

Project:

Mezares\_AB211223

Licensed user:

SIA Estonian, Latvian &amp; Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Anna / anna@environment.lv

Calculated:

26/06/2024 08:57/4.0.540

## SHADOW - Calendar per WTG

WTG: E1 - NORDEX N175/6.X 6800 175.0 !-! hub: 179.0 m (TOT: 266.5 m) (109)

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.01	1.91	4.85	7.09	9.29	9.83	8.40	7.53	5.47	2.70	0.68	0.49

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
425	448	518	446	469	751	755	902	1,169	1,037	801	535	8,256

Idle start wind speed: Cut in wind speed from power curve

	January	February	March	April	May	June
1	08:50 15:48	08:14 15:30-15:52/22 16:45	07:10 16:15-16:47/32 17:47	06:48 19:53	05:32 20:55	04:35 21:52
2	08:50 15:49	08:12 15:31-15:52/21 16:47	07:08 16:15-16:46/31 17:49	06:46 19:55	05:30 20:57	04:34 21:54
3	08:50 15:50	08:11 15:32-15:51/19 16:49	07:05 16:15-16:45/30 17:51	06:43 19:57	05:27 20:59	04:33 21:55
4	08:50 15:51	08:09 15:33-15:51/18 16:51	07:03 16:17-16:45/28 17:54	06:40 19:59	05:25 21:01	04:32 21:56
5	08:49 15:53	08:06 15:34-15:49/15 16:54	07:00 16:17-16:43/26 17:56	06:38 20:01	05:23 21:03	04:31 21:58
6	08:49 15:54	08:04 15:36-15:48/12 16:56	06:58 16:18-16:41/23 17:58	06:35 20:03	05:21 21:05	04:30 21:59
7	08:48 15:56	08:02 15:39-15:46/7 16:58	06:55 16:21-16:40/19 18:00	06:32 20:05	05:19 21:07	04:29 22:00
8	08:47 15:57	08:00 17:00	06:52 16:23-16:37/14 18:02	06:30 20:07	05:16 21:09	04:29 22:01
9	08:47 15:59	07:58 17:03	06:50 16:28-16:31/3 18:04	06:27 20:09	05:14 21:11	04:28 22:02
10	08:46 16:01	07:56 17:05	06:47 17:05-17:36/31 18:07	06:25 20:11	05:12 21:13	04:27 22:03
11	08:45 16:02	07:54 17:07	06:44 17:04-17:37/33 18:09	06:22 20:13	05:10 21:15	04:27 22:04
12	08:44 16:04	07:51 17:09	06:42 17:03-17:37/34 18:11	06:19 20:16	05:08 21:17	04:26 22:05
13	08:43 16:06	07:49 17:12	06:39 17:03-17:37/34 18:13	06:17 20:18	05:06 21:19	04:26 22:06
14	08:42 16:08	07:47 17:14	06:37 17:04-17:38/34 18:15	06:14 20:20	05:04 21:21	04:25 22:06
15	08:41 16:09	07:45 17:16	06:34 17:04-17:37/33 18:17	06:12 20:22	05:02 21:23	04:25 22:07
16	08:40 16:11	07:42 16:26-16:38/12 17:18	06:31 17:04-17:37/33 18:19	06:09 20:24	05:00 21:25	04:25 22:08
17	08:38 16:13	07:40 16:24-16:41/17 17:21	06:29 17:05-17:37/32 18:21	06:06 20:26	04:58 21:27	04:25 22:08
18	08:37 16:15	07:38 16:21-16:43/22 17:23	06:26 17:06-17:36/30 18:23	06:04 20:28	04:56 21:29	04:25 22:09
19	08:36 15:33-15:38/5 16:17	07:35 16:20-16:45/25 17:25	06:23 17:08-17:34/26 18:26	06:01 20:30	04:55 21:31	04:25 22:09
20	08:35 15:32-15:40/8 16:19	07:33 16:19-16:45/26 17:27	06:21 17:13-17:34/21 18:28	05:59 20:32	04:53 21:33	04:25 22:09
21	08:33 15:31-15:43/12 16:21	07:30 16:17-16:46/29 17:30	06:18 17:14-17:32/18 18:30	05:56 20:34	04:51 21:34	04:25 22:10
22	08:32 15:30-15:46/16 16:23	07:28 16:17-16:47/30 17:32	06:15 17:16-17:29/13 18:32	05:54 20:36	04:49 21:36	04:25 22:10
23	08:30 15:30-15:48/18 16:25	07:25 16:16-16:47/31 17:34	06:12 17:19-17:25/6 18:34	05:51 20:38	04:48 21:38	04:25 22:10
24	08:29 15:29-15:49/20 16:27	07:23 16:16-16:48/32 17:36	06:10 18:36	05:49 20:41	04:46 21:40	04:26 22:10
25	08:27 15:29-15:50/21 16:30	07:20 16:15-16:48/33 17:38	06:07 18:38	05:46 20:43	04:45 21:41	04:26 22:10
26	08:25 15:29-15:50/21 16:32	07:18 16:15-16:48/33 17:41	06:04 18:40	05:44 20:45	04:43 21:43	04:26 22:10
27	08:24 15:29-15:51/22 16:34	07:15 16:15-16:48/33 17:43	06:02 18:42	05:42 20:47	04:42 21:45	04:27 22:10
28	08:22 15:29-15:51/22 16:36	07:13 16:14-16:47/33 17:45	05:59 18:44	05:39 20:49	04:40 21:46	04:27 22:10
29	08:20 15:29-15:51/22 16:38		06:56 19:46	05:37 20:51	04:39 21:48	04:28 22:09
30	08:18 15:29-15:52/23 16:40		06:54 19:48	05:34 20:53	04:38 21:49	04:29 22:09
31	08:16 15:30-15:52/22 16:43		06:51 19:51		04:37 21:51	
Potential sun hours	235	266	366	426	508	529
Sum of minutes with flicker	232	470	702	0	0	0

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

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

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1.01	1.91	4.85	7.09	9.29	9.83	8.40	7.53	5.47	2.70	0.68	0.49

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
425	448	518	446	469	751	755	902	1,169	1,037	801	535	8,256

Idle start wind speed: Cut in wind speed from power curve

	July	August	September	October	November	December
1	04:29 22:09	05:15 21:28	06:17 20:14	07:17 18:53	17:42-18:16/34 16:36	07:22 15:45
2	04:30 22:08	05:17 21:26	06:19 20:11	07:19 18:51	17:42-18:15/33 16:33	07:24 15:44
3	04:31 22:08	05:19 21:23	06:21 20:08	07:21 18:48	17:42-18:14/32 16:31	07:27 15:43
4	04:32 22:07	05:21 21:21	06:23 20:06	07:23 18:45	17:43-18:13/30 16:29	07:29 15:42
5	04:33 22:06	05:23 21:19	06:25 20:03	07:25 18:43	17:02-17:12/10 17:43-18:11/28	07:31 16:27
6	04:34 22:06	05:25 21:17	06:27 20:00	07:27 18:40	16:58-17:15/17 17:43-18:08/25	07:33 16:25
7	04:35 22:05	05:27 21:15	06:29 19:58	07:29 18:37	16:55-17:17/22 17:44-18:04/20	07:35 16:23
8	04:36 22:04	05:29 21:13	06:31 19:55	07:31 18:35	16:53-17:18/25 17:45-18:02/17	07:37 16:21
9	04:38 22:03	05:31 21:10	06:33 19:52	07:33 18:32	16:52-17:19/27 17:47-17:59/12	07:40 16:19
10	04:39 22:02	05:33 21:08	06:35 19:50	07:35 18:29	16:50-17:19/29 16:17	07:42 16:15
11	04:40 22:01	05:35 21:06	06:37 19:47	07:37 18:27	16:49-17:19/30 16:15	07:44 16:15
12	04:42 22:00	05:37 21:04	06:39 19:44	07:39 18:24	16:49-17:21/32 16:13	07:46 16:13
13	04:43 21:59	05:39 21:01	06:41 19:42	07:42 18:22	16:48-17:20/32 16:11	07:48 16:11
14	04:44 21:58	05:41 20:59	06:43 19:39	07:44 18:19	16:47-17:20/33 16:09	07:50 16:09
15	04:46 21:56	05:43 20:56	06:45 19:36	07:46 18:17	16:47-17:20/33 16:07	07:53 16:07
16	04:47 21:55	05:45 20:54	06:47 19:34	07:48 18:14	16:46-17:19/33 16:05	07:55 16:05
17	04:49 21:54	05:47 20:52	06:49 19:31	07:50 18:11	16:47-17:20/33 16:04	07:57 16:04
18	04:50 21:52	05:49 20:49	06:51 19:28	07:52 18:09	16:47-17:19/32 16:02	07:59 16:02
19	04:52 21:51	05:51 20:47	06:53 19:26	07:54 18:06	16:47-17:18/31 16:00	08:01 16:00
20	04:54 21:49	05:53 20:44	06:55 19:23	07:56 18:04	16:47-17:17/30 15:59	08:03 15:59
21	04:55 21:48	05:55 20:42	06:57 19:20	07:58 18:01	16:49-17:17/28 15:57	08:05 15:57
22	04:57 21:46	05:57 20:39	06:59 19:17	08:01 17:59	16:49-17:15/26 15:56	08:07 15:56
23	04:59 21:44	05:59 20:37	07:01 19:15	08:03 17:57	16:50-17:14/24 15:54	08:09 15:54
24	05:00 21:43	06:01 20:34	07:03 19:12	08:05 17:54	16:52-17:13/21 15:53	08:11 15:53
25	05:02 21:41	06:03 20:32	07:05 19:09	07:07 16:52	15:54-16:10/16 15:51	08:13 15:51
26	05:04 21:39	06:05 20:29	07:07 19:07	07:09 16:49	15:57-16:06/9 15:50	08:15 15:50
27	05:06 21:37	06:07 20:27	07:09 19:04	07:11 16:47	17:46-18:18/32 15:49	08:17 15:49
28	05:08 21:35	06:09 20:24	07:11 19:01	07:14 16:45	17:45-18:18/33 15:48	08:19 15:48
29	05:10 21:33	06:11 20:21	07:13 18:59	07:16 16:42	17:44-18:18/34 15:47	08:20 15:47
30	05:11 21:32	06:13 20:19	07:15 18:56	07:18 16:40	17:43-18:17/34 15:46	08:22 15:46
31	05:13 21:30	06:15 20:16		07:20 16:38		08:51 15:46
Potential sun hours	529	469	385	324	247	216
Sum of minutes with flicker	0	0	265	804	352	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

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Idle start wind speed: Cut in wind speed from power curve

	January	February	March	April	May	June
1	08:50 15:48	08:14 16:45	07:11 07:54-08:35/41 17:47	06:49 19:53	05:32 20:55	04:36 05:48-06:23/35 21:52
2	08:50 15:49	08:13 16:47	07:08 07:51-08:35/44 17:49	06:46 19:55	05:30 20:57	04:35 05:48-06:23/35 21:54
3	08:50 15:50	08:11 16:49	07:05 07:50-08:37/47 17:52	06:43 19:57	05:28 20:59	04:33 05:48-06:22/34 21:55
4	08:49 15:52	08:09 16:52	07:03 07:48-08:37/49 17:54	06:41 19:59	05:25 21:01	04:32 05:48-06:22/34 21:56
5	08:49 15:53	08:07 16:54	07:00 07:46-08:37/51 17:56	06:38 20:01	05:23 21:03	04:32 05:49-06:23/34 21:58
6	08:49 15:55	08:04 08:35-08:39/4 16:56	06:58 07:45-08:37/52 17:58	06:35 20:03	05:21 06:02-06:07/5 21:05	04:31 05:49-06:22/33 21:59
7	08:48 15:56	08:02 08:32-08:44/12 16:58	06:55 07:44-08:37/53 18:00	06:33 20:05	05:19 05:58-06:11/13 21:07	04:30 05:49-06:22/33 22:00
8	08:47 15:58	08:00 08:30-08:46/16 17:01	06:52 07:43-08:37/54 18:02	06:30 20:07	05:17 05:55-06:14/19 21:09	04:29 05:50-06:23/33 22:01
9	08:47 15:59	07:58 08:28-08:47/19 17:03	06:50 07:43-08:37/54 18:05	06:27 20:09	05:15 05:54-06:15/21 21:11	04:28 05:50-06:22/32 22:02
10	08:46 16:01	07:56 08:28-08:48/20 17:05	06:47 07:42-08:36/54 18:07	06:25 20:11	05:12 05:52-06:16/24 21:13	04:28 05:51-06:22/31 22:03
11	08:45 16:03	07:54 08:26-08:48/22 17:07	06:45 07:41-08:36/55 18:09	06:22 20:14	05:10 05:51-06:17/26 21:15	04:27 05:51-06:22/31 22:04
12	08:44 16:04	07:52 08:26-08:49/23 17:10	06:42 07:40-08:35/55 18:11	06:19 20:16	05:08 05:50-06:18/28 21:17	04:27 05:52-06:22/30 22:05
13	08:43 16:06	07:49 08:26-08:50/24 17:12	06:39 07:40-08:35/55 18:13	06:17 20:18	05:06 05:49-06:19/30 21:19	04:26 05:52-06:23/31 22:06
14	08:42 16:08	07:47 08:26-08:50/24 17:14	06:37 07:40-08:33/53 18:15	06:14 20:20	05:04 05:49-06:20/31 21:21	04:26 05:52-06:22/30 22:06
15	08:41 16:10	07:45 08:26-08:50/24 17:16	06:34 07:39-08:32/53 18:17	06:12 20:22	05:02 05:48-06:20/32 21:23	04:26 05:53-06:22/29 22:07
16	08:40 16:12	07:42 08:26-08:50/24 17:19	06:31 07:40-08:31/51 18:19	06:09 20:24	05:00 05:47-06:20/33 21:25	04:25 05:53-06:22/29 22:08
17	08:38 16:14	07:40 08:26-08:50/24 17:21	06:29 07:40-08:30/50 18:22	06:07 20:26	04:59 05:47-06:21/34 21:27	04:25 05:53-06:22/29 22:08
18	08:37 16:15	07:38 08:26-08:49/23 17:23	06:26 07:40-08:28/48 18:24	06:04 20:28	04:57 05:47-06:21/34 21:29	04:25 05:54-06:23/29 22:09
19	08:36 16:17	07:35 08:27-08:49/22 17:25	06:23 07:41-08:26/45 18:26	06:02 20:30	04:55 05:46-06:21/35 21:31	04:25 05:54-06:23/29 22:09
20	08:35 16:19	07:33 08:28-08:47/19 17:28	06:21 07:41-08:23/42 18:28	05:59 20:32	04:53 05:46-06:22/36 21:33	04:25 05:54-06:23/29 22:09
21	08:33 16:21	07:30 08:30-08:46/16 17:30	06:18 07:42-08:20/38 18:30	05:56 20:34	04:51 05:46-06:22/36 21:34	04:25 05:55-06:24/29 22:10
22	08:32 16:24	07:28 08:31-08:44/13 17:32	06:15 07:43-08:14/31 18:32	05:54 20:36	04:50 05:46-06:22/36 21:36	04:25 05:55-06:24/29 22:10
23	08:30 16:26	07:26 08:35-08:40/5 17:34	06:13 07:45-08:11/26 18:34	05:52 20:39	04:48 05:46-06:22/36 21:38	04:26 05:55-06:24/29 22:10
24	08:29 16:28	07:23 08:09-08:27/18 17:36	06:10 07:46-08:08/22 18:36	05:49 20:41	04:47 05:46-06:22/36 21:40	04:26 05:55-06:24/29 22:10
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31	08:16 16:43		06:51 19:51		04:37 05:47-06:23/36 21:51	
Potential sun hours	235	266	366	426	508	529
Sum of minutes with flicker	0	479	1138	0	799	923

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2	04:31 05:56-06:27/31 22:08	05:17 06:02-06:27/25 21:26	06:19 20:11	07:19 08:20-09:15/55 18:51	07:24 07:58-08:16/18 16:34	08:26 15:44
3	04:32 05:56-06:27/31 22:08	05:19 06:03-06:26/23 21:23	06:21 20:08	07:21 08:20-09:14/54 18:48	07:27 08:00-08:15/15 16:31	08:27 15:43
4	04:32 05:56-06:28/32 22:07	05:21 06:05-06:25/20 21:21	06:23 20:06	07:23 08:19-09:14/55 18:45	07:29 08:02-08:13/11 16:29	08:29 15:42
5	04:33 05:56-06:28/32 22:06	05:23 06:05-06:22/17 21:19	06:25 20:03	07:25 08:20-09:14/54 18:43	07:31 16:27	08:30 15:41
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8	04:37 05:56-06:29/33 22:04	05:29 21:13	06:31 19:55	07:31 08:21-09:12/51 18:35	07:38 16:21	08:35 15:40
9	04:38 05:56-06:30/34 22:03	05:31 21:10	06:33 19:53	07:33 08:21-09:11/50 18:32	07:40 16:19	08:36 15:39
10	04:39 05:55-06:30/35 22:02	05:33 21:08	06:35 19:50	07:35 08:23-09:11/48 18:30	07:42 16:17	08:38 15:39
11	04:40 05:55-06:30/35 22:01	05:35 21:06	06:37 19:47	07:38 08:25-09:10/45 18:27	07:44 16:15	08:39 15:38
12	04:42 05:56-06:31/35 22:00	05:37 21:04	06:39 19:45	07:40 08:26-09:09/43 18:24	07:46 16:13	08:40 15:38
13	04:43 05:56-06:31/35 21:59	05:39 21:01	06:41 19:42	07:42 08:29-09:07/38 18:22	07:48 16:11	08:41 15:38
14	04:45 05:55-06:31/36 21:58	05:41 20:59	06:43 19:39	07:44 08:33-09:06/33 18:19	07:50 16:09	08:42 15:38
15	04:46 05:55-06:31/36 21:56	05:43 20:57	06:45 19:36	07:46 08:34-09:04/30 18:17	07:53 16:07	08:43 15:38
16	04:48 05:56-06:32/36 21:55	05:45 20:54	06:47 19:34	07:48 08:37-09:03/26 18:14	07:55 16:06	08:44 15:38
17	04:49 05:55-06:32/37 21:54	05:47 20:52	06:49 19:31	07:50 08:38-09:00/22 18:12	07:57 16:04	08:45 15:38
18	04:51 05:56-06:32/36 21:52	05:49 20:49	06:51 08:37-08:51/14 19:28	07:52 08:41-08:57/16 18:09	07:59 16:02	08:46 15:38
19	04:52 05:56-06:32/36 21:51	05:51 20:47	06:53 08:33-08:54/21 19:26	07:54 09:04-09:12/8 18:07	08:01 16:01	08:47 15:38
20	04:54 05:56-06:33/37 21:49	05:53 20:44	06:55 08:31-08:56/25 19:23	07:56 09:02-09:16/14 18:04	08:03 15:59	08:48 15:38
21	04:56 05:56-06:32/36 21:48	05:55 20:42	06:57 08:29-08:58/29 19:20	07:59 08:59-09:17/18 18:02	08:05 15:57	08:48 15:39
22	04:57 05:57-06:33/36 21:46	05:57 20:39	06:59 08:27-09:03/36 19:18	08:01 08:58-09:18/20 17:59	08:07 15:56	08:49 15:39
23	04:59 05:56-06:32/36 21:44	05:59 20:37	07:01 08:25-09:06/41 19:15	08:03 08:57-09:19/22 17:57	08:09 15:55	08:49 15:40
24	05:01 05:57-06:32/35 21:43	06:01 20:34	07:03 08:24-09:08/44 19:12	08:05 08:56-09:19/23 17:54	08:11 15:53	08:50 15:40
25	05:03 05:56-06:31/35 21:41	06:03 20:32	07:05 08:23-09:10/47 19:09	07:07 07:56-08:19/23 16:52	08:13 15:52	08:50 15:41
26	05:04 05:57-06:32/35 21:39	06:05 20:29	07:07 08:22-09:11/49 19:07	07:09 07:56-08:20/24 16:50	08:15 15:50	08:50 15:42
27	05:06 05:58-06:32/34 21:37	06:07 20:27	07:09 08:21-09:12/51 19:04	07:11 07:55-08:20/25 16:47	08:17 15:49	08:51 15:43
28	05:08 05:58-06:31/33 21:35	06:09 20:24	07:11 08:20-09:13/53 19:01	07:14 07:55-08:19/24 16:45	08:19 15:48	08:51 15:43
29	05:10 05:59-06:30/31 21:33	06:11 20:22	07:13 08:20-09:13/53 18:59	07:16 07:56-08:20/24 16:43	08:20 15:47	08:51 15:44
30	05:12 05:59-06:30/31 21:32	06:13 20:19	07:15 08:20-09:14/54 18:56	07:18 07:56-08:19/23 16:40	08:22 15:46	08:51 15:45
31	05:14 06:00-06:30/30 21:30	06:15 20:16		07:20 07:56-08:18/22 16:38		08:51 15:47
Potential sun hours	529	469	385	324	247	216
Sum of minutes with flicker	1056	125	517	1050	65	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:

