:09	06:21 22:00 21:09	07:23 22:00 21:09	08:25 22:00 21:09	08:31 22:00 21:09	08:57 22:00 21:09
Potential sun hours	235	266	366	426	508	530	530	470	385	323	247	215
Sum of minutes with flicker	728	0	0	0	0	0	0	0	0	0	447	700

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_N163_Stelpe1_kumulativa_ietekme

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Laura Kurzemniece / laura.kurzemniece@environment.lv

Calculated:

07.04.2025 13:03/4.1.254

SHADOW - Calendar per WTG

Calculation: Flickering_Nordex_N163_kumulativa_ietekme WTG: 9 - Siemens Gamesa SG 6.6-170 6600 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (25)

Assumptions for shadow calculations

Sunshine probability 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	08:58 15:53	08:22 16:51	07:17 17:53	06:55 19:59	05:38 21:02	04:41 22:00	04:35 22:16	05:21 21:35	06:23 20:20	07:23 19:00	07:29 16:41	08:31 15:50
2	08:58 15:54	08:20 16:53	07:15 17:55	06:52 20:01	05:36 21:04	04:39 22:01	04:35 22:16	05:23 21:33	06:25 20:18	07:25 18:57	07:31 16:39	08:33 15:49
3	08:57 15:55	08:18 16:55	07:12 17:58	06:49 20:03	05:33 21:06	04:38 22:03	04:36 22:15	05:25 21:31	06:27 20:15	07:28 18:54	07:34 16:37	08:35 15:48
4	08:57 15:57	08:16 16:57	07:09 18:00	06:47 20:06	05:31 21:08	04:37 22:04	04:37 22:15	05:27 21:29	06:29 20:12	07:30 18:52	07:36 16:35	08:36 15:47
5	08:57 15:58	08:14 16:59	07:07 18:02	06:44 20:08	05:29 21:11	04:36 22:05	04:38 22:14	05:29 21:26	06:31 20:10	07:32 18:49	07:38 16:33	08:38 15:46
6	08:56 16:00	08:11 17:02	07:04 18:04	06:41 20:10	05:26 21:13	04:36 22:06	04:39 22:13	05:31 21:24	06:33 20:07	07:34 18:46	07:40 16:30	08:40 15:46
7	08:55 16:01	08:09 17:04	07:02 18:06	06:39 20:12	05:24 21:15	04:35 22:08	04:40 22:13	05:33 21:22	06:35 20:04	07:36 18:44	07:42 16:28	08:41 15:45
8	08:55 16:03	08:07 17:06	06:59 18:09	06:36 20:14	05:22 21:17	04:34 22:09	04:42 22:12	05:34 21:20	06:37 20:02	07:38 18:41	07:45 16:26	08:42 15:45
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13	08:50 16:11	07:56 17:18	06:46 18:19	06:23 20:24	05:12 21:27	04:31 22:13	04:48 22:06	05:45 21:08	06:47 19:48	07:48 18:28	07:55 16:16	08:49 15:43
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18	08:45 16:21	07:44 17:29	06:32 18:30	06:10 20:35	05:02 21:36	04:30 22:16	04:56 22:00	05:55 20:56	06:57 19:35	07:59 18:15	08:06 16:08	08:54 15:43
19	08:43 16:23	07:42 17:31	06:30 18:32	06:07 20:37	05:00 21:38	04:30 22:17	04:57 21:58	05:57 20:54	06:59 19:32	08:01 18:13	08:08 16:06	08:55 15:43
20	08:42 16:25	07:40 17:33	06:27 18:34	06:05 20:39	04:58 21:40	04:30 22:17	04:59 21:57	05:59 20:51	07:01 19:29	08:03 18:10	08:10 16:04	08:55 15:43
21	08:40 16:27	07:37 17:36	06:24 18:36	06:02 20:41	04:57 21:42	04:30 22:18	05:01 21:55	06:01 20:49	07:03 19:27	08:05 18:08	08:12 16:03	08:56 15:44
22	08:39 16:29	07:35 17:38	06:22 18:38	06:00 20:43	04:55 21:44	04:30 22:18	05:02 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	04:30 22:18	05:04 21:52	06:05 20:44	07:07 19:21	08:10 18:03	08:16 16:00	08:57 15:45
24	08:36 16:33	07:30 17:42	06:16 18:43	05:55 20:48	04:52 21:47	04:31 22:18	05:06 21:50	06:07 20:41	07:09 19:18	08:12 18:00	08:18 15:58	08:57 15:45
25	08:34 16:35	07:27 17:44	06:13 18:45	05:52 20:50	04:50 21:49	04:31 22:18	05:08 21:48	06:09 20:39	07:11 19:16	07:14 16:58	08:20 15:57	08:58 15:46
26	08:32 16:37	07:25 17:47	06:11 18:47	05:50 20:52	04:49 21:51	04:31 22:18	05:09 21:46	06:11 20:36	07:13 19:13	07:16 16:55	08:22 15:56	08:58 15:47
27	08:31 16:39	07:22 17:49	06:08 18:49	05:47 20:54	04:47 21:52	04:32 22:18	05:11 21:45	06:13 20:33	07:15 19:10	07:18 16:53	08:24 15:54	08:58 15:48
28	08:29 16:42	07:20 17:51	06:05 18:51	05:45 20:56	04:46 21:54	04:33 22:18	05:13 21:43	06:15 20:31	07:17 19:08	07:20 16:51	08:26 15:53	08:58 15:48
29	08:27 16:44		07:03 19:53	05:43 20:58	04:44 21:55	04:33 22:17	05:15 21:41	06:17 20:28	07:19 19:05	07:23 16:48	08:28 15:52	08:58 15:49
30	08:25 16:46		07:00 19:55	05:40 21:00	04:43 21:57	04:34 22:17	05:17 21:39	06:19 20:26	07:21 19:02	07:25 16:46	08:30 15:51	08:58 15:50
31	08:23 16:48		06:57 19:57		04:42 21:58		05:19 21:37	06:21 20:23		07:27 16:44		08:58 15:51
Potential sun hours	234	266	366	427	509	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)	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_N163_Stelpe1_kumulativa_ietekme