Mezares\_AB211223

Licensed user:

SIA Estonian, Latvian &amp; Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Anna / anna@environment.lv

Calculated:

26/06/2024 08:57/4.0.540

## SHADOW - Calendar per WTG

WTG: E11 - NORDEX N175/6.X 6800 175.0 !-! hub: 179.0 m (TOT: 266.5 m)

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.01	1.91	4.85	7.09	9.29	9.83	8.40	7.53	5.47	2.70	0.68	0.49

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
425	448	518	446	469	751	755	902	1,169	1,037	801	535	8,256

Idle start wind speed: Cut in wind speed from power curve

	January	February	March	April	May	June
1	08:50 15:48	08:14 09:10-09:55/45 16:45	07:11 17:47	06:49 07:32-08:08/36 19:53	05:32 20:55	04:36 21:52
2	08:50 15:49	08:13 09:11-09:55/44 16:47	07:08 17:50	06:46 07:31-08:08/37 19:55	05:30 20:57	04:35 21:54
3	08:50 15:51	08:11 09:11-09:55/44 16:50	07:05 17:52	06:43 07:30-08:08/38 19:57	05:28 20:59	04:34 21:55
4	08:49 15:52	08:09 09:11-09:55/44 16:52	07:03 17:54	06:41 07:30-08:09/39 19:59	05:25 21:01	04:33 21:56
5	08:49 15:53	08:07 09:11-09:54/43 16:54	07:00 17:56	06:38 07:29-08:08/39 20:01	05:23 21:03	04:32 21:58
6	08:48 15:55	08:04 09:11-09:53/42 16:56	06:58 17:58	06:35 07:29-08:08/39 20:03	05:21 21:05	04:31 21:59
7	08:48 15:56	08:02 09:12-09:53/41 16:58	06:55 18:00	06:33 07:28-08:07/39 20:05	05:19 21:07	04:30 22:00
8	08:47 15:58	08:00 09:13-09:52/39 17:01	06:52 18:02	06:30 07:28-08:06/38 20:07	05:17 21:09	04:29 22:01
9	08:47 15:59	07:58 09:13-09:51/38 17:03	06:50 18:05	06:27 07:28-08:06/38 20:09	05:15 21:11	04:28 22:02
10	08:46 16:01	07:56 09:14-09:49/35 17:05	06:47 18:07	06:25 07:28-08:05/37 20:11	05:12 21:13	04:28 22:03
11	08:45 16:03	07:54 09:14-09:47/33 17:07	06:45 18:09	06:22 07:29-08:05/36 20:14	05:10 21:15	04:27 22:04
12	08:44 16:04	07:51 09:15-09:44/29 17:10	06:42 18:11	06:20 07:29-08:03/34 20:16	05:08 21:17	04:27 22:05
13	08:43 16:06	07:49 09:17-09:39/22 17:12	06:39 18:13	06:17 07:30-08:02/32 20:18	05:06 21:19	04:26 22:06
14	08:42 09:29-09:38/9 16:08	07:47 09:19-09:37/18 17:14	06:37 18:15	06:14 07:30-08:00/30 20:20	05:04 21:21	04:26 22:06
15	08:41 09:27-09:40/13 16:10	07:45 09:22-09:35/13 17:16	06:34 18:17	06:12 07:32-07:59/27 20:22	05:02 21:23	04:26 22:07
16	08:40 09:26-09:42/16 16:12	07:42 17:19	06:31 18:19	06:09 07:33-07:56/23 20:24	05:00 21:25	04:25 22:08
17	08:38 09:24-09:44/20 16:14	07:40 17:21	06:29 18:22	06:07 07:35-07:54/19 20:26	04:59 21:27	04:25 22:08
18	08:37 09:24-09:46/22 16:16	07:38 17:23	06:26 18:24	06:04 07:38-07:50/12 20:28	04:57 21:29	04:25 22:09
19	08:36 09:23-09:47/24 16:17	07:35 17:25	06:23 18:26	06:02 20:30	04:55 21:31	04:25 22:09
20	08:34 09:19-09:47/28 16:19	07:33 17:28	06:21 18:28	05:59 20:32	04:53 21:33	04:25 22:09
21	08:33 09:17-09:49/32 16:22	07:30 17:30	06:18 18:30	05:57 20:34	04:51 21:34	04:25 22:10
22	08:32 09:16-09:50/34 16:24	07:28 17:32	06:15 18:32	05:54 20:36	04:50 21:36	04:25 22:10
23	08:30 09:14-09:51/37 16:26	07:26 17:34	06:13 18:34	05:52 20:39	04:48 21:38	04:26 22:10
24	08:29 09:13-09:51/38 16:28	07:23 17:36	06:10 18:36	05:49 20:41	04:47 21:40	04:26 22:10
25	08:27 09:13-09:52/39 16:30	07:21 17:39	06:07 06:46-06:58/12 18:38	05:47 20:43	04:45 21:41	04:26 22:10
26	08:25 09:13-09:53/40 16:32	07:18 17:41	06:05 06:43-07:02/19 18:40	05:44 20:45	04:44 21:43	04:27 22:10
27	08:24 09:12-09:54/42 16:34	07:16 17:43	06:02 06:40-07:04/24 18:42	05:42 20:47	04:42 21:45	04:27 22:10
28	08:22 09:12-09:54/42 16:36	07:13 17:45	05:59 06:37-07:05/28 18:44	05:39 20:49	04:41 21:46	04:28 22:10
29	08:20 09:12-09:55/43 16:38		06:57 07:36-08:07/31 19:47	05:37 20:51	04:39 21:48	04:28 22:09
30	08:18 09:10-09:54/44 16:41		06:54 07:34-08:07/33 19:49	05:35 20:53	04:38 21:49	04:29 22:09
31	08:16 09:10-09:54/44 16:43		06:51 07:32-08:07/35 19:51		04:37 21:51	
Potential sun hours	235	266	366	426	508	528
Sum of minutes with flicker	567	530	182	593	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:

Mezares\_AB211223

Licensed user:

SIA Estonian, Latvian &amp; Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Anna / anna@environment.lv

Calculated:

26/06/2024 08:57/4.0.540

## SHADOW - Calendar per WTG

WTG: E11 - NORDEX N175/6.X 6800 175.0 !-! hub: 179.0 m (TOT: 266.5 m)

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.01	1.91	4.85	7.09	9.29	9.83	8.40	7.53	5.47	2.70	0.68	0.49

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
425	448	518	446	469	751	755	902	1,169	1,037	801	535	8,256

Idle start wind speed: Cut in wind speed from power curve

	July	August	September	October	November	December
1	04:30 22:09	05:15 21:28	06:17 07:28-08:04/36 20:14	07:17 18:53	07:22 08:43-09:19/36 16:36	08:24 15:45
2	04:31 22:08	05:17 21:26	06:19 07:27-08:04/37 20:11	07:19 18:51	07:24 08:42-09:20/38 16:34	08:26 15:44
3	04:32 22:08	05:19 21:23	06:21 07:26-08:04/38 20:08	07:21 18:48	07:27 08:41-09:21/40 16:31	08:27 15:43
4	04:33 22:07	05:21 21:21	06:23 07:25-08:03/38 20:06	07:23 18:45	07:29 08:41-09:23/42 16:29	08:29 15:42
5	04:33 22:06	05:23 21:19	06:25 07:24-08:04/40 20:03	07:25 18:43	07:31 08:41-09:23/42 16:27	08:30 15:41
6	04:35 22:06	05:25 21:17	06:27 07:24-08:03/39 20:01	07:27 18:40	07:33 08:41-09:24/43 16:25	08:32 15:41
7	04:36 22:05	05:27 21:15	06:29 07:24-08:03/39 19:58	07:29 18:37	07:35 08:41-09:25/44 16:23	08:33 15:40
8	04:37 22:04	05:29 21:13	06:31 07:24-08:03/39 19:55	07:31 18:35	07:38 08:41-09:25/44 16:21	08:35 15:40
9	04:38 22:03	05:31 21:10	06:33 07:24-08:02/38 19:53	07:33 18:32	07:40 08:41-09:26/45 16:19	08:36 15:39
10	04:39 22:02	05:33 21:08	06:35 07:24-08:02/38 19:50	07:35 18:30	07:42 08:41-09:25/44 16:17	08:38 15:39
11	04:41 22:01	05:35 21:06	06:37 07:24-08:01/37 19:47	07:38 18:27	07:44 08:42-09:26/44 16:15	08:39 15:38
12	04:42 22:00	05:37 21:04	06:39 07:25-08:00/35 19:45	07:40 18:24	07:46 08:42-09:26/44 16:13	08:40 15:38
13	04:43 21:59	05:39 21:01	06:41 07:25-07:59/34 19:42	07:42 18:22	07:48 08:44-09:27/43 16:11	08:41 15:38
14	04:45 21:58	05:41 20:59	06:43 07:26-07:57/31 19:39	07:44 18:19	07:50 08:44-09:26/42 16:09	08:42 15:38
15	04:46 21:56	05:43 20:57	06:45 07:27-07:56/29 19:36	07:46 18:17	07:53 08:44-09:26/42 16:07	08:43 15:38
16	04:48 21:55	05:45 20:54	06:47 07:29-07:54/25 19:34	07:48 18:14	07:55 08:46-09:26/40 16:06	08:44 15:38
17	04:49 21:54	05:47 20:52	06:49 07:31-07:51/20 19:31	07:50 18:12	07:57 08:47-09:26/39 16:04	08:45 15:38
18	04:51 21:52	05:49 20:49	06:51 07:34-07:48/14 19:28	07:52 18:09	07:59 08:47-09:25/38 16:02	08:46 15:38
19	04:52 21:51	05:51 20:47	06:53 19:26	07:54 18:07	08:01 08:49-09:26/37 16:01	08:47 15:38
20	04:54 21:49	05:53 20:44	06:55 19:23	07:56 18:04	08:03 08:51-09:25/34 15:59	08:48 15:38
21	04:56 21:48	05:55 20:42	06:57 19:20	07:59 18:02	08:05 08:52-09:24/32 15:57	08:48 15:39
22	04:57 21:46	05:57 20:39	06:59 19:18	08:01 17:59	08:07 08:55-09:23/28 15:56	08:49 15:39
23	04:59 21:44	05:59 20:37	07:01 19:15	08:03 17:57	08:09 09:00-09:24/24 15:55	08:49 15:40
24	05:01 21:43	06:01 20:34	07:03 19:12	08:05 17:54	08:11 09:01-09:23/22 15:53	08:50 15:40
25	05:03 21:41	06:03 07:40-07:53/13 20:32	07:05 19:09	07:07 16:52	08:13 09:02-09:22/20 15:52	08:50 15:41
26	05:04 21:39	06:05 07:37-07:56/19 20:29	07:07 19:07	07:09 08:55-09:01/6 16:50	08:15 09:04-09:21/17 15:50	08:50 15:42
27	05:06 21:37	06:07 07:34-07:58/24 20:27	07:09 19:04	07:11 08:50-09:05/15 16:47	08:17 09:06-09:19/13 15:49	08:50 15:43
28	05:08 21:35	06:09 07:33-08:00/27 20:24	07:11 19:01	07:14 08:48-09:07/19 16:45	08:19 09:08-09:17/9 15:48	08:51 15:44
29	05:10 21:33	06:11 07:31-08:01/30 20:22	07:13 18:59	07:16 08:46-09:09/23 16:43	08:20 15:47	08:51 15:44
30	05:12 21:32	06:13 07:30-08:02/32 20:19	07:15 18:56	07:18 08:45-09:14/29 16:40	08:22 15:46	08:51 15:45
31	05:14 21:30	06:15 07:29-08:03/34 20:16		07:20 08:43-09:17/34 16:38		08:51 15:47
Potential sun hours	529	469	385	324	247	216
Sum of minutes with flicker	0	179	607	126	986	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:

Mezares\_AB211223

Licensed user:

SIA Estonian, Latvian &amp; Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Anna / anna@environment.lv

Calculated:

26/06/2024 08:57/4.0.540

## SHADOW - Calendar per WTG

WTG: E12 - NORDEX N175/6.X 6800 175.0 !-! hub: 179.0 m (TOT: 266.5 m)

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.01	1.91	4.85	7.09	9.29	9.83	8.40	7.53	5.47	2.70	0.68	0.49

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
425	448	518	446	469	751	755	902	1,169	1,037	801	535	8,256

Idle start wind speed: Cut in wind speed from power curve

	January	February	March	April	May	June
1	08:50 15:48	08:14 09:06-09:36/30 16:45	07:10 17:47	06:49 19:53	05:32 20:55	04:36 05:35-05:55/20 21:52
2	08:50 15:49	08:12 09:07-09:35/28 16:47	07:08 17:49	06:46 19:55	05:30 20:57	04:35 05:35-05:55/20 21:54
3	08:50 15:51	08:11 09:08-09:34/26 16:49	07:05 17:52	06:43 19:57	05:28 20:59	04:34 05:36-05:55/19 21:55
4	08:49 15:52	08:09 09:09-09:33/24 16:52	07:03 17:54	06:41 19:59	05:25 21:01	04:33 05:36-05:54/18 21:57
5	08:49 15:53	08:06 09:09-09:29/20 16:54	07:00 17:56	06:38 20:01	05:23 21:03	04:32 05:37-05:54/17 21:57
6	08:48 15:55	08:04 09:11-09:26/15 16:56	06:58 07:27-07:39/12 17:58	06:35 20:03	05:21 21:05	04:31 05:38-05:54/16 21:59
7	08:48 15:56	08:02 09:13-09:24/11 16:58	06:55 07:24-07:41/17 18:00	06:33 20:05	05:19 21:07	04:30 05:38-05:53/15 22:00
8	08:47 15:58	08:00 09:17-09:21/4 17:01	06:52 07:21-07:42/21 18:02	06:30 20:07	05:17 21:09	04:29 05:39-05:53/14 22:01
9	08:46 15:59	07:58 17:03	06:50 07:20-07:44/24 18:05	06:27 20:09	05:15 21:11	04:28 05:40-05:52/12 22:02
10	08:46 16:01	07:56 17:05	06:47 07:19-07:44/25 18:07	06:25 20:11	05:12 05:43-05:45/2 21:13	04:28 05:41-05:52/11 22:03
11	08:45 16:03	07:54 17:07	06:45 07:18-07:44/26 18:09	06:22 20:14	05:10 05:40-05:49/9 21:15	04:27 05:41-05:51/10 22:04
12	08:44 16:04	07:51 17:10	06:42 07:16-07:44/28 18:11	06:19 20:16	05:08 05:38-05:51/13 21:17	04:27 05:42-05:51/9 22:05
13	08:43 09:19-09:23/4 16:06	07:49 17:12	06:39 07:17-07:45/28 18:13	06:17 20:18	05:06 05:36-05:52/16 21:19	04:26 05:44-05:51/7 22:06
14	08:42 09:18-09:26/8 16:08	07:47 17:14	06:37 07:16-07:44/28 18:15	06:14 20:20	05:04 05:35-05:53/18 21:21	04:26 05:45-05:51/6 22:06
15	08:41 09:16-09:27/11 16:10	07:45 17:16	06:34 07:15-07:44/29 18:17	06:12 20:22	05:02 05:34-05:54/20 21:23	04:26 05:45-05:49/4 22:07
16	08:40 09:15-09:29/14 16:12	07:42 17:19	06:31 07:16-07:44/28 18:19	06:09 20:24	05:00 05:33-05:54/21 21:25	04:25 22:08
17	08:38 09:13-09:30/17 16:14	07:40 17:21	06:29 07:16-07:43/27 18:21	06:07 20:26	05:33-05:55/22 21:27	04:25 22:08
18	08:37 09:12-09:32/20 16:16	07:38 17:23	06:26 07:16-07:41/25 18:24	06:04 20:28	05:32-05:55/23 21:29	04:25 22:09
19	08:36 09:10-09:32/22 16:17	07:35 17:25	06:23 07:17-07:40/23 18:26	06:02 20:30	05:32-05:55/23 21:31	04:25 22:09
20	08:34 09:08-09:33/25 16:19	07:33 17:28	06:21 07:18-07:38/20 18:28	05:59 20:32	05:32-05:56/24 21:33	04:25 22:09
21	08:33 09:07-09:35/28 16:22	07:30 17:30	06:18 07:19-07:36/17 18:30	05:56 20:34	05:31-05:56/25 21:34	04:25 22:10
22	08:32 09:06-09:35/29 16:24	07:28 17:32	06:15 07:21-07:32/11 18:32	05:54 20:36	05:32-05:56/24 21:36	04:25 22:10
23	08:30 09:06-09:35/29 16:26	07:26 17:34	06:13 18:34	05:52 20:39	05:32-05:57/25 21:38	04:26 22:10
24	08:28 09:05-09:36/31 16:28	07:23 17:36	06:10 18:36	05:49 20:41	05:32-05:56/24 21:40	04:26 22:10
25	08:27 09:05-09:36/31 16:30	07:21 17:39	06:07 18:38	05:47 20:43	05:32-05:57/25 21:41	04:26 22:10
26	08:25 09:06-09:37/31 16:32	07:18 17:41	06:05 18:40	05:44 20:45	05:33-05:57/24 21:43	04:27 22:10
27	08:24 09:06-09:37/31 16:34	07:16 17:43	06:02 18:42	05:42 20:47	05:32-05:56/24 21:45	04:27 05:49-05:52/3 22:10
28	08:22 09:06-09:37/31 16:36	07:13 17:45	05:59 18:44	05:39 20:49	05:33-05:56/23 21:46	04:28 05:47-05:53/6 22:10
29	08:20 09:06-09:37/31 16:38		06:57 19:47	05:37 20:51	05:33-05:56/23 21:48	04:28 05:47-05:54/7 22:09
30	08:18 09:05-09:36/31 16:41		06:54 19:49	05:35 20:53	05:34-05:56/22 21:49	04:29 05:47-05:55/8 22:09
31	08:16 09:05-09:36/31 16:43		06:51 19:51		05:34-05:56/22 21:51	
Potential sun hours	235	266	366	426	508	528
Sum of minutes with flicker	455	158	389	0	452	222