Licensed user:

SIA Estonian, Latvian & Lithuanian environment
Vilandes 3-6
LV-1010 Riga
0037167242411
Laura Kurzemniece / laura.kurzemniece@environment.lv
Calculated:
07.04.2025 13:03/4.1.254

SHADOW - Calendar per WTG

Calculation: Flickering_Nordex_N163_kumulativa_ietekme WTG: 10 - NORDEX N163/6.X 7000 163.0 !O! hub: 169,0 m (TOT: 250,5 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	July	August	September	October	November	December
1	08:57 15:53	08:21 16:50	07:17 08:58-09:28/30 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 08:27-09:01/34 16:41	08:31 15:50
2	08:57 15:54	08:19 16:53	07:14 08:59-09:26/27 17:55	06:52 20:01	05:35 21:04	04:39 22:01	04:35 22:15	05:23 21:32	06:25 20:17	07:25 18:57	07:31 08:29-09:00/31 16:39	08:32 15:49
3	08:57 15:55	08:17 16:55	07:12 09:01-09:24/23 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 08:30-08:59/29 16:37	08:34 15:48
4	08:56 15:57	08:15 09:09-09:19/10 16:57	07:09 09:04-09:20/16 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 08:31-08:57/26 16:35	08:36 15:47
5	08:56 15:58	08:13 09:06-09:23/17 16:59	07:06 09:09-09:14/5 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 08:33-08:55/22 16:32	08:37 15:46
6	08:55 16:00	08:11 09:04-09:26/22 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 08:36-08:53/17 16:30	08:39 15:46
7	08:55 16:01	08:09 09:01-09:27/26 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 08:40-08:49/9 16:28	08:40 15:45
8	08:54 16:03	08:07 09:00-09:29/29 17:06	06:59 18:08	06:36 20:14	05:22 21:16	04:34 22:08	04:42 22:11	05:34 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 08:59-09:31/32 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 09:41-09:53/12 18:38	07:46 16:24	08:43 15:44
10	08:53 16:06	08:02 08:57-09:32/35 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 09:37-09:57/20 18:35	07:48 16:22	08:45 15:44
11	08:52 16:08	08:00 08:57-09:33/36 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 09:34-09:59/25 18:33	07:51 16:20	08:46 15:43
12	08:51 16:09	07:58 08:57-09:34/37 17:15	06:48 18:17	06:25 20:22	05:13 21:24	04:31 22:12	04:47 22:07	05:42 21:10	06:45 19:51	07:46 09:32-10:01/29 18:30	07:53 16:18	08:47 15:43
13	08:50 16:11	07:56 08:55-09:34/39 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 09:30-10:02/32 18:28	07:55 16:16	08:48 10:44-10:46/2 15:43
14	08:49 16:13	07:53 08:55-09:35/40 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 09:29-10:04/35 18:25	07:57 16:14	08:49 10:43-10:48/5 15:43
15	08:48 16:15	07:51 08:54-09:35/41 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 09:28-10:04/36 18:22	07:59 16:13	08:50 10:42-10:50/8 15:43
16	08:46 16:17	07:49 08:54-09:36/42 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 09:27-10:05/38 18:20	08:01 16:11	08:51 10:42-10:51/9 15:43
17	08:45 16:19	07:46 08:53-09:36/43 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 09:26-10:05/39 18:17	08:03 16:09	08:52 10:42-10:52/10 15:43
18	08:44 16:21	07:44 08:54-09:36/42 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 09:25-10:05/40 18:15	08:05 16:07	08:53 10:42-10:53/11 15:43
19	08:43 16:23	07:42 08:53-09:36/43 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 09:25-10:06/41 18:12	08:08 16:06	08:54 10:43-10:54/11 15:43
20	08:41 16:25	07:39 08:54-09:36/42 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 09:24-10:06/42 18:10	08:10 16:04	08:55 10:43-10:54/11 15:43
21	08:40 16:27	07:37 08:53-09:36/43 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 09:23-10:06/43 18:07	08:12 16:03	08:55 10:43-10:54/11 15:44
22	08:38 16:29	07:34 08:53-09:35/42 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 09:24-10:07/43 18:05	08:14 16:01	08:56 10:43-10:54/11 15:44
23	08:37 16:31	07:32 08:54-09:35/41 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 09:23-10:06/43 18:02	08:16 16:00	08:56 10:45-10:55/10 15:45
24	08:35 16:33	07:29 08:54-09:34/40 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 09:23-10:06/43 18:00	08:18 15:58	08:57 10:45-10:56/11 15:45
25	08:34 16:35	07:27 08:55-09:34/39 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 08:24-09:06/42 18:00	08:20 15:57	08:57 10:45-10:56/11 15:46
26	08:32 16:37	07:24 08:55-09:32/37 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 08:24-09:05/41 18:00	08:22 15:56	08:57 10:46-10:56/10 15:47
27	08:30 16:39	07:22 08:55-09:31/36 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 08:24-09:05/41 18:00	08:23 15:54	08:57 10:47-10:56/9 15:48
28	08:28 16:42	07:19 08:57-09:30/33 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	07:20 08:25-09:05/40 18:00	08:25 15:53	08:58 10:48-10:56/8 15:48
29	08:27 16:44		07:02 19:53	05:42 20:58	04:44 21:55	04:33 22:17	05:15 21:40	06:17 20:28	07:19 19:05	07:22 08:25-09:04/39 18:00	08:27 15:52	08:58 10:49-10:55/6 15:49
30	08:25 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 08:25-09:03/38 18:00	08:29 15:51	08:58 10:51-10:55/4 15:50
31	08:23 16:48		06:57 19:57		04:42 21:58		05:19 21:36	06:21 20:23		07:27 08:27-09:02/35 18:00		08:58 15:51
Potential sun hours	235	266	366	426	508	530	530	470	385	323	247	158
Sum of minutes with flicker	0	887	101	0	0	0	0	0	0	837	168	