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:

Mezares\_AB211223

Licensed user:

SIA Estonian, Latvian &amp; Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Anna / anna@environment.lv

Calculated:

26/06/2024 08:57/4.0.540

## SHADOW - Calendar per WTG

WTG: E12 - NORDEX N175/6.X 6800 175.0 !-! hub: 179.0 m (TOT: 266.5 m)

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.01	1.91	4.85	7.09	9.29	9.83	8.40	7.53	5.47	2.70	0.68	0.49

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
425	448	518	446	469	751	755	902	1,169	1,037	801	535	8,256

Idle start wind speed: Cut in wind speed from power curve

	July	August	September	October	November	December
1	04:30 05:46-05:55/9 22:09	05:15 05:49-06:00/11 21:28	06:17 20:14	07:17 07:56-08:24/28 18:53	07:22 16:36	08:24 15:45
2	04:31 05:45-05:56/11 22:08	05:17 05:51-05:58/7 21:25	06:19 20:11	07:19 07:56-08:24/28 18:51	07:24 16:34	08:26 15:44
3	04:32 05:45-05:57/12 22:08	05:19 21:23	06:21 20:08	07:21 07:57-08:23/26 18:48	07:27 08:45-08:51/6 16:31	08:27 15:43
4	04:33 05:45-05:58/13 22:07	05:21 21:21	06:23 20:06	07:23 07:57-08:21/24 18:45	07:29 08:42-08:54/12 16:29	08:29 15:42
5	04:33 05:45-05:59/14 22:06	05:23 21:19	06:25 20:03	07:25 07:58-08:20/22 18:43	07:31 08:40-08:56/16 16:27	08:30 15:41
6	04:35 05:44-06:00/16 22:06	05:25 21:17	06:27 20:01	07:27 07:59-08:18/19 18:40	07:33 08:40-09:00/20 16:25	08:32 15:41
7	04:36 05:44-06:01/17 22:05	05:27 21:15	06:29 19:58	07:29 08:01-08:16/15 18:37	07:35 08:38-09:03/25 16:23	08:33 15:40
8	04:37 05:44-06:01/17 22:04	05:29 21:13	06:31 19:55	07:31 08:04-08:12/8 18:35	07:37 08:37-09:04/27 16:21	08:35 15:40
9	04:38 05:43-06:02/19 22:03	05:31 21:10	06:33 19:53	07:33 18:32	07:40 08:37-09:06/29 16:19	08:36 15:39
10	04:39 05:43-06:02/19 22:02	05:33 21:08	06:35 19:50	07:35 18:30	07:42 08:37-09:07/30 16:17	08:38 15:39
11	04:41 05:42-06:03/21 22:01	05:35 21:06	06:37 19:47	07:38 18:27	07:44 08:37-09:08/31 16:15	08:39 15:38
12	04:42 05:43-06:04/21 22:00	05:37 21:04	06:39 19:44	07:40 18:24	07:46 08:37-09:08/31 16:13	08:40 15:38
13	04:43 05:42-06:04/22 21:59	05:39 21:01	06:41 19:42	07:42 18:22	07:48 08:38-09:09/31 16:11	08:41 15:38
14	04:45 05:42-06:04/22 21:57	05:41 20:59	06:43 19:39	07:44 18:19	07:50 08:37-09:09/32 16:09	08:42 15:38
15	04:46 05:41-06:04/23 21:56	05:43 20:56	06:45 19:36	07:46 18:17	07:52 08:37-09:09/32 16:07	08:43 15:38
16	04:48 05:42-06:05/23 21:55	05:45 20:54	06:47 19:34	07:48 18:14	07:55 08:39-09:10/31 16:06	08:44 15:38
17	04:49 05:41-06:05/24 21:54	05:47 20:52	06:49 19:31	07:50 18:12	07:57 08:39-09:10/31 16:04	08:45 15:38
18	04:51 05:42-06:06/24 21:52	05:49 20:49	06:51 19:28	07:52 18:09	07:59 08:39-09:10/31 16:02	08:46 15:38
19	04:52 05:41-06:06/25 21:51	05:51 20:47	06:53 19:26	07:54 18:07	08:01 08:41-09:10/29 16:01	08:47 15:38
20	04:54 05:42-06:07/25 21:49	05:53 20:44	06:55 19:23	07:56 18:04	08:03 08:41-09:10/29 15:59	08:47 15:38
21	04:56 05:42-06:06/24 21:48	05:55 20:42	06:57 08:08-08:16/8 19:20	07:59 18:02	08:05 08:42-09:10/28 15:57	08:48 15:39
22	04:57 05:42-06:07/25 21:46	05:57 20:39	06:59 08:04-08:20/16 19:18	08:01 17:59	08:07 08:44-09:09/25 15:56	08:49 15:39
23	04:59 05:42-06:06/24 21:44	05:59 20:37	07:01 08:02-08:22/20 19:15	08:03 17:57	08:09 08:47-09:10/23 15:55	08:49 15:40
24	05:01 05:42-06:06/24 21:43	06:01 20:34	07:03 08:00-08:23/23 19:12	08:05 17:54	08:11 08:49-09:09/20 15:53	08:50 15:40
25	05:03 05:42-06:05/23 21:41	06:03 20:32	07:05 07:59-08:24/25 19:09	07:07 16:52	08:13 08:51-09:08/17 15:52	08:50 15:41
26	05:04 05:43-06:06/23 21:39	06:05 20:29	07:07 07:58-08:24/26 19:07	07:09 16:50	08:15 08:53-09:07/14 15:50	08:50 15:42
27	05:06 05:43-06:05/22 21:37	06:07 20:27	07:09 07:57-08:24/27 19:04	07:11 16:47	08:17 08:55-09:07/12 15:49	08:50 15:43
28	05:08 05:43-06:04/21 21:35	06:09 20:24	07:11 07:56-08:24/28 19:01	07:14 16:45	08:18 08:57-09:05/8 15:48	08:51 15:44
29	05:10 05:44-06:04/20 21:33	06:11 20:22	07:13 07:56-08:24/28 18:59	07:16 16:43	08:20 09:00-09:04/4 15:47	08:51 15:44
30	05:12 05:46-06:03/17 21:31	06:13 20:19	07:15 07:56-08:25/29 18:56	07:18 16:40	08:22 15:46	08:51 15:45
31	05:14 05:48-06:02/14 21:30	06:15 20:16		07:20 16:38		08:51 15:47
Potential sun hours	529	469	385	324	247	216
Sum of minutes with flicker	614	18	230	170	624	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:

Mezares\_AB211223

Licensed user:

SIA Estonian, Latvian & Lithuanian environment  
Vilandes 3-6  
LV-1010 Riga  
0037167242411  
Anna / anna@environment.lv  
Calculated:  
26/06/2024 08:57/4.0.540

## SHADOW - Calendar per WTG

WTG: E13 - NORDEX N175/6.X 6800 175.0 !-! hub: 179.0 m (TOT: 266.5 m)

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.01	1.91	4.85	7.09	9.29	9.83	8.40	7.53	5.47	2.70	0.68	0.49

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
425	448	518	446	469	751	755	902	1,169	1,037	801	535	8,256

Idle start wind speed: Cut in wind speed from power curve

	January	February	March	April	May	June
1	08:51 09:41-11:23/102 13:09-13:29/20 15:48 13:45-14:38/53 12:48-13:00/12	08:15 10:02-11:09/67 09:03-09:50/47 16:45 13:55-14:59/64	07:11 16:00-16:53/53 17:48 19:53	06:49 07:22-07:39/17 17:48 19:53	05:33 06:01-06:37/36 20:55 21:52 20:27-20:57/30	04:36 05:10-05:36/26 21:52 20:27-20:57/30
2	08:50 09:42-11:24/102 13:11-13:28/17 15:49 13:45-14:40/55 12:50-12:59/9	08:13 10:02-11:08/66 09:02-09:51/49 16:47 13:56-14:59/63	07:08 16:00-16:51/51 17:50 19:55	06:46 07:18-07:41/23 19:55 20:57	05:30 06:01-06:36/35 20:57 21:54 20:26-20:58/32	04:35 05:09-05:36/27 21:54 20:26-20:58/32
3	08:50 09:42-11:24/102 13:12-13:26/14 15:51 13:45-14:41/56 12:52-12:58/6	08:11 10:03-11:06/63 09:01-09:52/51 16:50 13:58-14:59/61	07:06 16:01-16:51/50 17:52 19:57	06:43 07:17-07:44/27 19:57 20:59	05:28 06:01-06:33/32 20:59 21:55 20:26-20:58/32	04:34 05:08-05:36/28 21:55 20:26-20:58/32
4	08:50 09:41-11:24/103 13:13-13:26/13 15:52 13:45-14:41/56	08:09 10:04-11:03/59 09:01-09:53/52 16:52 13:59-14:59/60 08:39-08:42/3	07:03 16:01-16:50/49 17:54 19:59	06:41 07:14-07:45/31 19:59 21:02	05:26 06:01-06:25/24 21:02 21:57 20:25-20:59/34	04:33 05:08-05:37/29 21:57 20:25-20:59/34
5	08:49 09:42-11:25/103 13:15-13:26/11 15:53 13:46-14:43/57	08:07 14:01-14:59/58 09:00-09:54/54 16:54 10:05-10:52/47 08:37-08:45/8	07:00 16:01-16:49/48 17:56 19:59	06:38 07:12-07:45/33 20:01 21:04	05:23 06:02-06:24/22 21:04 21:58 20:26-21:00/34	04:32 05:07-05:37/30 21:58 20:26-21:00/34
6	08:49 09:42-11:25/103 13:17-13:24/7 15:55 13:46-14:44/58	08:05 14:03-14:57/54 08:34-08:46/12 16:56 10:06-10:50/44 08:59-09:53/54	06:58 16:02-16:49/47 17:58 19:59	06:35 07:09-07:46/37 20:03 07:01-07:03/2	05:21 06:02-06:24/22 21:06 21:59 20:25-21:00/35	04:31 05:06-05:37/31 21:59 20:25-21:00/35
7	08:48 09:42-11:25/103 15:56 13:46-14:45/59	08:03 10:07-10:49/42 08:32-08:48/16 16:59 14:06-14:57/51 08:58-09:54/56	06:55 16:03-16:48/45 18:00 19:59	06:33 06:58-07:47/49 20:05 21:08	05:19 06:02-06:23/21 21:08 22:00 20:25-21:00/35	04:30 05:06-05:38/32 22:00 20:25-21:00/35
8	08:47 09:42-11:25/103 15:58 13:46-14:46/60	08:00 10:09-10:48/39 08:30-08:49/19 17:01 14:13-14:56/43 08:58-09:55/57	06:53 07:24-07:33/9 17:58 19:59	06:30 06:56-07:48/52 20:08 21:10	05:17 06:03-06:23/20 21:10 22:01 20:26-21:01/35	04:29 05:06-05:38/32 22:01 20:26-21:01/35
9	08:47 09:42-11:25/103 15:59 13:46-14:47/61	07:58 10:10-10:46/36 08:29-08:49/20 17:03 14:18-14:54/36 08:57-09:54/57	06:50 07:21-07:37/16 18:05 16:06-16:45/39	06:28 06:53-07:47/54 20:10 21:12	05:15 06:03-06:22/19 21:12 22:02 20:25-21:01/36	04:29 05:05-05:37/32 22:02 20:25-21:01/36
10	08:46 09:42-11:25/103 16:01 13:46-14:49/63	07:56 10:12-10:43/31 08:29-08:50/21 17:05 14:20-14:52/32 08:57-09:55/58	06:47 07:18-07:38/20 18:07 16:08-16:43/35	06:25 06:50-07:47/57 20:12 21:14	05:13 06:04-06:20/16 21:14 22:03 20:26-21:02/36	04:28 05:06-05:38/32 22:03 20:26-21:02/36
11	08:45 09:43-11:25/102 16:03 13:46-14:50/64	07:54 10:15-10:40/25 08:29-08:51/22 17:08 14:23-14:50/27 08:57-09:54/57	06:45 07:16-07:39/23 18:09 16:10-16:40/30	06:22 06:48-07:47/59 20:14 21:16	05:11 06:05-06:19/14 21:16 22:04 20:25-21:02/37	04:27 05:06-05:38/32 22:04 20:25-21:02/37
12	08:44 09:43-11:25/102 16:05 13:46-14:50/64	07:52 10:19-10:36/17 08:27-08:51/24 17:10 14:26-14:44/18 08:57-09:54/57	06:42 07:15-07:41/26 18:11 16:29-16:36/7	06:20 06:46-07:47/61 20:16 21:18	05:08 06:07-06:17/10 21:18 22:05 20:25-21:03/38	04:27 05:06-05:38/32 22:05 20:25-21:03/38
13	08:43 09:43-11:24/101 09:21-09:24/3 16:06 13:46-14:51/65	07:49 10:25-10:30/5 08:57-09:54/57 17:12 08:28-08:52/24	06:39 07:14-07:41/27 18:13 19:59	06:17 06:46-07:47/61 20:18 21:20	05:06 21:20 20:26-21:03/37 21:20 22:06 20:26-21:04/38	04:26 05:06-05:38/32 22:06 20:26-21:04/38
14	08:42 09:43-11:24/101 09:19-09:28/9 16:08 13:47-14:52/65	07:47 08:27-08:52/25 17:14 08:56-09:53/57	06:37 07:04-07:42/38 18:15 19:59	06:14 06:45-07:46/61 20:20 21:22	05:04 21:22 22:07 20:26-21:04/38 21:22 22:07 20:26-21:04/38	04:26 05:07-05:39/32 22:07 20:26-21:04/38
15	08:41 09:44-11:24/100 09:18-09:30/12 16:10 13:46-14:53/67	07:45 16:14-16:28/14 08:57-09:53/56 17:17 08:27-08:52/25	06:34 07:02-07:42/40 18:17 19:59	06:12 06:38-07:46/68 20:22 21:23	05:03 21:23 22:07 20:26-21:03/38 21:23 22:07 20:26-21:03/38	04:26 05:07-05:39/32 22:07 20:26-21:03/38
16	08:40 09:44-11:23/99 09:16-09:31/15 16:12 13:47-14:54/67	07:43 16:10-16:30/20 16:38-16:46/8 17:19 08:27-08:51/24 08:57-09:52/55	06:32 06:59-07:42/43 18:20 19:59	06:09 06:35-07:45/70 20:24 21:25	05:01 21:25 22:08 20:26-21:04/38 21:25 22:08 20:26-21:04/38	04:25 05:06-05:38/32 22:08 20:26-21:04/38
17	08:39 09:44-11:22/98 09:16-09:33/17 16:14 13:47-14:54/67	07:40 16:09-16:33/24 16:35-16:49/14 17:21 08:28-08:51/23 08:57-09:52/55	06:29 06:58-07:42/44 18:22 19:59	06:07 06:33-07:45/72 20:26 21:27	04:59 21:27 22:08 20:26-21:04/38 21:27 22:08 20:26-21:04/38	04:25 05:06-05:39/33 22:08 20:26-21:04/38
18	08:37 09:44-11:21/97 09:15-09:34/19 16:16 13:48-14:55/67	07:38 16:06-16:51/45 08:57-09:50/53 17:23 08:28-08:50/22	06:26 06:56-07:41/45 18:24 19:59	06:04 06:30-07:43/73 20:28 21:29	04:57 21:29 22:09 20:26-21:04/38 21:29 22:09 20:26-21:04/38	04:25 05:07-05:39/32 22:09 20:26-21:04/38
19	08:36 09:44-11:18/94 09:10-09:34/24 16:18 13:47-14:56/69	07:35 16:06-16:53/47 08:58-09:50/52 17:25 08:29-08:50/21	06:24 06:56-07:41/45 18:26 19:59	06:02 06:28-07:43/75 20:30 21:31	04:55 21:31 22:09 20:26-21:04/38 21:31 22:09 20:26-21:04/38	04:25 05:07-05:39/32 22:09 20:26-21:04/38
20	08:35 09:45-11:15/90 09:09-09:36/27 16:20 13:48-14:57/69	07:33 16:04-16:54/50 08:58-09:48/50 17:28 08:29-08:49/20	06:21 06:54-07:40/46 18:28 19:59	05:59 06:50-07:41/51 20:32 21:33	04:53 21:33 22:10 20:26-21:05/39 21:33 22:10 20:26-21:05/39	04:25 05:08-05:40/32 22:10 20:26-21:05/39
21	08:33 09:46-11:14/88 09:07-09:37/30 16:22 13:48-14:57/69	07:31 16:03-16:55/52 09:00-09:46/46 17:30 08:31-08:48/17	06:18 06:53-07:39/46 18:30 19:59	05:57 06:52-07:40/48 20:35 21:35	04:52 21:35 22:10 20:27-21:06/39 21:35 22:10 20:27-21:06/39	04:25 05:08-05:40/32 22:10 20:27-21:06/39
22	08:32 09:46-11:14/88 09:05-09:37/32 16:24 13:49-14:58/69	07:28 16:02-16:55/53 09:00-09:44/44 17:32 08:33-08:45/12	06:15 06:54-07:40/46 18:32 19:59	05:54 06:53-07:39/46 20:37 21:36	04:50 21:36 22:10 20:27-21:06/39 21:36 22:10 20:27-21:06/39	04:25 05:08-05:40/32 22:10 20:27-21:06/39
23	08:30 09:46-11:14/88 09:04-09:38/34 16:26 13:49-14:58/69	07:26 16:02-16:56/54 09:02-09:41/39 17:34 08:37-08:41/4	06:13 06:53-07:39/46 18:34 19:59	05:52 06:53-07:36/43 20:39 21:38	04:48 21:38 22:10 20:27-21:05/38 21:38 22:10 20:27-21:05/38	04:26 05:08-05:40/32 22:10 20:27-21:05/38
24	08:29 09:48-11:15/87 09:05-09:39/34 16:28 13:49-14:58/69	07:23 16:01-16:55/54 09:03-09:28/25 17:37 09:29-09:35/6	06:10 06:53-07:38/45 18:36 19:59	05:49 06:54-07:34/40 06:16-06:18/2 20:41 21:40	04:47 21:40 22:10 20:27-21:05/38 21:40 22:10 20:27-21:05/38	04:26 05:09-05:41/32 22:10 20:27-21:05/38
25	08:27 09:48-11:14/86 09:04-09:41/37 16:30 13:50-15:00/70	07:21 16:00-16:55/55 17:39 09:05-09:27/22	06:07 06:53-07:37/44 18:38 19:59	05:47 06:55-07:31/36 20:43 21:42	04:45 21:42 22:10 20:28-21:06/38 21:42 22:10 20:28-21:06/38	04:26 05:08-05:41/33 22:10 20:28-21:06/38
26	08:25 09:49-11:14/85 09:04-09:43/39 16:32 13:51-15:00/69	07:18 16:00-16:55/55 17:41 09:08-09:23/15	06:05 06:53-07:36/43 18:40 19:59	05:44 06:55-07:21/26 20:45 21:44	04:44 21:44 22:10 20:28-21:06/38 21:44 22:10 20:28-21:06/38	04:27 05:09-05:41/32 22:10 20:28-21:06/38
27	08:24 09:50-11:14/84 09:04-09:45/41 16:34 13:51-15:00/69	07:16 16:00-16:54/54 17:43 19:59	06:02 06:53-07:34/41 18:43 19:59	05:42 06:57-07:19/22 20:47 21:46	04:42 21:46 22:10 20:28-21:06/38 21:46 22:10 20:28-21:06/38	04:27 05:09-05:41/32 22:10 20:28-21:06/38
28	08:22 09:51-11:13/82 09:04-09:46/42 16:36 13:52-15:00/68	07:13 16:00-16:54/54 17:45 19:59	05:59 06:55-07:33/38 18:45 19:59	05:40 06:59-07:17/18 20:49 21:47	04:41 21:47 22:10 20:28-21:06/38 21:47 22:10 20:28-21:06/38	04:28 05:10-05:42/32 22:10 20:28-21:06/38
29	08:20 09:53-11:13/80 09:04-09:48/44 16:39 13:53-15:00/67	07:13 16:00-16:54/54 17:45 19:59	06:57 07:55-08:31/36 19:47 19:59	05:37 07:01-07:15/14 20:51 21:48	04:40 21:48 22:10 20:29-21:06/37 21:48 22:10 20:29-21:06/37	04:29 05:09-05:42/33 22:10 20:29-21:06/37
30	08:18 09:55-11:12/77 09:04-09:49/45 16:41 13:54-15:00/66	07:11 16:00-16:54/54 17:45 19:59	06:54 07:56-08:28/32 19:49 19:59	05:35 07:05-07:10/5 20:53 21:50	04:38 21:50 22:10 20:29-21:06/37 21:50 22:10 20:29-21:06/37	04:29 05:10-05:42/32 22:10 20:29-21:06/37
31	08:17 09:57-11:11/74 09:04-09:50/46 16:43 13:54-14:59/65	07:11 16:00-16:54/54 17:45 19:59	06:51 08:14-08:25/11 19:51 07:59-08:12/13	05:35 07:05-07:10/5 20:53 21:50	04:37 21:50 22:10 20:29-21:06/37 21:50 22:10 20:29-21:06/37	04:29 05:10-05:42/32 22:10 20:29-21:06/37
Potential sun hours	235	266	366	426	508	529
Sum of minutes with flicker	5581	3405	1359	1679	650	2040

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:

Mezares\_AB211223

Licensed user:

SIA Estonian, Latvian & Lithuanian environment  
Vilandes 3-6  
LV-1010 Riga  
0037167242411  
Anna / anna@environment.lv  
Calculated:  
26/06/2024 08:57/4.0.540

## SHADOW - Calendar per WTG

WTG: E13 - NORDEX N175/6.X 6800 175.0 !-! hub: 179.0 m (TOT: 266.5 m)

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.01	1.91	4.85	7.09	9.29	9.83	8.40	7.53	5.47	2.70	0.68	0.49

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
425	448	518	446	469	751	755	902	1,169	1,037	801	535	8,256

Idle start wind speed: Cut in wind speed from power curve

	July	August	September	October	November	December
1	04:30 05:10-05:43/33 22:09 20:29-21:06/37	05:16 06:17-06:28/11 21:28	06:17 06:47-07:46/59 20:14	07:17 07:54-08:20/26 18:54	07:23 09:41-10:14/33 07:58-08:20/22 16:36	08:24 09:25-11:07/102 15:45
2	04:31 05:10-05:43/32 22:08 20:30-21:06/36	05:18 06:15-06:30/15 21:26	06:19 06:49-07:46/57 20:11	07:19 07:54-08:19/25 16:51-17:02/11 18:51	07:25 09:39-10:16/37 07:58-08:19/21 16:34	08:26 09:26-11:08/102 15:44
3	04:32 05:10-05:43/33 22:08 20:30-21:07/37	05:19 06:14-06:31/17 21:24	06:21 06:51-07:45/54 20:09	07:21 07:55-08:17/22 18:48	07:27 09:38-10:18/40 08:00-08:19/19 16:32	08:27 09:26-11:08/102 15:43
4	04:33 05:11-05:43/32 22:07 20:31-21:07/36	05:21 06:13-06:32/19 21:22	06:23 06:53-07:45/52 20:06	07:23 07:57-08:15/18 18:46	07:29 09:37-10:19/42 08:02-08:17/15 16:29	08:29 09:26-11:09/103 15:42
5	04:34 05:11-05:43/32 22:07 20:31-21:07/36	05:23 06:13-06:33/20 21:19	06:25 06:55-07:44/49 20:03	07:25 07:59-08:12/13 18:43	07:31 13:32-14:27/55 08:05-08:17/12 16:27	08:31 09:27-11:10/103 15:42
6	04:35 05:12-05:43/31 22:06 20:32-21:07/35	05:25 06:11-06:33/22 21:17	06:27 07:05-07:42/37 20:01	07:27 16:40-17:23/43 18:40	07:33 10:25-10:27/2 09:35-10:22/47 08:07-08:15/8 16:25	08:32 09:28-11:11/103 13:03-13:10/7 15:41
7	04:36 05:13-05:44/31 22:05 20:32-21:07/35	05:27 06:11-06:33/22 21:15	06:29 07:07-07:40/33 19:58	07:29 16:38-17:24/46 18:38	07:36 09:34-10:33/59 08:31-09:23/52 16:23	08:34 09:28-11:11/103 13:01-13:12/11 15:40
8	04:37 05:14-05:44/30 22:04 20:33-21:06/33	05:29 06:11-06:34/23 21:13	06:31 07:08-07:39/31 19:55	07:32 16:36-17:24/48 18:35	07:40 09:33-10:39/66 08:33-09:22/49 16:21	08:35 09:29-11:12/103 13:01-13:14/13 15:40
9	04:38 05:15-05:44/29 22:03 20:33-21:06/33	05:31 06:11-06:34/23 21:11	06:33 07:10-07:37/27 19:53	07:34 16:35-17:24/49 18:32	07:42 09:33-10:41/68 08:35-09:22/47 16:17	08:39 09:31-11:13/102 13:00-13:17/17 15:39
10	04:39 05:16-05:44/28 22:02 20:33-21:06/33	05:33 06:11-06:43/32 21:08	06:35 07:11-07:35/24 19:50	07:36 16:35-17:25/50 18:30	07:44 09:28-10:42/74 08:35-09:21/46 16:15	08:39 09:31-11:13/102 13:00-13:19/19 15:38
11	04:41 05:18-05:45/27 22:01 20:34-21:05/31	05:35 06:11-06:45/34 21:06	06:37 07:14-07:32/18 19:47	07:38 16:34-17:25/51 18:27	07:46 09:25-10:43/78 08:35-09:20/45 16:13	08:40 09:33-11:15/102 13:00-13:21/21 15:38
12	04:42 05:19-05:44/25 22:00 20:35-21:06/31	05:37 06:10-06:46/36 21:04	06:39 08:06-08:16/10 07:22-07:25/3 19:45	07:40 16:33-17:26/53 18:25	07:51 09:23-10:45/82 08:35-09:18/43 16:09	08:41 09:33-11:15/102 13:00-13:21/21 15:38
13	04:43 05:20-05:44/24 21:59 20:36-21:05/29	05:39 07:11-07:20/9 21:01	06:41 07:48-08:19/31 19:42	07:42 16:33-17:26/53 18:22	07:53 09:23-10:46/83 08:37-09:17/40 16:08	08:42 09:33-11:15/102 13:00-13:21/21 15:38
14	04:44 05:21-05:44/23 21:58 20:36-21:04/28	05:41 07:08-07:23/15 20:59	06:43 07:46-08:21/35 19:39	07:44 16:32-17:27/55 18:19	07:55 09:22-10:47/85 08:37-09:16/39 16:06	08:43 09:34-11:15/101 13:00-13:22/22 15:38
15	04:46 05:23-05:44/21 21:57 20:37-21:03/26	05:43 07:06-07:25/19 20:57	06:45 07:44-08:23/39 19:37	07:46 16:33-17:27/54 18:17	07:57 09:21-10:49/88 08:39-09:13/34 16:01	08:44 09:35-11:16/101 13:00-13:23/23 15:38
16	04:48 05:24-05:44/20 21:55 20:38-21:03/25	05:45 07:04-07:27/23 20:54	06:47 07:43-08:24/41 19:34	07:48 16:33-17:27/54 18:14	07:59 09:21-10:49/88 08:40-09:12/32 15:59	08:45 09:35-11:16/101 13:00-13:24/24 15:38
17	04:49 05:25-05:43/18 21:54 20:41-21:01/20	05:47 07:03-07:28/25 06:19-06:53/34 20:52	06:49 07:42-08:24/42 19:31	07:50 16:32-17:27/55 18:12	07:57 09:21-10:47/86 08:37-09:14/37 16:04	08:46 09:37-11:17/100 13:01-13:25/24 15:38
18	04:51 05:27-05:43/16 21:52 20:42-20:59/17	05:49 07:01-07:37/36 20:49	06:51 07:41-08:25/44 19:29	07:52 16:32-17:27/55 18:09	07:59 09:22-10:49/87 08:39-09:13/34 16:02	08:47 09:38-11:18/100 13:01-13:25/24 15:38
19	04:52 05:28-05:42/14 21:51 20:45-20:58/13	05:51 07:00-07:40/40 20:47	06:53 07:40-08:25/45 19:26	07:55 16:32-17:26/54 09:33-10:13/40 18:07	08:01 09:21-10:49/88 08:39-09:13/34 16:01	08:48 09:38-11:18/100 13:00-13:26/24 15:39
20	04:54 05:30-05:42/12 21:49 20:48-20:54/6	05:53 06:59-07:42/43 20:45	06:55 07:40-08:25/45 19:23	07:57 16:34-17:25/51 09:30-10:16/45 18:04	08:03 09:21-10:49/88 08:40-09:12/32 15:59	08:49 09:38-11:18/100 13:02-13:27/25 15:39
21	04:56 05:31-05:41/10 21:48 20:50-05:41/10	05:55 06:58-07:43/45 20:42	06:57 07:39-08:25/46 19:20	07:59 16:34-17:25/51 09:30-10:17/47 18:02	08:05 09:21-10:49/88 08:43-09:13/30 15:58	08:50 09:40-11:20/100 13:04-13:28/24 15:41
22	04:57 05:33-05:40/7 21:46 20:51-05:34/38/4	05:57 06:56-07:45/49 20:40	06:59 07:39-08:25/46 19:18	08:01 16:34-17:23/49 09:28-10:18/50 17:59	08:07 09:21-10:51/90 08:45-09:12/27 15:56	08:51 09:41-11:21/101 13:05-13:29/24 15:43
23	04:59 05:34-05:38/4 21:45 20:51-05:34/38/4	05:59 06:30-07:46/76 20:37	07:01 07:39-08:25/46 19:15	08:03 16:36-17:23/47 09:28-10:20/52 17:57	08:09 09:21-10:55/94 08:47-09:12/25 15:55	08:52 09:41-11:21/101 13:05-13:29/24 15:43
24	05:01 21:43 25 05:03	06:01 06:32-07:46/74 20:35	07:03 07:39-08:25/46 19:12	08:05 16:37-17:21/44 09:27-10:21/54 17:55	08:11 09:21-10:58/97 08:52-09:11/19 15:53	08:53 09:41-11:21/101 13:05-13:29/24 15:43
25	05:04 21:41 26 05:04	06:03 06:34-07:47/73 20:32	07:05 07:39-08:25/46 19:10	08:07 15:38-16:02/24 16:05-16:18/13 16:52	08:13 09:21-11:00/99 08:53-09:10/17 15:52	08:54 09:41-11:21/101 13:05-13:29/24 15:43
26	05:05 21:39 27 05:06	06:05 06:36-07:47/71 20:29	07:07 07:40-08:25/45 19:07	08:09 15:41-16:00/19 16:10-16:15/5 16:50	08:15 09:23-11:02/99 08:55-09:10/15 15:51	08:55 09:41-11:21/101 13:05-13:29/24 15:43
27	05:07 21:37 28 05:08	06:07 06:38-07:47/69 20:27	07:09 07:41-08:24/43 19:04	07:12 15:44-15:56/12 08:26-09:23/57 16:47	08:17 09:23-11:03/100 08:57-09:09/12 15:49	08:56 09:41-11:21/101 13:05-13:29/24 15:43
28	05:09 21:36 29 05:10	06:09 06:39-07:47/68 20:24	07:11 07:42-08:23/41 19:02	07:14 15:56-08:12/25 08:26-09:24/58 16:45	08:19 09:23-11:04/101 08:59-09:08/9 15:48	08:57 09:41-11:22/102 13:06-13:29/23 15:43
29	05:11 21:34 30 05:12	06:11 06:46-07:47/61 20:22	07:13 07:44-08:23/39 18:59	07:16 09:53-10:02/9 07:57-08:21/24 16:43	08:21 09:24-11:05/101 09:02-09:05/3 15:47	08:58 09:41-11:22/102 13:06-13:29/23 15:43
30	05:13 21:32 31 05:14	06:13 06:46-07:47/61 20:19	07:15 07:48-08:22/34 18:56	07:18 09:48-10:06/18 07:58-08:21/24 16:40	08:22 09:24-11:06/102 15:46	08:59 09:41-11:23/102 13:06-13:29/23 15:43
Potential sun hours	21:30	06:20-06:26/6 20:17	06:15 06:46-07:47/61 20:17	06:38 13:51-14:19/28 08:27-09:24/57 324	06:38 13:51-14:19/28 08:27-09:24/57 324	06:38 13:51-14:19/28 08:27-09:24/57 324
Sum of minutes with flicker	1138	1515	1223	2424	5364	5655

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:

Mezares\_AB211223

Licensed user:

SIA Estonian, Latvian &amp; Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Anna / anna@environment.lv

Calculated:

26/06/2024 08:57/4.0.540

## SHADOW - Calendar per WTG

WTG: E14 - NORDEX N175/6.X 6800 175.0 !-! hub: 179.0 m (TOT: 266.5 m)

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.01	1.91	4.85	7.09	9.29	9.83	8.40	7.53	5.47	2.70	0.68	0.49

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
425	448	518	446	469	751	755	902	1,169	1,037	801	535	8,256