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_N163_Stelpe1_kumulativa_ietekme

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Laura Kurzemniece / laura.kurzemniece@environment.lv

Calculated:

07.04.2025 13:03/4.1.254

SHADOW - Calendar per WTG

Calculation: Flickering_Nordex_N163_kumulativa_ietekme WTG: 10 - Siemens Gamesa SG 6.6-170 6600 170.0 !O! hub: 165,0 m (TOT: 250,0 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	6,63	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	08:58 15:53	08:22 16:50	07:17 17:53	06:55 19:59	05:38 21:02	04:41 22:00	04:35 22:16	05:21 21:35	06:23 20:20	07:23 19:00	07:29 16:41	08:31 15:50
2	08:58 15:54	08:20 16:53	07:15 17:55	06:52 20:01	05:35 21:04	04:39 22:01	04:35 22:16	05:23 21:33	06:25 20:18	07:25 18:57	07:31 16:39	08:33 15:49
3	08:57 15:55	08:18 16:55	07:12 17:58	06:49 20:03	05:33 21:06	04:38 22:03	04:36 22:15	05:25 21:31	06:27 20:15	07:28 18:54	07:34 16:37	08:35 15:48
4	08:57 15:57	08:16 16:57	07:09 18:00	06:47 20:06	05:31 21:08	04:37 22:04	04:37 22:15	05:27 21:29	06:29 20:12	07:30 18:51	07:36 16:35	08:36 15:47
5	08:57 15:58	08:14 16:59	07:07 18:02	06:44 20:08	05:29 21:11	04:36 22:05	04:38 22:14	05:28 21:26	06:31 20:10	07:32 18:49	07:38 16:33	08:38 15:46
6	08:56 16:00	08:11 17:02	07:04 18:04	06:41 20:10	05:26 21:13	04:35 22:07	04:39 22:13	05:30 21:24	06:33 20:07	07:34 18:46	07:40 16:30	08:40 15:46
7	08:55 16:01	08:09 17:04	07:02 18:06	06:39 20:12	05:24 21:15	04:35 22:08	04:40 22:13	05:32 21:22	06:35 20:04	07:36 18:44	07:42 16:28	08:41 15:45
8	08:55 16:03	08:07 17:06	06:59 18:08	06:36 20:14	05:22 21:17	04:34 22:09	04:42 22:12	05:34 21:20	06:37 20:02	07:38 18:41	07:45 16:26	08:43 15:45
9	08:54 16:04	08:05 17:08	06:56 18:11	06:33 20:16	05:20 21:19	04:33 22:10	04:43 22:11	05:36 21:18	06:39 19:59	07:40 18:38	07:47 16:24	08:44 15:44
10	08:53 16:06	08:03 17:11	06:54 18:13	06:31 20:18	05:18 21:21	04:32 22:11	04:44 22:10	05:38 21:15	06:41 19:56	07:42 18:36	07:49 16:22	08:45 15:44
11	08:52 16:08	08:01 17:13	06:51 18:15	06:28 20:20	05:16 21:23	04:32 22:12	04:45 22:09	05:40 21:13	06:43 19:54	07:44 18:33	07:51 16:20	08:47 15:43
12	08:51 16:09	07:58 17:15	06:48 18:17	06:25 20:22	05:14 21:25	04:31 22:13	04:47 22:08	05:42 21:11	06:45 19:51	07:46 18:30	07:53 16:18	08:48 15:43
13	08:50 16:11	07:56 17:18	06:46 18:19	06:23 20:24	05:12 21:27	04:31 22:13	04:48 22:06	05:44 21:08	06:47 19:48	07:48 18:28	07:55 16:16	08:49 15:43
14	08:49 16:13	07:54 17:20	06:43 18:21	06:20 20:27	05:10 21:29	04:31 22:14	04:50 22:05	05:46 21:06	06:49 19:46	07:50 18:25	07:58 16:15	08:50 15:43