Idle start wind speed: Cut in wind speed from power curve

	January	February	March	April	May	June
1	08:51 09:35-10:35/60 15:48	08:15 09:26-10:36/70 16:45	07:11 07:38-08:27/49 17:48	06:49 07:14-07:25/11 19:53 08:04-08:10/6	05:33 06:17-07:16/59 20:55	04:36 05:14-05:37/23 21:52 05:48-06:27/39
2	08:50 09:36-10:36/60 15:49	08:13 09:26-10:36/70 16:48	07:08 07:35-08:26/51 17:50	06:46 07:11-07:26/15 19:55	05:30 06:17-07:15/58 20:57	04:35 05:14-05:37/23 21:54 05:48-06:27/39
3	08:50 09:35-10:36/61 15:51	08:11 09:26-10:36/70 16:50	07:06 07:32-08:26/54 17:52	06:43 07:09-07:28/19 19:57	05:28 06:17-07:15/58 20:59	04:34 05:15-05:38/23 21:55 05:48-06:27/39
4	08:50 09:35-10:37/62 15:52	08:09 09:26-10:35/69 16:52	07:03 07:29-08:24/55 17:54	06:41 07:06-07:28/22 19:59	05:26 06:17-07:14/57 21:02	04:33 05:15-05:38/23 21:56 05:50-06:28/38
5	08:49 09:36-10:38/62 15:53	08:07 09:27-10:35/68 16:54	07:00 07:26-08:23/57 17:56	06:38 07:03-07:28/25 20:01	05:23 06:17-07:13/56 21:04	04:32 05:15-05:38/23 21:58 05:50-06:28/38
6	08:49 09:35-10:38/63 15:55	08:05 09:26-10:33/67 16:56	06:58 07:24-08:21/57 17:58	06:35 07:01-07:29/28 20:03	05:21 06:17-07:13/56 21:06	04:31 05:14-05:38/24 21:59 05:50-06:28/38
7	08:48 09:35-10:39/64 15:56	08:03 09:27-10:33/66 16:59	06:55 07:21-08:19/58 18:01	06:33 06:58-07:29/31 20:05	05:19 06:17-07:12/55 21:08	04:30 05:15-05:39/24 22:00 05:51-06:28/37
8	08:47 09:35-10:39/64 15:58	08:00 09:27-10:32/65 17:01	06:53 07:18-08:15/57 18:03	06:30 06:56-07:29/33 20:08	05:17 06:18-07:11/53 21:10	04:29 05:15-05:39/24 22:01 05:51-06:28/37
9	08:47 09:35-10:40/65 16:00	07:58 09:27-10:30/63 17:03	06:50 07:16-08:06/50 18:05	06:28 06:53-07:28/35 20:10	05:15 05:55-07:09/74 21:12	04:29 05:16-05:39/23 22:02 05:50-06:27/37
10	08:46 09:35-10:40/65 16:01	07:56 09:28-10:28/60 17:05	06:47 07:13-08:03/50 18:07	06:25 06:51-07:27/36 20:12	05:13 05:54-07:08/74 21:14	04:28 05:15-05:39/24 22:03 05:51-06:28/37
11	08:45 09:35-10:41/66 16:03	07:54 09:29-10:26/57 17:08	06:45 07:10-08:01/51 18:09	06:22 06:49-07:27/38 20:14	05:11 05:52-07:06/74 21:16	04:27 05:15-05:40/24 22:04 05:52-06:28/36
12	08:44 09:36-10:41/65 16:05	07:52 09:29-10:21/52 17:10	06:42 07:08-08:01/53 18:11	06:20 06:46-07:26/40 20:16	05:09 05:51-07:04/73 21:18	04:27 05:16-05:39/23 22:05 05:52-06:28/36
13	08:43 09:35-10:41/66 16:06	07:49 09:30-10:11/41 17:12	06:40 07:05-08:00/55 18:13	06:17 06:45-07:25/40 20:18	05:07 05:51-07:03/72 21:20	04:26 05:16-05:39/23 22:06 05:52-06:28/36
14	08:42 09:35-10:41/66 16:08	07:47 09:31-10:07/36 17:14	06:37 07:03-07:58/55 18:15	06:15 06:43-07:23/40 20:20	05:05 05:50-07:03/73 21:22	04:26 05:17-05:40/23 22:07 05:53-06:28/35
15	08:41 09:36-10:41/65 16:10	07:45 09:32-10:05/33 17:17	06:34 07:01-07:58/57 18:18	06:12 06:42-07:21/39 20:22	05:03 05:49-07:02/73 21:23	04:26 05:17-05:40/23 22:07 05:53-06:29/36
16	08:40 09:35-10:42/67 16:12	07:43 09:33-10:03/30 17:19	06:32 07:00-07:57/57 18:20	06:09 06:41-07:18/37 20:24	05:01 05:49-07:01/72 21:25	04:26 05:17-05:41/24 22:08 05:53-06:28/35
17	08:39 09:33-10:42/69 16:14	07:40 09:35-10:02/27 17:21	06:29 06:58-07:55/57 18:22	06:07 06:41-07:14/33 20:26	04:59 05:49-07:01/72 21:27	04:25 05:17-05:40/23 22:08 05:53-06:28/35
18	08:37 09:32-10:42/70 16:16	07:38 09:37-09:59/22 17:23	06:26 06:57-07:53/56 18:24	06:04 06:40-07:14/34 20:28	04:57 05:48-07:00/72 21:29	04:25 05:17-05:40/23 22:09 05:53-06:28/35
19	08:36 09:31-10:41/70 16:18	07:35 08:03-08:24/21 17:26	06:24 06:56-07:52/56 18:26	06:02 06:40-07:15/35 20:30	04:55 05:48-07:00/72 21:31	04:25 05:18-05:41/23 22:09 05:53-06:28/35
20	08:35 09:31-10:42/71 16:20	07:33 08:00-08:24/24 17:28	06:21 06:55-07:49/54 18:28	05:59 06:40-07:17/37 20:33	04:53 05:48-06:26/38 21:33	04:25 05:18-05:41/23 22:10 05:55-06:29/34
21	08:33 09:30-10:41/71 16:22	07:31 07:58-08:26/28 17:30	06:18 06:54-07:45/51 18:30	05:57 06:29-07:16/47 20:35	04:52 05:24-05:28/4 06:28-06:58/30 21:35	04:25 05:18-05:41/23 22:10 05:55-06:29/34
22	08:32 09:29-10:41/72 16:24	07:28 07:55-08:26/31 17:32	06:16 06:55-07:38/43 18:32	05:54 06:26-07:17/51 20:37	04:50 05:22-05:30/8 06:28-06:57/29 21:36	04:26 05:18-05:41/23 22:10 05:55-06:29/34
23	08:30 09:28-10:40/72 16:26	07:26 07:53-08:28/35 17:34	06:13 06:54-07:37/43 18:34	05:52 06:24-07:17/53 20:39	04:48 05:21-05:32/11 06:30-06:56/26 21:38	04:26 05:18-05:41/23 22:10 05:55-06:29/34
24	08:29 09:29-10:40/71 16:28	07:23 07:50-08:28/38 17:37	06:10 06:54-07:36/42 18:36	05:49 06:22-07:17/55 20:41	04:47 05:19-05:32/13 06:30-06:55/25 21:40	04:26 05:19-05:42/23 22:10 05:55-06:30/35
25	08:27 09:28-10:39/71 16:30	07:21 07:48-08:28/40 17:39	06:07 06:54-07:36/42 18:38	05:47 06:21-07:18/57 20:43	04:45 05:18-05:33/15 06:32-06:54/22 21:42	04:26 05:19-05:42/23 22:10 05:55-06:30/35
26	08:25 09:28-10:38/70 16:32	07:18 07:45-08:28/43 17:41	06:05 06:54-07:34/40 18:41	05:44 06:20-07:17/57 20:45	04:44 05:17-05:34/17 06:34-06:53/19 21:43	04:27 05:19-05:43/24 22:10 05:56-06:31/35
27	08:24 09:27-10:37/70 16:34	07:16 07:42-08:27/45 17:43	06:02 06:55-07:33/38 18:43	05:42 06:19-07:17/58 20:47	04:42 05:16-05:35/19 06:35-06:51/16 21:45	04:27 05:19-05:42/23 22:10 05:55-06:31/36
28	08:22 09:27-10:37/70 16:37	07:13 07:40-08:28/48 17:45	05:59 06:56-07:32/36 18:45	05:40 06:19-07:17/58 20:49	04:41 05:14-05:35/21 06:37-06:49/12 21:46	04:28 05:20-05:43/23 22:10 05:56-06:31/35
29	08:20 09:27-10:37/70 16:39		06:57 07:56-08:29/33 19:47	05:37 06:18-07:17/59 20:51	04:40 05:14-05:36/22 06:40-06:46/6 21:48	04:29 05:19-05:43/24 22:10 05:55-06:31/36
30	08:18 09:27-10:37/70 16:41		06:54 07:57-08:27/30 19:49	05:35 06:18-07:17/59 20:53	04:38 05:14-05:36/22 21:50	04:29 05:20-05:43/23 22:09 05:56-06:32/36
31	08:17 09:27-10:37/70 16:43		06:51 08:00-08:24/24 19:51		04:37 05:14-05:36/22 21:51	
Potential sun hours	235	266	366	426	508	528
Sum of minutes with flicker	2078	1365	1868	1188	2159	1780

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:

Mezares\_AB211223

Licensed user:

SIA Estonian, Latvian &amp; Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Anna / anna@environment.lv

Calculated:

26/06/2024 08:57/4.0.540

## SHADOW - Calendar per WTG

WTG: E14 - NORDEX N175/6.X 6800 175.0 !-! hub: 179.0 m (TOT: 266.5 m)

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.01	1.91	4.85	7.09	9.29	9.83	8.40	7.53	5.47	2.70	0.68	0.49

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
425	448	518	446	469	751	755	902	1,169	1,037	801	535	8,256

Idle start wind speed: Cut in wind speed from power curve

	July	August	September	October	November	December
1	04:30 05:20-05:44/24 22:09 05:56-06:32/36	05:16 06:03-07:15/72 21:28	06:17 06:48-07:26/38 20:14	07:17 07:46-08:40/54 18:54 18:02-18:21/19	07:23 08:57-09:58/61 16:36	08:24 09:17-10:23/66 15:45
2	04:31 05:20-05:43/23 22:08 05:55-06:32/37	05:18 06:03-07:17/74 21:26	06:19 06:50-07:26/36 20:11	07:19 07:48-08:40/52 18:51 18:04-18:18/14	07:25 08:57-10:00/63 16:34	08:26 09:18-10:23/65 15:44
3	04:32 05:20-05:44/24 22:08 05:56-06:33/37	05:20 06:05-07:19/74 21:24	06:21 06:51-07:26/35 20:09	07:21 07:50-08:41/51 18:48 18:07-18:15/8	07:27 08:57-10:02/65 16:32	08:27 09:18-10:23/65 15:43
4	04:33 05:20-05:44/24 22:07 05:56-06:33/37	05:21 06:06-07:20/74 21:22	06:23 06:53-07:26/33 20:06	07:23 07:52-08:42/50 18:46	07:29 08:56-10:03/67 16:29	08:29 09:19-10:23/64 15:42
5	04:34 05:20-05:44/24 22:07 05:56-06:33/37	05:23 06:28-07:21/53 21:19	06:25 06:55-07:26/31 20:03	07:25 07:54-08:43/49 18:43 08:45-08:49/4	07:31 08:56-10:03/67 16:27	08:31 09:20-10:24/64 15:42
6	04:35 05:21-05:44/23 22:06 05:56-06:34/38	05:25 06:27-07:21/54 21:17	06:27 06:57-07:25/28 20:01	07:27 07:56-08:54/58 18:40	07:33 08:56-10:05/69 16:25	08:32 09:21-10:24/63 15:41
7	04:36 05:21-05:45/24 22:05 05:56-06:34/38	05:27 06:26-07:22/56 21:15	06:29 06:59-07:24/25 19:58	07:30 07:58-08:56/58 18:38	07:36 08:56-10:05/69 16:23	08:34 09:22-10:24/62 15:40
8	04:37 05:21-05:45/24 22:04 05:56-06:34/38	05:29 06:26-07:23/57 21:13	06:31 07:00-07:23/23 19:55	07:32 08:00-08:57/57 18:35	07:38 08:57-10:06/69 16:21	08:35 09:23-10:25/62 15:40
9	04:38 05:21-05:45/24 22:03 05:56-06:35/39	05:31 06:26-07:24/58 21:11	06:33 07:02-07:21/19 19:53	07:34 08:03-08:59/56 18:32	07:40 08:57-10:07/70 16:19	08:36 09:23-10:25/62 15:39
10	04:39 05:21-05:44/23 22:02 05:56-06:35/39	05:33 06:26-07:24/58 21:08	06:35 07:04-07:20/16 19:50	07:36 08:05-09:00/55 18:30	07:42 08:56-10:07/71 16:17	08:38 09:25-10:25/60 15:39
11	04:41 05:22-05:45/23 22:01 05:57-06:36/39	05:35 06:26-07:25/59 21:06	06:37 07:06-07:18/12 19:47	07:38 08:07-09:00/53 18:27	07:44 08:57-10:08/71 16:15	08:39 09:25-10:25/60 15:39
12	04:42 05:22-05:45/23 22:00 05:57-06:36/39	05:37 06:25-07:24/59 21:04	06:39 07:52-08:15/23 19:45	07:40 08:10-09:00/50 18:25	07:46 08:57-10:08/71 16:13	08:40 09:27-10:26/59 15:38
13	04:43 05:23-05:45/22 21:59 05:56-06:36/40	05:39 06:26-07:24/58 21:01	06:41 07:49-08:18/29 19:42	07:42 08:11-09:00/49 18:22	07:49 08:59-10:09/70 16:11	08:41 09:28-10:27/59 15:38
14	04:45 05:23-05:44/21 21:58 05:56-06:36/40	05:41 06:26-07:24/58 20:59	06:43 07:47-08:19/32 19:39	07:44 08:13-09:00/47 18:20	07:51 08:59-10:09/70 16:09	08:43 09:28-10:27/59 15:38
15	04:46 05:24-05:45/21 06:48-06:57/9 21:56 05:57-06:37/40	05:43 06:26-07:25/59 20:57	06:45 07:45-08:21/36 19:37	07:46 08:16-09:00/44 18:17	07:53 08:59-10:09/70 16:08	08:44 09:29-10:27/58 15:38
16	04:48 05:24-05:44/20 06:45-06:59/14 21:55 05:57-06:36/39	05:45 06:27-07:25/58 20:54	06:47 07:44-08:22/38 19:34	07:48 08:18-09:00/42 18:14	07:55 09:01-10:11/70 16:06	08:45 09:30-10:27/57 15:38
17	04:49 05:26-05:44/18 06:43-07:01/18 21:54 05:56-06:36/40	05:47 06:27-07:24/57 20:52	06:49 07:43-08:23/40 19:31	07:50 08:20-08:59/39 18:12	07:57 09:01-10:12/71 16:04	08:45 09:31-10:28/57 15:38
18	04:51 05:27-05:43/16 06:42-07:03/21 21:52 05:57-06:37/40	05:49 06:28-07:24/56 20:49	06:51 07:42-08:23/41 19:29	07:52 08:22-08:58/36 18:09	07:59 09:03-10:14/71 16:02	08:46 09:46-10:29/43 15:38
19	04:53 05:28-05:42/14 06:41-07:04/23 21:51 05:57-06:37/40	05:51 06:28-07:23/55 20:47	06:53 07:41-08:23/42 19:26	07:55 08:25-08:58/33 18:07	08:01 09:03-10:15/72 16:01	08:47 09:46-10:28/42 15:38
20	04:54 05:30-05:42/12 06:40-07:06/26 21:49 05:57-06:37/40	05:53 06:30-07:22/52 20:45	06:55 07:41-08:23/42 19:23	07:57 08:27-08:57/30 18:04	08:03 09:04-10:16/72 15:59	08:48 09:46-10:29/43 15:39
21	04:56 05:31-05:40/9 06:39-07:06/27 21:48 05:57-06:36/39	05:55 06:31-07:22/51 20:42	06:57 07:40-08:23/43 19:20	07:59 08:29-08:56/27 18:02	08:05 09:05-10:16/71 15:58	08:48 09:47-10:30/43 15:39
22	04:58 05:33-05:39/6 06:38-07:08/30 21:46 05:58-06:37/39	05:57 06:34-07:21/47 20:40	06:59 07:40-08:29/49 19:18	08:01 08:31-08:54/23 17:59	08:07 09:07-10:18/71 15:56	08:49 09:47-10:30/43 15:40
23	04:59 05:35-05:37/2 06:37-07:08/31 21:45 05:57-06:36/39	05:59 06:44-07:20/36 20:37	07:01 07:40-08:33/53 19:15	08:03 08:34-08:53/19 17:57	08:09 09:08-10:18/70 15:55	08:49 09:48-10:31/43 15:40
24	05:01 05:58-06:36/38 21:43 06:37-07:09/32	06:01 06:43-07:19/36 20:35	07:03 07:40-08:35/55 19:12	08:05 10:06-10:30/24 17:55	08:11 09:09-10:19/70 15:53	08:50 09:49-10:31/42 15:41
25	05:03 05:59-07:11/72 21:41	06:03 06:43-07:18/35 20:32	07:05 07:40-08:36/56 19:10	08:07 09:04-09:32/28 16:52	08:13 09:11-10:19/68 15:52	08:50 09:49-10:31/42 15:41
26	05:05 05:58-07:11/73 21:39	06:05 06:43-07:16/33 20:29	07:07 07:40-08:38/58 19:07	08:09 09:03-09:34/31 16:50	08:15 09:13-10:20/67 15:51	08:50 09:49-10:32/43 15:42
27	05:06 05:59-07:12/73 21:37	06:07 06:44-07:21/37 20:27	07:09 07:41-08:38/57 19:04	08:11 09:01-09:35/34 16:48	08:17 09:15-10:21/66 15:49	08:51 09:35-10:32/57 15:43
28	05:08 06:00-07:13/73 21:36	06:09 06:43-07:22/39 20:24	07:11 07:42-08:39/57 19:02	08:14 09:00-09:37/37 16:45	08:19 09:15-10:21/66 15:48	08:51 09:35-10:33/58 15:44
29	05:10 06:00-07:12/72 21:34	06:11 06:44-07:24/40 20:22	07:13 07:43-08:39/56 18:59	08:16 09:00-09:41/41 16:43	08:21 09:16-10:22/66 15:47	08:51 09:35-10:34/59 15:45
30	05:12 06:01-07:13/72 21:32	06:13 06:45-07:25/40 20:19	07:15 07:44-08:39/55 18:56	08:18 08:58-09:52/54 16:41	08:22 09:17-10:22/65 15:46	08:51 09:36-10:34/58 15:46
31	05:14 06:02-07:14/72 21:30	06:15 06:46-07:26/40 20:17	07:17 07:45-08:39/54 18:54	08:20 08:57-09:55/58 16:38	08:24 09:18-10:23/66 15:45	08:51 09:36-10:35/59 15:47
Potential sun hours	529	469	385	324	247	216
Sum of minutes with flicker	2110	1666	1492	1435	2059	1828

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:

Mezares\_AB211223

Licensed user:

SIA Estonian, Latvian &amp; Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Anna / anna@environment.lv

Calculated:

26/06/2024 08:57/4.0.540

## SHADOW - Calendar per WTG

WTG: E15 - NORDEX N175/6.X 6800 175.0 !-! hub: 179.0 m (TOT: 266.5 m)

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.01	1.91	4.85	7.09	9.29	9.83	8.40	7.53	5.47	2.70	0.68	0.49

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
425	448	518	446	469	751	755	902	1,169	1,037	801	535	8,256

Idle start wind speed: Cut in wind speed from power curve

	January	February	March	April	May	June
1	08:51 13:48-13:56/8 15:48	08:15 08:45-09:17/32 16:45	07:11 15:32-15:57/25 17:48	06:49 07:14-07:23/9 19:53 07:28-07:52/24	05:33 20:55	04:36 05:24-05:51/27 21:52 20:24-20:37/13
2	08:50 13:50-13:55/5 15:49	08:13 08:43-09:18/35 16:47 15:38-15:51/13	07:08 15:34-15:54/20 17:50	06:46 07:11-07:24/13 19:55 07:28-07:49/21	05:30 20:57	04:35 05:23-05:52/29 21:54 20:25-20:36/11
3	08:50 15:51	08:11 08:41-09:18/37 16:50 15:35-15:54/19	07:06 17:15-17:23/8 17:52 15:38-15:51/13	06:43 07:09-07:26/17 19:57 07:30-07:49/19	05:28 20:59	04:34 05:23-05:52/29 21:55 20:27-20:34/7
4	08:50 15:52	08:09 08:40-09:19/39 16:52 15:33-15:57/24	07:03 17:11-17:25/14 17:54	06:41 07:06-07:27/21 19:59 07:30-07:47/17	05:26 21:01	04:33 05:23-05:54/31 21:56 20:29-20:32/3
5	08:49 15:53	08:07 08:40-09:19/39 16:54 15:31-15:58/27	07:00 17:09-17:27/18 17:56	06:38 07:05-07:27/22 20:01 07:32-07:44/12	05:23 21:04	04:32 05:22-05:54/32 21:58
6	08:49 15:55	08:05 08:39-09:18/39 16:56 15:30-16:00/30	06:58 17:08-17:28/20 17:58	06:35 07:05-07:27/22 20:03 07:36-07:40/4	05:21 20:27-20:32/5 21:06	04:31 05:22-05:55/33 21:59
7	08:48 15:56	08:03 08:39-09:18/39 16:59 15:29-16:01/32	06:55 17:07-17:29/22 18:00	06:33 07:04-07:27/23 20:05	05:19 20:24-20:35/11 21:08	04:30 05:22-05:56/34 22:00
8	08:47 15:58	08:00 08:39-09:17/38 17:01 15:28-16:03/35	06:53 17:06-17:29/23 18:03	06:30 07:04-07:27/23 20:07	05:17 20:22-20:36/14 21:10	04:29 05:22-05:56/34 22:01
9	08:47 16:00	07:58 08:39-09:16/37 17:03 15:27-16:03/36	06:50 17:06-17:30/24 18:05	06:28 07:03-07:26/23 20:10	05:15 20:20-20:38/18 21:12	04:29 05:21-05:56/35 22:02
10	08:46 16:01	07:56 08:39-09:15/36 17:05 15:26-16:04/38	06:47 17:05-17:29/24 18:07	06:25 07:03-07:25/22 20:12	05:13 20:19-20:39/20 21:14	04:28 05:22-05:57/35 22:03
11	08:45 16:03	07:54 08:40-09:14/34 17:08 15:25-16:04/39	06:45 17:04-17:29/25 18:09	06:22 07:04-07:25/21 20:14	05:11 20:18-20:40/22 21:16	04:27 05:22-05:58/36 22:04
12	08:44 16:05	07:52 08:40-09:10/30 17:10 15:25-16:05/40	06:42 17:04-17:28/24 18:11	06:20 07:04-07:23/19 20:16	05:09 20:17-20:40/23 21:18	04:27 05:21-05:57/36 22:05
13	08:43 16:06	07:49 08:41-09:05/24 17:12 15:25-16:06/41	06:39 17:05-17:28/23 18:13	06:17 07:05-07:23/18 20:18	05:07 20:17-20:40/23 21:20	04:26 05:22-05:58/36 22:06
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15	08:41 16:10	07:45 08:43-09:00/17 17:17 15:24-16:07/43	06:34 17:06-17:25/19 18:17	06:12 07:09-07:18/9 20:22	05:03 20:17-20:41/24 21:23	04:26 05:22-05:59/37 22:07
16	08:40 16:12	07:42 08:44-08:57/13 17:19 15:23-16:07/44	06:32 17:08-17:24/16 18:20	06:09 20:24	05:01 20:16-20:41/25 21:25	04:26 05:21-05:59/38 22:08
17	08:39 16:14	07:40 08:48-08:55/7 17:21 15:24-16:07/43	06:29 17:09-17:21/12 18:22	06:07 20:26	04:59 20:17-20:42/25 21:27	04:25 05:22-05:59/37 22:08
18	08:37 16:16	07:38 15:23-16:07/44 17:23	06:26 18:24	06:04 20:28	04:57 20:16-20:42/26 21:29	04:25 05:22-05:59/37 22:09
19	08:36 16:18	07:35 15:24-16:07/43 17:26	06:24 18:26	06:02 20:30	04:55 20:16-20:41/25 21:31	04:25 05:22-05:59/37 22:09
20	08:35 16:20	07:33 15:24-16:06/42 17:28	06:21 06:46-06:54/8 18:28	05:59 20:32	04:53 20:17-20:42/25 21:33	04:25 05:23-06:01/38 22:10
21	08:33 16:22	07:31 15:24-16:06/42 17:30	06:18 06:43-06:55/12 18:30	05:57 20:35	04:52 20:16-20:41/25 21:35	04:25 05:23-06:01/38 22:10
22	08:32 16:24	07:28 15:24-16:05/41 17:32	06:15 06:41-06:57/16 18:32	05:54 20:37	04:50 20:17-20:41/24 21:36	04:26 05:23-06:01/38 22:10
23	08:30 16:26	07:26 15:25-16:05/40 17:34	06:13 06:38-06:58/20 18:34	05:52 20:39	04:48 20:18-20:42/24 21:38	04:26 05:23-06:00/37 22:10
24	08:29 09:02-09:09/7 16:28	07:23 15:26-16:04/38 17:37	06:10 06:35-06:58/23 18:36	05:49 20:41	04:47 20:18-20:41/23 21:40	04:26 05:24-06:01/37 22:10
25	08:27 09:00-09:11/11 16:30	07:21 15:26-16:03/37 17:39	06:07 06:33-06:59/26 18:38	05:47 20:43	04:45 05:35-05:38/3 21:42 20:19-20:41/22	04:26 05:24-06:01/37 22:10
26	08:25 08:58-09:13/15 16:32	07:18 15:27-16:02/35 17:41	06:05 06:31-06:58/27 18:40	05:44 20:45	04:44 05:31-05:43/12 21:43 20:19-20:41/22	04:27 05:23-06:01/38 22:10
27	08:24 08:56-09:14/18 16:34	07:16 15:28-16:01/33 17:43	06:02 06:30-06:58/28 18:43	05:42 20:47	04:42 05:29-05:46/17 21:45 20:19-20:39/20	04:27 05:24-06:01/37 22:10
28	08:22 08:54-09:15/21 16:36	07:13 15:30-16:00/30 17:45	05:59 06:30-06:58/28 18:45	05:40 20:49	04:41 05:27-05:46/19 21:46 20:20-20:39/19	04:28 05:25-06:02/37 22:10
29	08:20 08:52-09:16/24 16:39		06:57 07:29-07:57/28 19:47	05:37 20:51	04:40 05:26-05:48/22 21:48 20:21-20:39/18	04:29 05:25-06:01/36 22:10
30	08:18 08:50-09:17/27 16:41		06:54 07:28-07:55/27 19:49	05:35 20:53	04:38 05:25-05:49/24 21:49 20:22-20:38/16	04:29 05:25-06:02/37 22:09
31	08:16 08:48-09:18/30 16:43		06:51 07:29-07:54/25 19:51		04:37 05:24-05:50/26 21:51 20:23-20:38/15	
Potential sun hours	235	266	366	426	508	528
Sum of minutes with flicker	166	1487	619	373	661	1094

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:

Mezares\_AB211223

Licensed user:

SIA Estonian, Latvian &amp; Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Anna / anna@environment.lv

Calculated:

26/06/2024 08:57/4.0.540

## SHADOW - Calendar per WTG

WTG: E15 - NORDEX N175/6.X 6800 175.0 !-! hub: 179.0 m (TOT: 266.5 m)

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.01	1.91	4.85	7.09	9.29	9.83	8.40	7.53	5.47	2.70	0.68	0.49

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
425	448	518	446	469	751	755	902	1,169	1,037	801	535	8,256

Idle start wind speed: Cut in wind speed from power curve

	July	August	September	October	November	December
1	04:30 05:26-06:02/36 22:09	05:16 20:28-20:50/22 21:28	06:17 07:03-07:24/21 20:14	07:17 17:44-18:08/24 18:54	07:22 08:09-08:45/36 16:36 14:56-15:34/38	08:24 15:45
2	04:31 05:26-06:01/35 22:08	05:18 20:29-20:50/21 21:26	06:19 07:02-07:24/22 20:11	07:19 17:43-18:07/24 18:51	07:25 08:08-08:46/38 16:34 14:56-15:32/36	08:26 15:44
3	04:32 05:26-06:01/35 22:08	05:20 20:30-20:49/19 21:24	06:21 07:01-07:24/23 20:09	07:21 17:43-18:07/24 18:48	07:27 08:09-08:47/38 16:32 14:58-15:32/34	08:27 15:43
4	04:33 05:27-06:01/34 22:07	05:21 20:31-20:48/17 21:22	06:23 07:01-07:24/23 20:06	07:23 17:43-18:07/24 18:46	07:29 08:09-08:47/38 16:29 14:59-15:31/32	08:29 15:42
5	04:34 05:28-06:01/33 22:07	05:23 20:32-20:45/13 21:19	06:25 07:01-07:24/23 20:03	07:25 17:43-18:06/23 18:43	07:31 08:09-08:48/39 16:27 15:00-15:29/29	08:31 15:42
6	04:35 05:28-06:01/33 22:06	05:25 20:34-20:43/9 21:17	06:27 07:01-07:24/23 20:01 07:32-07:36/4	07:27 17:43-18:05/22 18:40	07:33 08:10-08:48/38 16:25 15:02-15:28/26	08:32 15:41
7	04:36 05:29-06:01/32 22:05	05:27 21:15	06:29 07:00-07:22/22 19:58 07:27-07:39/12	07:29 17:43-18:04/21 18:38	07:36 08:10-08:48/38 16:23 15:03-15:26/23	08:34 15:40
8	04:37 05:29-06:01/32 22:04	05:29 21:13	06:31 07:00-07:21/21 19:55 07:25-07:41/16	07:32 17:44-18:03/19 18:35	07:38 08:12-08:49/37 16:21 15:06-15:24/18	08:35 15:40
9	04:38 05:30-06:00/30 22:03	05:31 21:11	06:33 07:02-07:19/17 19:53 07:23-07:42/19	07:34 17:45-18:01/16 18:32	07:40 08:14-08:49/35 16:19 15:09-15:21/12	08:36 15:39
10	04:39 05:30-06:00/30 22:02	05:33 21:08	06:35 07:04-07:18/14 19:50 07:22-07:43/21	07:36 17:47-17:59/12 18:30 16:16-16:22/6	07:42 08:16-08:48/32 16:17	08:38 13:40-13:45/5 15:39
11	04:41 05:32-06:00/28 22:01	05:35 21:06	06:37 07:06-07:15/9 19:47 07:21-07:44/23	07:38 17:51-17:54/3 18:27 16:10-16:27/17	07:44 08:19-08:49/30 16:15	08:39 13:39-13:46/7 15:39
12	04:42 05:33-05:59/26 22:00	05:37 21:04	06:39 07:20-07:46/26 19:45	07:40 16:07-16:29/22 18:25	07:46 08:21-08:48/27 16:13	08:40 13:38-13:47/9 15:38
13	04:43 05:33-05:58/25 21:59	05:39 21:01	06:41 07:19-07:46/27 19:42	07:42 16:04-16:31/27 18:22	07:48 08:24-08:48/24 16:11	08:41 13:38-13:49/11 15:38
14	04:45 05:34-05:57/23 21:58	05:41 20:59	06:43 07:19-07:47/28 19:39	07:44 16:02-16:32/30 18:19	07:51 08:26-08:47/21 16:09	08:42 13:38-13:50/12 15:38
15	04:46 05:36-05:57/21 21:56	05:43 20:57	06:45 07:19-07:47/28 19:37	07:46 16:01-16:34/33 18:17	07:53 08:28-08:46/18 16:08	08:44 13:38-13:51/13 15:38
16	04:48 05:37-05:55/18 21:55	05:45 20:54	06:47 07:19-07:47/28 19:34	07:48 15:59-16:35/36 18:14	07:55 08:31-08:46/15 16:06	08:44 13:38-13:51/13 15:38
17	04:49 05:39-05:53/14 21:54	05:47 20:52	06:49 07:19-07:47/28 19:31	07:50 15:58-16:35/37 18:12	07:57 08:33-08:44/11 16:04	08:45 13:38-13:52/14 15:38
18	04:51 05:42-05:51/9 21:52	05:49 20:49	06:51 07:20-07:46/26 19:29	07:52 15:56-16:36/40 18:09	07:59 08:36-08:43/7 16:02	08:46 13:39-13:53/14 15:38
19	04:53 20:28-20:50/22 21:51	05:51 20:47	06:53 07:22-07:46/24 19:26	07:54 15:55-16:36/41 18:07	08:01 16:01	08:47 13:38-13:53/15 15:38
20	04:54 20:28-20:51/23 21:49	05:53 20:45	06:55 07:24-07:45/21 19:23	07:57 15:55-16:37/42 18:04	08:03 15:59	08:48 13:39-13:54/15 15:39
21	04:56 20:27-20:51/24 21:48	05:55 20:42	06:57 07:26-07:43/17 19:20	07:59 15:54-16:37/43 18:02	08:05 15:58	08:48 13:40-13:55/15 15:39
22	04:58 20:27-20:52/25 21:46	05:57 20:40	06:59 07:28-07:42/14 19:18	08:01 15:54-16:37/43 17:59	08:07 15:56	08:49 13:40-13:55/15 15:39
23	04:59 20:27-20:52/25 21:44	05:59 20:37	07:01 07:30-07:39/9 19:15	08:03 15:54-16:37/43 17:57	08:09 15:55	08:49 13:40-13:55/15 15:40
24	05:01 20:27-20:52/25 21:43	06:01 20:35	07:03 07:32-07:35/3 19:12	08:05 15:54-16:37/43 17:55	08:11 15:53	08:50 13:41-13:56/15 15:41
25	05:03 20:26-20:52/26 21:41	06:03 20:32	07:05 19:10	07:07 08:16-08:25/9 16:52 14:53-15:36/43	08:13 15:52	08:50 13:42-13:56/14 15:41
26	05:05 20:27-20:52/25 21:39	06:05 20:29	07:07 17:52-18:02/10 19:07	07:09 08:14-08:28/14 16:50 14:54-15:37/43	08:15 15:51	08:50 13:42-13:56/14 15:42
27	05:06 20:27-20:52/25 21:37	06:07 20:27	07:09 17:49-18:04/15 19:04	07:12 08:12-08:30/18 16:47 14:54-15:36/42	08:17 15:49	08:51 13:43-13:56/13 15:43
28	05:08 20:27-20:52/25 21:36	06:09 07:09-07:19/10 20:24	07:11 17:47-18:05/18 19:02	07:14 08:10-08:32/22 16:45 14:53-15:35/42	08:19 15:48	08:51 13:44-13:57/13 15:44
29	05:10 20:27-20:52/25 21:34	06:11 07:07-07:21/14 20:22	07:13 17:45-18:06/21 18:59	07:16 08:10-08:35/25 16:43 14:54-15:36/42	08:20 15:47	08:51 13:45-13:57/12 15:45
30	05:12 20:28-20:52/24 21:32	06:13 07:05-07:22/17 20:19	07:15 17:45-18:07/22 18:56	07:18 08:09-08:40/31 16:41 14:54-15:35/41	08:22 15:46	08:51 13:46-13:57/11 15:46
31	05:14 20:28-20:51/23 21:30	06:15 07:04-07:23/19 20:17		07:20 08:08-08:43/35 16:38 14:55-15:34/39		08:51 13:46-13:56/10 15:47
Potential sun hours	529	469	385	324	247	216
Sum of minutes with flicker	965	161	678	1161	770	275

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

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

## SHADOW - Calendar per WTG

WTG: E16 - NORDEX N175/6.X 6800 175.0 !-! hub: 179.0 m (TOT: 266.5 m)

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.01	1.91	4.85	7.09	9.29	9.83	8.40	7.53	5.47	2.70	0.68	0.49

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
425	448	518	446	469	751	755	902	1,169	1,037	801	535	8,256