15	08:48 16:15	07:52 17:22	06:40 18:23	06:17 20:29	05:08 21:31	04:30 22:15	04:51 22:04	05:49 21:04	06:51 19:43	07:52 18:23	08:00 16:13	08:51 15:43
16	08:47 16:17	07:49 17:24	06:38 18:26	06:15 20:31	05:06 21:33	04:30 22:15	04:53 22:03	05:51 21:01	06:53 19:40	07:55 18:20	08:02 16:11	08:52 15:43
17	08:46 16:19	07:47 17:27	06:35 18:28	06:12 20:33	05:04 21:34	04:30 22:16	04:54 22:01	05:53 20:59	06:55 19:37	07:57 18:18	08:04 16:09	08:53 15:43
18	08:45 16:21	07:44 17:29	06:32 18:30	06:10 20:35	05:02 21:36	04:30 22:16	04:56 22:00	05:55 20:56	06:57 19:35	07:59 18:15	08:06 16:07	08:54 15:43
19	08:43 16:23	07:42 17:31	06:30 18:32	06:07 20:37	05:00 21:38	04:30 22:17	04:57 21:58	05:57 20:54	06:59 19:32	08:01 18:12	08:08 16:06	08:55 15:43
20	08:42 16:25	07:40 17:33	06:27 18:34	06:05 20:39	04:58 21:40	04:30 22:17	04:59 21:57	05:59 20:51	07:01 19:29	08:03 18:10	08:10 16:04	08:55 15:43
21	08:40 16:27	07:37 17:36	06:24 18:36	06:02 20:41	04:57 21:42	04:30 22:18	05:01 21:55	06:01 20:49	07:03 19:27	08:05 18:07	08:12 16:03	08:56 15:44
22	08:39 16:29	07:35 17:38	06:21 18:38	06:00 20:43	04:55 21:44	04:30 22:18	05:02 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	04:30 22:18	05:04 21:52	06:05 20:44	07:07 19:21	08:10 18:03	08:16 16:00	08:57 15:45
24	08:36 16:33	07:30 17:42	06:16 18:42	05:55 20:48	04:52 21:47	04:31 22:18	05:06 21:50	06:07 20:41	07:09 19:18	08:12 18:00	08:18 15:58	08:57 15:45
25	08:34 16:35	07:27 17:44	06:13 18:45	05:52 20:50	05:52 21:49	04:31 22:18	05:08 21:48	06:09 20:39	07:11 19:16	07:14 16:58	08:20 15:57	08:58 15:46
26	08:32 16:37	07:25 17:47	06:11 18:47	05:50 20:52	04:49 21:51	04:31 22:18	05:09 21:46	06:11 20:36	07:13 19:13	07:16 16:55	08:22 15:56	08:58 15:47
27	08:31 16:39	07:22 17:49	06:08 18:49	05:47 20:54	04:47 21:52	04:32 22:18	05:11 21:45	06:13 20:33	07:15 19:10	07:18 16:53	08:24 15:54	08:58 15:47
28	08:29 16:42	07:20 17:51	06:05 18:51	05:45 20:56	04:46 21:54	04:32 22:18	05:13 21:43	06:15 20:31	07:17 19:08	07:20 16:51	08:26 15:53	08:58 15:48
29	08:27 16:44		07:03 19:53	05:43 20:58	04:44 21:55	04:33 22:17	05:15 21:41	06:17 20:28	07:19 19:05	07:23 16:48	08:28 15:52	08:58 15:49
30	08:25 16:46		07:00 19:55	05:40 21:00	04:43 21:57	04:34 22:17	05:17 21:39	06:19 20:26	07:21 19:02	07:25 16:46	08:30 15:51	08:58 15:50
31	08:23 16:48		06:57 19:57		04:42 21:58		05:19 21:37	06:21 20:23		07:27 16:44		08:58 15:51
Potential sun hours	234	265	366	427	509	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)	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_N163_Stelpe1_kumulativa_ietekme