Idle start wind speed: Cut in wind speed from power curve

	January			February			March	April			May			June		
1	08:51	12:39-13:23/44		08:15			07:11	06:49			05:33			04:36	19:51-20:30/39	
	15:48			16:45			17:47	19:53			20:55			21:52		
2	08:50	12:39-13:23/44		08:13			07:08	06:46			05:30			04:35	19:52-20:30/38	
	15:49			16:47			17:50	19:55			20:57			21:54		
3	08:50	12:40-13:24/44		08:11	15:59-16:09/10		07:06	06:43			05:28			04:34	19:52-20:30/38	
	15:51			16:50			17:52	19:57			20:59			21:55		
4	08:50	12:40-13:24/44		08:09	15:56-16:12/16		07:03	06:41			05:26	20:07-20:12/5		04:33	19:52-20:29/37	
	15:52			16:52			17:54	19:59			21:01			21:56		
5	08:49	12:40-13:24/44		08:07	15:54-16:13/19		07:00	06:38			05:23	20:02-20:17/15		04:32	19:53-20:30/37	
	15:53			16:54			17:56	20:01			21:03			21:58		
6	08:49	12:41-13:26/45		08:05	15:53-16:15/22		06:58	06:35			05:21	20:00-20:20/20		04:31	19:53-20:30/37	
	15:55			16:56			17:58	20:03			21:06			21:59		
7	08:48	12:41-13:26/45		08:02	15:52-16:17/25		06:55	06:33			05:19	19:58-20:21/23		04:30	19:53-20:29/36	
	15:56			16:59			18:00	20:05			21:08			22:00		
8	08:47	12:42-13:26/44		08:00	15:50-16:17/27		06:53	06:30	07:00-07:05/5		05:17	19:56-20:23/27		04:29	19:54-20:30/36	
	15:58			17:01			18:03	20:07			21:10			22:01		
9	08:47	12:42-13:26/44		07:58	15:50-16:18/28		06:50	06:27	06:55-07:09/14		05:15	19:55-20:24/29		04:29	19:54-20:29/35	
	15:59			17:03			18:05	20:10			21:12			22:02		
10	08:46	12:43-13:27/44		07:56	15:50-16:19/29		06:47	06:25	06:52-07:10/18		05:13	19:54-20:25/31		04:28	19:55-20:30/35	
	16:01			17:05			18:07	20:12			21:14			22:03		
11	08:45	12:44-13:27/43		07:54	15:49-16:19/30		06:45	06:22	06:51-07:12/21		05:11	19:53-20:25/32		04:27	19:55-20:29/34	
	16:03			17:08			18:09	20:14			21:16			22:04		
12	08:44	12:43-13:27/44		07:52	15:49-16:20/31		06:42	06:20	06:49-07:12/23		05:08	19:52-20:26/34		04:27	19:56-20:30/34	
	16:05			17:10			18:11	20:16			21:18			22:05		
13	08:43	12:44-13:27/43		07:49	15:49-16:21/32		06:39	06:17	06:48-07:14/26		05:06	19:51-20:26/35		04:26	19:56-20:30/34	
	16:06			17:12			18:13	20:18			21:19			22:06		
14	08:42	12:45-13:28/43		07:47	15:49-16:20/31		06:37	06:14	06:47-07:14/27		05:05	19:51-20:28/37		04:26	19:57-20:30/33	
	16:08			17:14			18:15	20:20			21:21			22:06		
15	08:41	12:45-13:27/42		07:45	15:49-16:21/32		06:34	06:12	06:46-07:14/28		05:03	19:51-20:28/37		04:26	19:56-20:30/34	
	16:10			17:17			18:17	20:22			21:23			22:07		
16	08:40	12:46-13:28/42		07:42	15:49-16:20/31		06:31	06:09	06:45-07:14/29		05:01	19:50-20:28/38		04:26	19:57-20:30/33	
	16:12			17:19			18:20	20:24			21:25			22:08		
17	08:39	12:47-13:27/40		07:40	15:50-16:20/30		06:29	06:07	06:45-07:14/29		04:59	19:50-20:29/39		04:25	19:57-20:30/33	
	16:14			17:21			18:22	20:26			21:27			22:08		
18	08:37	12:48-13:28/40		07:38	15:50-16:19/29		06:26	06:04	06:44-07:13/29		04:57	19:50-20:29/39		04:25	19:57-20:30/33	
	16:16			17:23			18:24	20:28			21:29			22:09		
19	08:36	12:48-13:27/39		07:35	15:51-16:19/28		06:23	06:02	06:45-07:14/29		04:55	19:49-20:29/40		04:25	19:58-20:30/32	
	16:18			17:25			18:26	20:30			21:31			22:09		
20	08:35	12:49-13:27/38		07:33	15:51-16:18/27		06:21	05:59	06:45-07:13/28		04:53	19:49-20:29/40		04:25	19:58-20:30/32	
	16:20			17:28			18:28	20:32			21:33			22:09		
21	08:33	12:50-13:27/37		07:31	15:53-16:17/24		06:18	05:57	06:45-07:12/27		04:52	19:49-20:29/40		04:25	19:59-20:31/32	
	16:22			17:30			18:30	20:34			21:35			22:10		
22	08:32	12:51-13:26/35		07:28	15:54-16:15/21		06:15	05:54	06:45-07:12/27		04:50	19:49-20:30/41		04:26	19:59-20:31/32	
	16:24			17:32			18:32	20:37			21:36			22:10		
23	08:30	12:52-13:26/34		07:26	15:55-16:12/17		06:13	05:52	06:45-07:10/25		04:48	19:50-20:30/40		04:26	19:59-20:31/32	
	16:26			17:34			18:34	20:39			21:38			22:10		
24	08:29	12:53-13:25/32		07:23	15:59-16:10/11		06:10	05:49	06:46-07:09/23		04:47	19:49-20:30/41		04:26	19:59-20:31/32	
	16:28			17:37			18:36	20:41			21:40			22:10		
25	08:27	12:55-13:24/29		07:21			06:07	05:47	06:47-07:08/21		04:45	19:50-20:30/40		04:26	19:59-20:32/33	
	16:30			17:39			18:38	20:43			21:41			22:10		
26	08:25	12:57-13:23/26		07:18			06:05	05:44	06:48-07:06/18		04:44	19:50-20:30/40		04:27	19:59-20:32/33	
	16:32			17:41			18:40	20:45			21:43			22:10		
27	08:24	12:59-13:22/23		07:16			06:02	05:42	06:50-07:04/14		04:42	19:49-20:30/41		04:27	20:00-20:33/33	
	16:34			17:43			18:43	20:47			21:45			22:10		
28	08:22	13:02-13:20/18		07:13			05:59	05:40	06:53-07:01/8		04:41	19:50-20:30/40		04:28	19:59-20:32/33	
	16:36			17:45			18:45	20:49			21:46			22:10		
29	08:20	13:06-13:17/11					06:57	05:37			04:40	19:50-20:30/40		04:29	19:59-20:33/34	
	16:39						19:47	20:51			21:48			22:09		
30	08:18						06:54	05:35			04:38	19:51-20:30/39		04:29	20:00-20:34/34	
	16:41						19:49	20:53			21:49			22:09		
31	08:16						06:51				04:37	19:51-20:30/39				
	16:43						19:51				21:51					
	235			266			366	426			508			528		
Potential sun hours																
Sum of minutes with flicker		1101		550			0	469			962			1028		

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:

Mezares\_AB211223

Licensed user:

SIA Estonian, Latvian &amp; Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Anna / anna@environment.lv

Calculated:

26/06/2024 08:57/4.0.540

## SHADOW - Calendar per WTG

WTG: E16 - NORDEX N175/6.X 6800 175.0 !-! hub: 179.0 m (TOT: 266.5 m)

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.01	1.91	4.85	7.09	9.29	9.83	8.40	7.53	5.47	2.70	0.68	0.49

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
425	448	518	446	469	751	755	902	1,169	1,037	801	535	8,256

Idle start wind speed: Cut in wind speed from power curve

	July	August	September	October	November	December
1	04:30 19:59-20:33/34 22:09	05:16 20:02-20:36/34 21:28	06:17 06:50-07:11/21 20:14	07:17 18:54	07:22 15:20-15:49/29 16:36	08:24 12:26-13:09/43 15:45
2	04:31 19:59-20:34/35 22:08	05:18 20:03-20:35/32 21:26	06:19 06:51-07:09/18 20:11	07:19 18:51	07:25 15:20-15:48/28 16:34	08:26 12:25-13:09/44 15:44
3	04:32 20:00-20:35/35 22:08	05:20 20:05-20:35/30 21:24	06:21 06:53-07:07/14 20:09	07:21 18:48	07:27 15:20-15:47/27 16:32	08:27 12:25-13:10/45 15:43
4	04:33 20:00-20:35/35 22:07	05:21 20:06-20:34/28 21:21	06:23 06:57-07:02/5 20:06	07:23 18:46	07:29 15:22-15:46/24 16:29	08:29 12:26-13:10/44 15:42
5	04:34 20:00-20:36/36 22:06	05:23 20:06-20:32/26 21:19	06:25 20:03	07:25 18:43	07:31 15:23-15:45/22 16:27	08:31 12:27-13:11/44 15:42
6	04:35 20:00-20:36/36 22:06	05:25 20:08-20:30/22 21:17	06:27 20:01	07:27 18:40	07:33 15:25-15:44/19 16:25	08:32 12:27-13:12/45 15:41
7	04:36 20:00-20:36/36 22:05	05:27 20:10-20:28/18 21:15	06:29 19:58	07:29 18:38	07:35 15:26-15:42/16 16:23	08:34 12:27-13:11/44 15:40
8	04:37 19:59-20:37/38 22:04	05:29 20:13-20:25/12 21:13	06:31 19:55	07:31 18:35	07:38 15:29-15:38/9 16:21	08:35 12:28-13:12/44 15:40
9	04:38 19:59-20:37/38 22:03	05:31 21:11	06:33 19:53	07:34 18:32	07:40 16:19	08:36 12:28-13:12/44 15:39
10	04:39 19:59-20:37/38 22:02	05:33 21:08	06:35 19:50	07:36 18:30	07:42 16:17	08:38 12:29-13:13/44 15:39
11	04:41 19:59-20:37/38 22:01	05:35 21:06	06:37 19:47	07:38 18:27	07:44 16:15	08:39 12:29-13:13/44 15:39
12	04:42 20:00-20:38/38 22:00	05:37 21:04	06:39 19:45	07:40 18:25	07:46 16:13	08:40 12:29-13:13/44 15:38
13	04:43 19:59-20:38/39 21:59	05:39 21:01	06:41 19:42	07:42 18:22	07:48 12:37-12:49/12 16:11	08:41 12:30-13:15/45 15:38
14	04:45 19:59-20:38/39 21:58	05:41 20:59	06:43 19:39	07:44 18:19	07:51 12:34-12:52/18 16:09	08:42 12:30-13:15/45 15:38
15	04:46 19:59-20:38/39 21:56	05:43 07:00-07:09/9 20:57	06:45 19:37	07:46 18:17	07:53 12:31-12:54/23 16:08	08:43 12:31-13:15/44 15:38
16	04:48 19:59-20:39/40 21:55	05:45 06:57-07:12/15 20:54	06:47 19:34	07:48 18:14	07:55 12:30-12:56/26 16:06	08:44 12:31-13:16/45 15:38
17	04:49 19:59-20:39/40 21:54	05:47 06:55-07:14/19 20:52	06:49 19:31	07:50 18:12	07:57 12:29-12:58/29 16:04	08:45 12:32-13:16/44 15:38
18	04:51 19:59-20:40/41 21:52	05:49 06:53-07:14/21 20:49	06:51 19:28	07:52 16:29-16:42/13 18:09	07:59 12:27-12:59/32 16:02	08:46 12:32-13:17/45 15:38
19	04:53 19:59-20:39/40 21:51	05:51 06:52-07:15/23 20:47	06:53 19:26	07:54 16:26-16:44/18 18:07	08:01 12:27-13:01/34 16:01	08:47 12:32-13:16/44 15:38
20	04:54 20:00-20:40/40 21:49	05:53 06:51-07:16/25 20:44	06:55 19:23	07:57 16:24-16:47/23 18:04	08:03 12:26-13:01/35 15:59	08:48 12:33-13:17/44 15:39
21	04:56 19:59-20:39/40 21:48	05:55 06:50-07:17/27 20:42	06:57 19:20	07:59 16:23-16:48/25 18:02	08:05 12:26-13:02/36 15:58	08:48 12:33-13:17/44 15:39
22	04:58 20:00-20:40/40 21:46	05:57 06:49-07:17/28 20:40	06:59 19:18	08:01 16:21-16:48/27 17:59	08:07 12:26-13:04/38 15:56	08:49 12:34-13:18/44 15:39
23	04:59 19:59-20:39/40 21:44	05:59 06:49-07:17/28 20:37	07:01 19:15	08:03 16:21-16:49/28 17:57	08:09 12:25-13:04/39 15:55	08:49 12:34-13:18/44 15:40
24	05:01 20:00-20:40/40 21:43	06:01 06:48-07:17/29 20:34	07:03 19:12	08:05 16:20-16:50/30 17:55	08:11 12:25-13:05/40 15:53	08:50 12:35-13:19/44 15:41
25	05:03 19:59-20:39/40 21:41	06:03 06:48-07:17/29 20:32	07:05 19:10	07:07 15:19-15:50/31 16:52	08:13 12:25-13:05/40 15:52	08:50 12:35-13:20/45 15:41
26	05:05 20:00-20:39/39 21:39	06:05 06:48-07:17/29 20:29	07:07 19:07	07:09 15:18-15:49/31 16:50	08:15 12:24-13:06/42 15:51	08:50 12:36-13:20/44 15:42
27	05:06 20:01-20:39/38 21:37	06:07 06:47-07:16/29 20:27	07:09 19:04	07:12 15:19-15:50/31 16:47	08:17 12:24-13:06/42 15:49	08:51 12:36-13:20/44 15:43
28	05:08 20:00-20:38/38 21:35	06:09 06:47-07:15/28 20:24	07:11 19:02	07:14 15:18-15:50/32 16:45	08:19 12:25-13:08/43 15:48	08:51 12:37-13:21/44 15:44
29	05:10 20:01-20:38/37 21:34	06:11 06:47-07:14/27 20:22	07:13 18:59	07:16 15:19-15:50/31 16:43	08:20 12:25-13:08/43 15:47	08:51 12:37-13:22/45 15:45
30	05:12 20:02-20:38/36 21:32	06:13 06:48-07:13/25 20:19	07:15 18:56	07:18 15:19-15:50/31 16:40	08:22 12:25-13:09/44 15:46	08:51 12:38-13:22/44 15:46
31	05:14 20:03-20:37/34 21:30	06:15 06:49-07:12/23 20:16		07:20 15:19-15:49/30 16:38		08:51 12:38-13:22/44 15:47
Potential sun hours	529	469	385	324	248	216
Sum of minutes with flicker	1177	616	58	381	790	1371

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:

Mezares\_AB211223

Licensed user:

SIA Estonian, Latvian &amp; Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Anna / anna@environment.lv

Calculated:

26/06/2024 08:57/4.0.540

## SHADOW - Calendar per WTG

WTG: E2 - NORDEX N175/6.X 6800 175.0 !-! hub: 179.0 m (TOT: 266.5 m)

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.01	1.91	4.85	7.09	9.29	9.83	8.40	7.53	5.47	2.70	0.68	0.49

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
425	448	518	446	469	751	755	902	1,169	1,037	801	535	8,256

Idle start wind speed: Cut in wind speed from power curve

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:50 15:48	08:14 16:45	07:10 17:47	06:48 19:53	05:32 20:55	04:35 21:52	04:30 22:09	05:15 21:28	06:17 20:14	07:17 18:53	07:22 16:36	08:24 15:45
2	08:50 15:49	08:13 16:47	07:08 17:49	06:46 19:55	05:30 20:57	04:34 21:54	04:30 22:08	05:17 21:26	06:19 20:11	07:19 18:51	07:24 16:33	08:26 15:44
3	08:50 15:50	08:11 16:49	07:05 17:52	06:43 19:57	05:28 20:59	04:33 21:55	04:31 22:08	05:19 21:23	06:21 20:08	07:21 18:48	07:27 16:31	08:27 15:43
4	08:50 15:52	08:09 16:52	07:03 17:54	06:40 19:59	05:25 21:01	04:32 21:56	04:32 22:07	05:21 21:21	06:23 20:06	07:23 18:45	07:29 16:29	08:29 15:42
5	08:49 15:53	08:07 16:54	07:00 17:56	06:38 20:01	05:23 21:03	04:31 21:58	04:33 22:06	05:23 21:19	06:25 20:03	07:25 18:43	07:31 16:27	08:31 15:41
6	08:49 15:54	08:04 16:56	06:58 17:58	06:35 20:03	05:21 21:05	04:30 21:59	04:34 22:06	05:25 21:17	06:27 20:00	07:27 18:40	07:33 16:25	08:32 15:41
7	08:48 15:56	08:02 16:58	06:55 18:00	06:32 20:05	05:19 21:07	04:30 22:00	04:35 22:05	05:27 21:15	06:29 19:58	07:29 18:37	07:35 16:23	08:34 15:40
8	08:47 15:57	08:00 17:01	06:52 18:02	06:30 20:07	05:16 21:09	04:29 22:01	04:37 22:04	05:29 21:13	06:31 19:55	07:31 18:35	07:38 16:21	08:35 15:39
9	08:47 15:59	07:58 17:03	06:50 18:04	06:27 20:09	05:14 21:11	04:28 22:02	04:38 22:03	05:31 21:10	06:33 19:52	07:33 18:32	07:40 16:19	08:36 15:39
10	08:46 16:01	07:56 17:05	06:47 18:07	06:25 20:11	05:12 21:13	04:28 22:03	04:39 22:02	05:33 21:08	06:35 19:50	07:35 18:30	07:42 16:17	08:38 15:38
11	08:45 16:02	07:54 17:07	06:45 18:09	06:22 20:14	05:10 21:15	04:27 22:04	04:40 22:01	05:35 21:06	06:37 19:47	07:37 18:27	07:44 16:15	08:39 15:38
12	08:44 16:04	07:51 17:10	06:42 18:11	06:19 20:16	05:08 21:17	04:26 22:05	04:42 22:00	05:37 21:04	06:39 19:44	07:40 18:24	07:46 16:13	08:40 15:38
13	08:43 16:06	07:49 17:12	06:39 18:13	06:17 20:18	05:06 21:19	04:26 22:06	04:43 21:59	05:39 21:01	06:41 19:42	07:42 18:22	07:48 16:11	08:41 15:38
14	08:42 16:08	07:47 17:14	06:37 18:15	06:14 20:20	05:04 21:21	04:26 22:06	04:44 21:58	05:41 20:59	06:43 19:39	07:44 18:19	07:50 16:09	08:42 15:37
15	08:41 16:10	07:45 17:16	06:34 18:17	06:12 20:22	05:02 21:23	04:25 22:07	04:46 21:56	05:43 20:57	06:45 19:36	07:46 18:17	07:53 16:07	08:43 15:37
16	08:40 16:11	07:42 17:18	06:31 18:19	06:09 20:24	05:00 21:25	04:25 22:08	04:47 21:55	05:45 20:54	06:47 19:34	07:48 18:14	07:55 16:05	08:44 15:37
17	08:38 16:13	07:40 17:21	06:29 18:21	06:06 20:26	04:58 21:27	04:25 22:08	04:49 21:54	05:47 20:52	06:49 19:31	07:50 18:12	07:57 16:04	08:45 15:38
18	08:37 16:15	07:38 17:23	06:26 18:24	06:04 20:28	04:57 21:29	04:25 22:09	04:51 21:52	05:49 20:49	06:51 19:28	07:52 18:09	07:59 16:02	08:46 15:38
19	08:36 16:17	07:35 17:25	06:23 18:26	06:01 20:30	04:55 21:31	04:25 22:09	04:52 21:51	05:51 20:47	06:53 19:26	07:54 18:07	08:01 16:00	08:47 15:38
20	08:35 16:19	07:33 17:27	06:21 18:28	05:59 20:32	04:53 21:33	04:25 22:09	04:54 21:49	05:53 20:44	06:55 19:23	07:56 18:04	08:03 15:59	08:48 15:38
21	08:33 16:21	07:30 17:30	06:18 18:30	05:56 20:34	04:51 21:34	04:25 22:10	04:55 21:48	05:55 20:42	06:57 19:20	07:59 18:02	08:05 15:57	08:48 15:39
22	08:32 16:23	07:28 17:32	06:15 18:32	05:54 20:36	04:50 21:36	04:25 22:10	04:57 21:46	05:57 20:39	06:59 19:17	08:01 17:59	08:07 15:56	08:49 15:39
23	08:30 16:25	07:25 17:34	06:13 18:34	05:51 20:39	04:48 21:38	04:25 22:10	04:59 21:44	05:59 20:37	07:01 19:15	08:03 17:57	08:09 15:54	08:49 15:40
24	08:29 16:28	07:23 17:36	06:10 18:36	05:49 20:41	04:46 21:40	04:26 22:10	05:01 21:43	06:01 20:34	07:03 19:12	08:05 17:54	08:11 15:53	08:50 15:40
25	08:27 16:30	07:21 17:38	06:07 18:38	05:46 20:43	04:45 21:41	04:26 22:10	05:02 21:41	06:03 20:32	07:05 19:09	07:07 16:52	08:13 15:52	08:50 15:41
26	08:25 16:32	07:18 17:41	06:04 18:40	05:44 20:45	04:43 21:43	04:26 22:10	05:04 21:39	06:05 20:29	07:07 19:07	07:09 16:49	08:15 15:50	08:50 15:42
27	08:24 16:34	07:16 17:43	06:02 18:42	05:42 20:47	04:42 21:45	04:27 22:10	05:06 21:37	06:07 20:27	07:09 19:04	07:11 16:47	08:17 15:49	08:51 15:42
28	08:22 16:36	07:13 17:45	05:59 18:44	05:39 20:49	04:41 21:46	04:28 22:10	05:08 21:35	06:09 20:24	07:11 19:01	07:14 16:45	08:19 15:48	08:51 15:43
29	08:20 16:38	07:10 19:46	06:56 20:51	05:37 21:48	04:39 21:48	04:28 22:09	05:10 21:33	06:11 20:22	07:13 18:59	07:16 16:42	08:20 15:47	08:51 15:44
30	08:18 16:40	07:04 19:49	06:54 20:53	05:35 21:49	04:38 21:49	04:29 22:09	05:12 21:32	06:13 20:19	07:15 18:56	07:18 16:40	08:22 15:46	08:51 15:45
31	08:16 16:43	07:00 19:51	06:51 21:00	05:30 21:51	04:37 21:51	04:30 22:00	05:13 21:30	06:15 20:16	07:20 16:38	07:23 15:40	08:25 15:46	08:53 15:46
Potential sun hours	235	266	366	426	508	529	529	469	385	324	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
		First time (hh:mm) with flicker	Last time (hh:mm) with flicker	Minutes with flicker