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Laura Kurzemniece / laura.kurzemniece@environment.lv

Calculated:

07.04.2025 13:03/4.1.254

SHADOW - Calendar per WTG

Calculation: Flickering_Nordex_N163_kumulativa_ietekme WTG: 11 - Siemens Gamesa SG 6.6-170 6600 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (26)

Assumptions for shadow calculations

Sunshine probability 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	08:58 15:53	08:22 16:50	07:17 17:53	06:54 19:59	05:38 21:02	04:40 22:00	04:35 22:16	05:21 21:35	06:23 20:20	07:23 18:59	07:29 16:41	08:31 15:50
2	08:58 15:54	08:20 16:53	07:14 17:55	06:52 20:01	05:35 21:04	04:39 22:01	04:35 22:16	05:23 21:33	06:25 20:18	07:25 18:57	07:31 16:39	08:33 15:49
3	08:57 15:55	08:18 16:55	07:12 17:58	06:49 20:03	05:33 21:06	04:38 22:03	04:36 22:15	05:25 21:31	06:27 20:15	07:27 18:54	07:34 16:37	08:35 15:48
4	08:57 15:57	08:16 16:57	07:09 18:00	06:46 20:05	05:31 21:08	04:37 22:04	04:37 22:15	05:26 21:29	06:29 20:12	07:29 18:51	07:36 16:35	08:36 15:47
5	08:57 15:58	08:14 16:59	07:07 18:02	06:44 20:08	05:29 21:10	04:36 22:05	04:38 22:14	05:28 21:26	06:31 20:10	07:32 18:49	07:38 16:33	08:38 15:46
6	08:56 16:00	08:11 17:02	07:04 18:04	06:41 20:10	05:26 21:13	04:35 22:06	04:39 22:13	05:30 21:24	06:33 20:07	07:34 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 20:12	05:24 21:15	04:35 22:08	04:40 22:13	05:32 21:22	06:35 20:04	07:36 18:43	07:42 16:28	08:41 15:45
8	08:55 16:03	08:07 17:06	06:59 18:08	06:36 20:14	05:22 21:17	04:34 22:09	04:41 22:12	05:34 21:20	06:37 20:02	07:38 18:41	07:45 16:26	08:42 15:44
9	08:54 16:04	08:05 17:08	06:56 18:11	06:33 20:16	05:20 21:19	04:33 22:10	04:43 22:11	05:36 21:17	06:39 19:59	07:40 18:38	07:47 16:24	08:44 15:44
10	08:53 16:06	08:03 17:11	06:54 18:13	06:31 20:18	05:18 21:21	04:32 22:11	04:44 22:10	05:38 21:15	06:41 19:56	07:42 18:36	07:49 16:22	08:45 15:44
11	08:52 16:08	08:01 17:13	06:51 18:15	06:28 20:20	05:16 21:23	04:32 22:12	04:45 22:09	05:40 21:13	06:43 19:54	07:44 18:33	07:51 16:20	08:46 15:43
12	08:51 16:09	07:58 17:15	06:48 18:17	06:25 20:22	05:13 21:25	04:31 22:13	04:47 22:08	05:42 21:11	06:45 19:51	07:46 18:30	07:53 16:18	08:48 15:43
13	08:50 16:11	07:56 17:17	06:46 18:19	06:23 20:24	05:11 21:27	04:31 22:13	04:48 22:06	05:44 21:08	06:47 19:48	07:48 18:28	07:55 16:16	08:49 15:43
14	08:49 16:13	07:54 17:20	06:43 18:21	06:20 20:26	05:09 21:29	04:30 22:14	04:49 22:05	05:46 21:06	06:49 19:46	07:50 18:25	07:58 16:14	08:50 15:43
15	08:48 16:15	07:51 17:22	06:40 18:23	06:17 20:29	05:07 21:31	04:30 22:15	04:51 22:04	05:48 21:03	06:51 19:43	07:52 18:23	08:00 16:13	08:51 15:42
16	08:47 16:17	07:49 17:24	06:38 18:26	06:15 20:31	05:06 21:33	04:30 22:15	04:52 22:02	05:50 21:01	06:53 19:40	07:55 18:20	08:02 16:11	08:52 15:42
17	08:46 16:19	07:47 17:27	06:35 18:28	06:12 20:33	05:04 21:34	04:30 22:16	04:54 22:01	05:52 20:59	06:55 19:37	07:57 18:17	08:04 16:09	08:53 15:43
18	08:45 16:21	07:44 17:29	06:32 18:30	06:10 20:35	05:02 21:36	04:30 22:16	04:56 22:00	05:55 20:56	06:57 19:35	07:59 18:15	08:06 16:07	08:54 15:43
19	08:43 16:23	07:42 17:31	06:30 18:32	06:07 20:37	05:00 21:38	04:30 22:17	04:57 21:58	05:57 20:54	06:59 19:32	08:01 18:12	08:08 16:06	08:54 15:43
20	08:42 16:25	07:40 17:33	06:27 18:34	06:05 20:39	04:58 21:40	04:30 22:17	04:59 21:57	05:59 20:51	07:01 19:29	08:03 18:10	08:10 16:04	08:55 15:43
21	08:40 16:27	07:37 17:35	06:24 18:36	06:02 20:41	04:56 21:42	04:30 22:17	05:01 21:55	06:01 20:49	07:03 19:27	08:05 18:07	08:12 16:03	08:56 15:44
22	08:39 16:29	07:35 17:38	06:21 18:38	06:00 20:43	04:55 21:44	04:30 22:18	05:02 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	04:30 22:18	05:04 21:52	06:05 20:44	07:07 19:21	08:10 18:03	08:16 16:00	08:57 15:45
24	08:36 16:33	07:30 17:42	06:16 18:42	05:55 20:47	04:52 21:47	04:30 22:18	05:06 21:50	06:07 20:41	07:09 19:18	08:12 18:00	08:18 15:58	08:57 15:45
25	08:34 16:35	07:27 17:44	06:13 18:45	05:52 20:50	04:50 21:49	04:31 22:18	05:08 21:48	06:09 20:39	07:11 19:16	07:14 16:58	08:20 15:57	08:58 15:46
26	08:32 16:37	07:25 17:47	06:11 18:47	05:50 20:52	04:48 21:51	04:31 22:18	05:09 21:46	06:11 20:36	07:13 19:13	07:16 16:55	08:22 15:56	08:58 15:47
27	08:31 16:39	07:22 17:49	06:08 18:49	05:47 20:54	04:47 21:52	04:32 22:18	05:11 21:45	06:13 20:33	07:15 19:10	07:18 16:53	08:24 15:54	08:58 15:47
28	08:29 16:42	07:20 17:51	06:05 18:51	05:45 20:56	04:46 21:54	04:32 22:17	05:13 21:43	06:15 20:31	07:17 19:08	07:20 16:51	08:26 15:53	08:58 15:48
29	08:27 16:44		07:03 19:53	05:42 20:58	04:44 21:55	04:33 22:17	05:15 21:41	06:17 20:28	07:19 19:05	07:23 16:48	08:28 15:52	08:58 15:49
30	08:25 16:46		07:00 19:55	05:40 21:00	04:43 21:57	04:34 22:17	05:17 21:39	06:19 20:26	07:21 19:02	07:25 16:46	08:30 15:51	08:58 15:50
31	08:23 16:48		06:57 19:57		04:42 21:58		05:19 21:37	06:21 20:23		07:27 16:44		08:58 15:51
Potential sun hours	234	266	366	427	509	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
			First time (hh:mm) with flicker	Last time (hh:mm) with flicker	Minutes with flicker

Project:

flickering_Nordex_N163_Stelpe1_kumulativa_ietekme

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Laura Kurzemniece / laura.kurzemniece@environment.lv

Calculated:

07.04.2025 13:03/4.1.254

SHADOW - Calendar per WTG

Calculation: Flickering_Nordex_N163_kumulativa_ietekme WTG: 12 - Siemens Gamesa SG 6.6-170 6600 170.0 !O! hub: 165,0 m (TOT: 250,0 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	6,63	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	08:58 15:53	08:21 16:50	07:17 17:53	06:54 19:59	05:38 21:02	04:40 22:00	04:34 22:16	05:21 21:35	06:23 20:20	07:23 18:59	07:29 16:41	08:31 15:50
2	08:58 15:54	08:19 16:53	07:14 17:55	06:52 20:01	05:35 21:04	04:39 22:01	04:35 22:16	05:23 21:33	06:25 20:18	07:25 18:57	07:31 16:39	08:33 15:49
3	08:57 15:55	08:17 16:55	07:12 17:58	06:49 20:03	05:33 21:06	04:38 22:03	04:36 22:15	05:24 21:31	06:27 20:15	07:27 18:54	07:33 16:37	08:35 15:48
4	08:57 15:57	08:15 16:57	07:09 18:00	06:46 20:05	05:31 21:08	04:37 22:04	04:37 22:15	05:26 21:28	06:29 20:12	07:29 18:51	07:36 16:35	08:36 15:47
5	08:56 15:58	08:13 16:59	07:07 18:02	06:44 20:07	05:28 21:10	04:36 22:05	04:38 22:14	05:28 21:26	06:31 20:10	07:31 18:49	07:38 16:32	08:38 15:46
6	08:56 15:59	08:11 17:02	07:04 18:04	06:41 20:10	05:26 21:12	04:35 22:06	04:39 22:13	05:30 21:24	06:33 20:07	07:34 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 20:12	05:24 21:14	04:34 22:07	04:40 22:12	05:32 21:22	06:35 20:04	07:36 18:43	07:42 16:28	08:41 15:45
8	08:55 16:03	08:07 17:06	06:59 18:08	06:36 20:14	05:22 21:17	04:34 22:09	04:41 22:12	05:34 21:20	06:37 20:02	07:38 18:41	07:44 16:26	08:42 15:44
9	08:54 16:04	08:05 17:08	06:56 18:11	06:33 20:16	05:20 21:19	04:33 22:10	04:43 22:11	05:36 21:17	06:39 19:59	07:40 18:38	07:47 16:24	08:44 15:44
10	08:53 16:06	08:03 17:11	06:53 18:13	06:30 20:18	05:18 21:21	04:32 22:11	04:44 22:10	05:38 21:15	06:41 19:56	07:42 18:35	07:49 16:22	08:45 15:43
11	08:52 16:08	08:00 17:13	06:51 18:15	06:28 20:20	05:15 21:23	04:32 22:12	04:45 22:09	05:40 21:13	06:43 19:54	07:44 18:33	07:51 16:20	08:46 15:43
12	08:51 16:09	07:58 17:15	06:48 18:17	06:25 20:22	05:13 21:25	04:31 22:12	04:47 22:07	05:42 21:10	06:45 19:51	07:46 18:30	07:53 16:18	08:48 15:43
13	08:50 16:11	07:56 17:17	06:46 18:19	06:23 20:24	05:11 21:27	04:31 22:13	04:48 22:06	05:44 21:08	06:47 19:48	07:48 18:28	07:55 16:16	08:49 15:43
14	08:49 16:13	07:54 17:20	06:43 18:21	06:20 20:26	05:09 21:29	04:30 22:14	04:49 22:05	05:46 21:06	06:49 19:45	07:50 18:25	07:57 16:14	08:50 15:42
15	08:48 16:15	07:51 17:22	06:40 18:23	06:17 20:28	05:07 21:30	04:30 22:15	04:51 22:04	05:48 21:03	06:51 19:43	07:52 18:22	08:00 16:13	08:51 15:42
16	08:47 16:17	07:49 17:24	06:37 18:25	06:15 20:31	05:05 21:32	04:30 22:15	04:52 22:02	05:50 21:01	06:53 19:40	07:54 18:20	08:02 16:11	08:52 15:42
17	08:46 16:19	07:47 17:26	06:35 18:28	06:12 20:33	05:04 21:34	04:30 22:16	04:54 22:01	05:52 20:59	06:55 19:37	07:57 18:17	08:04 16:09	08:53 15:42
18	08:44 16:21	07:44 17:29	06:32 18:30	06:10 20:35	05:02 21:36	04:30 22:16	04:56 22:00	05:54 20:56	06:57 19:35	07:59 18:15	08:06 16:07	08:54 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 22:17	04:57 21:58	05:56 20:54	06:59 19:32	08:01 18:12	08:08 16:06	08:54 15:43
20	08:42 16:25	07:39 17:33	06:27 18:34	06:05 20:39	04:58 21:40	04:30 22:17	04:59 21:57	05:58 20:51	07:01 19:29	08:03 18:10	08:10 16:04	08:55 15:43
21	08:40 16:27	07:37 17:35	06:24 18:36	06:02 20:41	04:56 21:42	04:30 22:17	05:00 21:55	06:01 20:49	07:03 19:26	08:05 18:07	08:12 16:03	08:56 15:44
22	08:39 16:29	07:35 17:38	06:21 18:38	06:00 20:43	04:55 21:44	04:30 22:18	05:02 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	04:30 22:18	05:04 21:52	06:05 20:44	07:07 19:21	08:09 18:02	08:16 16:00	08:57 15:45
24	08:36 16:33	07:30 17:42	06:16 18:42	05:55 20:47	04:51 21:47	04:30 22:18	05:06 21:50	06:07 20:41	07:09 19:18	08:12 18:00	08:18 15:58	08:57 15:45
25	08:34 16:35	07:27 17:44	06:13 18:44	05:52 20:50	04:50 21:49	04:31 22:18	05:07 21:48	06:09 20:38	07:11 19:16	07:14 16:58	08:20 15:57	08:58 15:46
26	08:32 16:37	07:25 17:47	06:11 18:47	05:50 20:52	04:48 21:50	04:31 22:18	05:09 21:46	06:11 20:36	07:13 19:13	07:16 16:55	08:22 15:55	08:58 15:47
27	08:31 16:39	07:22 17:49	06:08 18:49	05:47 20:54	04:47 21:52	04:32 22:18	05:11 21:44	06:13 20:33	07:15 19:10	07:18 16:53	08:24 15:54	08:58 15:47
28	08:29 16:41	07:20 17:51	06:05 18:51	05:45 20:56	04:46 21:54	04:32 22:17	05:13 21:43	06:15 20:31	07:17 19:07	07:20 16:50	08:26 15:53	08:58 15:48
29	08:27 16:44		07:02 19:53	05:42 20:58	04:44 21:55	04:33 22:17	05:15 21:41	06:17 20:28	07:19 19:05	07:23 16:48	08:28 15:52	08:58 15:49
30	08:25 16:46		07:00 19:55	05:40 21:00	04:43 21:57	04:34 22:17	05:17 21:39	06:19 20:26	07:21 19:02	07:25 16:46	08:29 15:51	08:58 15:50
31	08:23 16:48		06:57 19:57		04:42 21:58		05:19 21:37	06:21 20:23		07:27 16:44		08:58 15:51
Potential sun hours	234	266	366	427	509	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)	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_N163_Stelpe1_kumulativa_ietekme

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Laura Kurzemniece / laura.kurzemniece@environment.lv

Calculated:

07.04.2025 13:03/4.1.254

SHADOW - Calendar per WTG

Calculation: Flickering_Nordex_N163_kumulativa_ietekme WTG: 13 - NORDEX N163/6.X 7000 163.0 !O! hub: 169,0 m (TOT: 250,5 m) (24)
Sunshine probability 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
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	05:34 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	05:36 21:17	06:39 19:59	07:39 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	04:45 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 16:09	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
13	08:50 16:11	07:56 17:17	06:45 18:19	06:23 20:24	05:12 21:26	04:31 22:13	04:48 22:06	05:44 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	05:46 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	04:30 22:14	04:51 22:03	05:48 21:03	06:51 19:42	07:52 18:22	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	05:50 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 17:26	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 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	05:54 20:56	06:57 19:34	07:58 18:15	08:05 16:07	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	05:56 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 15:43
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	05:02 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	06:18 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 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 15:45
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
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27	08:30 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	08:17 16:53	08:23 15:54	08:57 15:48
28	08:28 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	08:19 16:50	08:25 15:53	08:57 15:48
29	08:27 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	08:21 16:48	08:27 15:52	08:58 15:49
30	08:25 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	08:23 16:46	08:29 15:51	08:58 15:50
31	08:23 16:48		06:57 19:57		04:42 21:58		05:19 21:36	06:21 20:23		07:27 16:44		08:57 15:52
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)	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_N163_Stelpe1_kumulativa_ietekme

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Laura Kurzemniece / laura.kurzemniece@environment.lv

Calculated:

07.04.2025 13:03/4.1.254

SHADOW - Calendar per WTG

Calculation: Flickering_Nordex_N163_kumulativa_ietekme WTG: 13 - Siemens Gamesa SG 6.6-170 6600 170.0 !O! hub: 165,0 m (TOT: 250,0 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	6,63	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	08:58 15:53	08:21 16:50	07:17 17:53	06:54 19:59	05:38 21:02	04:40 22:00	04:34 22:16	05:21 21:35	06:23 20:20	07:23 18:59	07:29 16:41	08:31 15:50
2	08:58 15:54	08:19 16:53	07:14 17:55	06:52 20:01	05:35 21:04	04:39 22:01	04:35 22:16	05:22 21:33	06:25 20:18	07:25 18:57	07:31 16:39	08:33 15:49
3	08:57 15:55	08:17 16:55	07:12 17:57	06:49 20:03	05:33 21:06	04:38 22:03	04:36 22:15	05:24 21:31	06:27 20:15	07:27 18:54	07:33 16:37	08:35 15:48
4	08:57 15:57	08:15 16:57	07:09 18:00	06:46 20:05	05:31 21:08	04:37 22:04	04:37 22:15	05:26 21:28	06:29 20:12	07:29 18:51	07:36 16:35	08:36 15:47
5	08:56 15:58	08:13 16:59	07:07 18:02	06:44 20:07	05:28 21:10	04:36 22:05	04:38 22:14	05:28 21:26	06:31 20:10	07:31 18:49	07:38 16:32	08:38 15:46
6	08:56 15:59	08:11 17:02	07:04 18:04	06:41 20:10	05:26 21:12	04:35 22:06	04:39 22:13	05:30 21:24	06:33 20:07	07:34 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 20:12	05:24 21:14	04:34 22:07	04:40 22:12	05:32 21:22	06:35 20:04	07:36 18:43	07:42 16:28	08:41 15:45
8	08:55 16:02	08:07 17:06	06:59 18:08	06:36 20:14	05:22 21:17	04:34 22:09	04:41 22:12	05:34 21:20	06:37 20:02	07:38 18:41	07:44 16:26	08:42 15:44
9	08:54 16:04	08:05 17:08	06:56 18:10	06:33 20:16	05:20 21:19	04:33 22:10	04:43 22:11	05:36 21:17	06:39 19:59	07:40 18:38	07:47 16:24	08:44 15:44
10	08:53 16:06	08:03 17:11	06:53 18:13	06:30 20:18	05:18 21:21	04:32 22:11	04:44 22:10	05:38 21:15	06:41 19:56	07:42 18:35	07:49 16:22	08:45 15:43
11	08:52 16:07	08:00 17:13	06:51 18:15	06:28 20:20	05:15 21:23	04:32 22:12	04:45 22:09	05:40 21:13	06:43 19:54	07:44 18:33	07:51 16:20	08:46 15:43
12	08:51 16:09	07:58 17:15	06:48 18:17	06:25 20:22	05:13 21:25	04:31 22:12	04:46 22:07	05:42 21:10	06:45 19:51	07:46 18:30	07:53 16:18	08:48 15:43
13	08:50 16:11	07:56 17:17	06:45 18:19	06:23 20:24	05:11 21:27	04:31 22:13	04:48 22:06	05:44 21:08	06:47 19:48	07:48 18:28	07:55 16:16	08:49 15:43
14	08:49 16:13	07:54 17:20	06:43 18:21	06:20 20:26	05:09 21:29	04:30 22:14	04:49 22:05	05:46 21:06	06:49 19:45	07:50 18:25	07:57 16:14	08:50 15:42
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16	08:47 16:17	07:49 17:24	06:37 18:25	06:15 20:31	05:05 21:32	04:30 22:15	04:52 22:02	05:50 21:01	06:53 19:40	07:54 18:20	08:02 16:11	08:52 15:42
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18	08:44 16:20	07:44 17:29	06:32 18:30	06:10 20:35	05:02 21:36	04:30 22:16	04:55 22:00	05:54 20:56	06:57 19:35	07:59 18:15	08:06 16:07	08:54 15:43
19	08:43 16:22	07:42 17:31	06:29 18:32	06:07 20:37	05:00 21:38	04:29 22:17	04:57 21:58	05:56 20:54	06:59 19:32	08:01 18:12	08:08 16:06	08:54 15:43
20	08:42 16:24	07:39 17:33	06:27 18:34	06:04 20:39	04:58 21:40	04:30 22:17	04:59 21:57	05:58 20:51	07:01 19:29	08:03 18:10	08:10 16:04	08:55 15:43
21	08:40 16:27	07:37 17:35	06:24 18:36	06:02 20:41	04:56 21:42	04:30 22:17	05:00 21:55	06:00 20:49	07:03 19:26	08:05 18:07	08:12 16:02	08:56 15:43
22	08:39 16:29	07:35 17:38	06:21 18:38	05:59 20:43	04:55 21:44	04:30 22:18	05:02 21:53	06:02 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	04:30 22:18	05:04 21:52	06:05 20:44	07:07 19:21	08:09 18:02	08:16 15:59	08:57 15:44
24	08:36 16:33	07:30 17:42	06:16 18:42	05:54 20:47	04:51 21:47	04:30 22:18	05:06 21:50	06:07 20:41	07:09 19:18	08:12 18:00	08:18 15:58	08:57 15:45
25	08:34 16:35	07:27 17:44	06:13 18:44	05:52 20:49	04:50 21:49	04:31 22:18	05:07 21:48	06:09 20:38	07:11 19:16	07:14 16:58	08:20 15:57	08:58 15:46
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29	08:27 16:44		07:02 19:53	05:42 20:58	04:44 21:55	04:33 22:17	05:15 21:41	06:17 20:28	07:19 19:05	07:22 16:48	08:28 15:52	08:58 15:49
30	08:25 16:46		07:00 19:55	05:40 21:00	04:43 21:57	04:34 22:17	05:17 21:39	06:19 20:25	07:21 19:02	07:25 16:46	08:29 15:51	08:58 15:50
31	08:23 16:48		06:57 19:57		04:42 21:58		05:19 21:37	06:21 20:23		07:27 16:43		08:58 15:51
Potential sun hours	234	265	366	427	509	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)	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