Project:

Mezares\_AB211223

Licensed user:

SIA Estonian, Latvian &amp; Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Anna / anna@environment.lv

Calculated:

26/06/2024 08:57/4.0.540

## SHADOW - Calendar per WTG

WTG: E3 - NORDEX N175/6.X 6800 175.0 !-! hub: 179.0 m (TOT: 266.5 m)

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.01	1.91	4.85	7.09	9.29	9.83	8.40	7.53	5.47	2.70	0.68	0.49

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
425	448	518	446	469	751	755	902	1,169	1,037	801	535	8,256

Idle start wind speed: Cut in wind speed from power curve

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:50 15:48	08:14 16:45	07:10 17:47	06:48 19:53	05:32 20:55	04:36 21:52	04:30 22:09	05:15 21:28	06:17 20:14	07:17 18:53	07:22 16:36	08:24 15:45
2	08:50 15:49	08:13 16:47	07:08 17:49	06:46 19:55	05:30 20:57	04:34 21:54	04:30 22:08	05:17 21:26	06:19 20:11	07:19 18:51	07:24 16:33	08:26 15:44
3	08:50 15:50	08:11 16:49	07:05 17:52	06:43 19:57	05:28 20:59	04:33 21:55	04:31 22:08	05:19 21:23	06:21 20:08	07:21 18:48	07:27 16:31	08:27 15:43
4	08:49 15:52	08:09 16:52	07:03 17:54	06:40 19:59	05:25 21:01	04:32 21:56	04:32 22:07	05:21 21:21	06:23 20:06	07:23 18:45	07:29 16:29	08:29 15:42
5	08:49 15:53	08:07 16:54	07:00 17:56	06:38 20:01	05:23 21:03	04:31 21:58	04:33 22:06	05:23 21:19	06:25 20:03	07:25 18:43	07:31 16:27	08:30 15:41
6	08:49 15:54	08:04 16:56	06:58 17:58	06:35 20:03	05:21 21:05	04:30 21:59	04:34 22:06	05:25 21:17	06:27 20:00	07:27 18:40	07:33 16:25	08:32 15:41
7	08:48 15:56	08:02 16:58	06:55 18:00	06:33 20:05	05:19 21:07	04:30 22:00	04:35 22:05	05:27 21:15	06:29 19:58	07:29 18:37	07:35 16:23	08:33 15:40
8	08:47 15:58	08:00 17:01	06:52 18:02	06:30 20:07	05:17 21:09	04:29 22:01	04:37 22:04	05:29 21:13	06:31 19:55	07:31 18:35	07:38 16:21	08:35 15:39
9	08:47 15:59	07:58 17:03	06:50 18:04	06:27 20:09	05:14 21:11	04:28 22:02	04:38 22:03	05:31 21:10	06:33 19:52	07:33 18:32	07:40 16:19	08:36 15:39
10	08:46 16:01	07:56 17:05	06:47 18:07	06:25 20:11	05:12 21:13	04:28 22:03	04:39 22:02	05:33 21:08	06:35 19:50	07:35 18:30	07:42 16:17	08:38 15:39
11	08:45 16:02	07:54 17:07	06:45 18:09	06:22 20:14	05:10 21:15	04:27 22:04	04:40 22:01	05:35 21:06	06:37 19:47	07:37 18:27	07:44 16:15	08:39 15:38
12	08:44 16:04	07:51 17:10	06:42 18:11	06:19 20:16	05:08 21:17	04:26 22:05	04:42 22:00	05:37 21:04	06:39 19:44	07:40 18:24	07:46 16:13	08:40 15:38
13	08:43 16:06	07:49 17:12	06:39 18:13	06:17 20:18	05:06 21:19	04:26 22:06	04:43 21:59	05:39 21:01	06:41 19:42	07:42 18:22	07:48 16:11	08:41 15:38
14	08:42 16:08	07:47 17:14	06:37 18:15	06:14 20:20	05:04 21:21	04:26 22:06	04:44 21:58	05:41 20:59	06:43 19:39	07:44 18:19	07:50 16:09	08:42 15:38
15	08:41 16:10	07:45 17:16	06:34 18:17	06:12 20:22	05:02 21:23	04:25 22:07	04:46 21:56	05:43 20:56	06:45 19:36	07:46 18:17	07:53 16:07	08:43 15:37
16	08:40 16:12	07:42 17:19	06:31 18:19	06:09 20:24	05:00 21:25	04:25 22:08	04:47 21:55	05:45 20:54	06:47 19:34	07:48 18:14	07:55 16:06	08:44 15:37
17	08:38 16:13	07:40 17:21	06:29 18:21	06:06 20:26	04:58 21:27	04:25 22:08	04:49 21:54	05:47 20:52	06:49 19:31	07:50 18:12	07:57 16:04	08:45 15:38
18	08:37 16:15	07:38 17:23	06:26 18:24	06:04 20:28	04:57 21:29	04:25 22:09	04:51 21:52	05:49 20:49	06:51 19:28	07:52 18:09	07:59 16:02	08:46 15:38
19	08:36 16:17	07:35 17:25	06:23 18:26	06:01 20:30	04:55 21:31	04:25 22:09	04:52 21:51	05:51 20:47	06:53 19:26	07:54 18:07	08:01 16:00	08:47 15:38
20	08:35 16:19	07:33 17:27	06:21 18:28	05:59 20:32	04:53 21:33	04:25 22:09	04:54 21:49	05:53 20:44	06:55 19:23	07:56 18:04	08:03 15:59	08:48 15:38
21	08:33 16:21	07:30 17:30	06:18 18:30	05:56 20:34	04:51 21:34	04:25 22:10	04:55 21:48	05:55 20:42	06:57 19:20	07:59 18:02	08:05 15:57	08:48 15:39
22	08:32 16:23	07:28 17:32	06:15 18:32	05:54 20:36	04:50 21:36	04:25 22:10	04:57 21:46	05:57 20:39	06:59 19:17	08:01 17:59	08:07 15:56	08:49 15:39
23	08:30 16:25	07:25 17:34	06:13 18:34	05:51 20:39	04:48 21:38	04:25 22:10	04:59 21:44	05:59 20:37	07:01 19:15	08:03 17:57	08:09 15:54	08:49 15:40
24	08:29 16:28	07:23 17:36	06:10 18:36	05:49 20:41	04:46 21:40	04:26 22:10	05:01 21:43	06:01 20:34	07:03 19:12	08:05 17:54	08:11 15:53	08:50 15:40
25	08:27 16:30	07:21 17:38	06:07 18:38	05:47 20:43	04:45 21:41	04:26 22:10	05:02 21:41	06:03 20:32	07:05 19:09	07:07 16:52	08:13 15:52	08:50 15:41
26	08:25 16:32	07:18 17:41	06:04 18:40	05:44 20:45	04:43 21:43	04:27 22:10	05:04 21:39	06:05 20:29	07:07 19:07	07:09 16:50	08:15 15:50	08:50 15:42
27	08:24 16:34	07:16 17:43	06:02 18:42	05:42 20:47	04:42 21:45	04:27 22:10	05:06 21:37	06:07 20:27	07:09 19:04	07:11 16:47	08:17 15:49	08:51 15:42
28	08:22 16:36	07:13 17:45	05:59 18:44	05:39 20:49	04:41 21:46	04:28 22:10	05:08 21:35	06:09 20:24	07:11 19:01	07:14 16:45	08:19 15:48	08:51 15:43
29	08:20 16:38	07:10 19:46	06:56 20:51	05:37 21:48	04:39 21:48	04:28 22:09	05:10 21:33	06:11 20:22	07:13 18:59	07:16 16:42	08:20 15:47	08:51 15:44
30	08:18 16:41	07:04 19:49	06:54 20:53	05:35 21:49	04:38 21:49	04:29 22:09	05:12 21:32	06:13 20:19	07:15 18:56	07:18 16:40	08:22 15:46	08:51 15:45
31	08:16 16:43	07:00 19:51	06:51 21:00	05:30 21:51	04:37 21:51	04:29 22:10	05:13 21:30	06:15 20:16	07:20 16:38	07:23 15:40	08:25 15:44	08:53 15:46
Potential sun hours	235	266	366	426	508	529	529	469	385	324	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
		First time (hh:mm) with flicker	Last time (hh:mm) with flicker	Minutes with flicker

Project:

Mezares\_AB211223

Licensed user:

SIA Estonian, Latvian &amp; Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Anna / anna@environment.lv

Calculated:

26/06/2024 08:57/4.0.540

## SHADOW - Calendar per WTG

WTG: E4 - NORDEX N175/6.X 6800 175.0 !-! hub: 179.0 m (TOT: 266.5 m)

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.01	1.91	4.85	7.09	9.29	9.83	8.40	7.53	5.47	2.70	0.68	0.49

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
425	448	518	446	469	751	755	902	1,169	1,037	801	535	8,256

Idle start wind speed: Cut in wind speed from power curve

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:50 15:48	08:14 16:45	07:10 17:47	06:48 19:53	05:32 20:55	04:36 21:52	04:30 22:09	05:15 21:28	06:17 20:14	07:17 18:53	07:22 16:36	08:24 15:45
2	08:50 15:49	08:12 16:47	07:08 17:49	06:46 19:55	05:30 20:57	04:34 21:54	04:31 22:08	05:17 21:25	06:19 20:11	07:19 18:51	07:24 16:33	08:26 15:44
3	08:50 15:50	08:11 16:49	07:05 17:52	06:43 19:57	05:28 20:59	04:33 21:55	04:31 22:08	05:19 21:23	06:21 20:08	07:21 18:48	07:27 16:31	08:27 15:43
4	08:49 15:52	08:09 16:52	07:03 17:54	06:40 19:59	05:25 21:01	04:32 21:56	04:32 22:07	05:21 21:21	06:23 20:06	07:23 18:45	07:29 16:29	08:29 15:42
5	08:49 15:53	08:06 16:54	07:00 17:56	06:38 20:01	05:23 21:03	04:31 21:58	04:33 22:06	05:23 21:19	06:25 20:03	07:25 18:43	07:31 16:27	08:30 15:41
6	08:48 15:55	08:04 16:56	06:58 17:58	06:35 20:03	05:21 21:05	04:31 21:59	04:34 22:06	05:25 21:17	06:27 20:00	07:27 18:40	07:33 16:25	08:32 15:41
7	08:48 15:56	08:02 16:58	06:55 18:00	06:33 20:05	05:19 21:07	04:30 22:00	04:35 22:05	05:27 21:15	06:29 19:58	07:29 18:37	07:35 16:23	08:33 15:40
8	08:47 15:58	08:00 17:01	06:52 18:02	06:30 20:07	05:17 21:09	04:29 22:01	04:37 22:04	05:29 21:13	06:31 19:55	07:31 18:35	07:37 16:21	08:35 15:39
9	08:46 15:59	07:58 17:03	06:50 18:04	06:27 20:09	05:14 21:11	04:28 22:02	04:38 22:03	05:31 21:10	06:33 19:52	07:33 18:32	07:40 16:19	08:36 15:39
10	08:46 16:01	07:56 17:05	06:47 18:07	06:25 20:11	05:12 21:13	04:28 22:03	04:39 22:02	05:33 21:08	06:35 19:50	07:35 18:30	07:42 16:17	08:38 15:39
11	08:45 16:03	07:54 17:07	06:45 18:09	06:22 20:13	05:10 21:15	04:27 22:04	04:40 22:01	05:35 21:06	06:37 19:47	07:37 18:27	07:44 16:15	08:39 15:38
12	08:44 16:04	07:51 17:10	06:42 18:11	06:19 20:16	05:08 21:17	04:27 22:05	04:42 22:00	05:37 21:04	06:39 19:44	07:40 18:24	07:46 16:13	08:40 15:38
13	08:43 16:06	07:49 17:12	06:39 18:13	06:17 20:18	05:06 21:19	04:26 22:06	04:43 21:59	05:39 21:01	06:41 19:42	07:42 18:22	07:48 16:11	08:41 15:38
14	08:42 16:08	07:47 17:14	06:37 18:15	06:14 20:20	05:04 21:21	04:26 22:06	04:45 21:58	05:41 20:59	06:43 19:39	07:44 18:19	07:50 16:09	08:42 15:38
15	08:41 16:10	07:45 17:16	06:34 18:17	06:12 20:22	05:02 21:23	04:25 22:07	04:46 21:56	05:43 20:56	06:45 19:36	07:46 18:17	07:52 16:07	08:43 15:38
16	08:40 16:12	07:42 17:19	06:31 18:19	06:09 20:24	05:00 21:25	04:25 22:08	04:47 21:55	05:45 20:54	06:47 19:34	07:48 18:14	07:55 16:06	08:44 15:38
17	08:38 16:13	07:40 17:21	06:29 18:21	06:07 20:26	04:58 21:27	04:25 22:08	04:49 21:54	05:47 20:52	06:49 19:31	07:50 18:12	07:57 16:04	08:45 15:38
18	08:37 16:15	07:38 17:23	06:26 18:24	06:04 20:28	04:57 21:29	04:25 22:09	04:51 21:52	05:49 20:49	06:51 19:28	07:52 18:09	07:59 16:02	08:46 15:38
19	08:36 16:17	07:35 17:25	06:23 18:26	06:01 20:30	04:55 21:31	04:25 22:09	04:52 21:51	05:51 20:47	06:53 19:26	07:54 18:07	08:01 16:00	08:47 15:38
20	08:34 16:19	07:33 17:27	06:21 18:28	05:59 20:32	04:53 21:33	04:25 22:09	04:54 21:49	05:53 20:44	06:55 19:23	07:56 18:04	08:03 15:59	08:48 15:38
21	08:33 16:21	07:30 17:30	06:18 18:30	05:56 20:34	04:51 21:34	04:25 22:10	04:55 21:48	05:55 20:42	06:57 19:20	07:58 18:02	08:05 15:57	08:48 15:39
22	08:32 16:23	07:28 17:32	06:15 18:32	05:54 20:36	04:50 21:36	04:25 22:10	04:57 21:46	05:57 20:39	06:59 19:17	08:01 17:59	08:07 15:56	08:49 15:39
23	08:30 16:26	07:25 17:34	06:13 18:34	05:51 20:38	04:48 21:38	04:25 22:10	04:59 21:44	05:59 20:37	07:01 19:15	08:03 17:57	08:09 15:54	08:49 15:40
24	08:28 16:28	07:23 17:36	06:10 18:36	05:49 20:41	04:46 21:40	04:26 22:10	05:01 21:43	06:01 20:34	07:03 19:12	08:05 17:54	08:11 15:53	08:50 15:40
25	08:27 16:30	07:21 17:38	06:07 18:38	05:47 20:43	04:45 21:41	04:26 22:10	05:02 21:41	06:03 20:32	07:05 19:09	07:07 16:52	08:13 15:52	08:50 15:41
26	08:25 16:32	07:18 17:41	06:04 18:40	05:44 20:45	04:43 21:43	04:27 22:10	05:04 21:39	06:05 20:29	07:07 19:07	07:09 16:50	08:15 15:50	08:50 15:42
27	08:24 16:34	07:16 17:43	06:02 18:42	05:42 20:47	04:42 21:45	04:27 22:10	05:06 21:37	06:07 20:27	07:09 19:04	07:11 16:47	08:17 15:49	08:50 15:42
28	08:22 16:36	07:13 17:45	05:59 18:44	05:39 20:49	04:41 21:46	04:28 22:10	05:08 21:35	06:09 20:24	07:11 19:01	07:14 16:45	08:18 15:48	08:51 15:43
29	08:20 16:38	07:11 19:46	06:56 20:51	05:37 21:48	04:39 21:48	04:28 22:09	05:10 21:33	06:11 20:21	07:13 18:59	07:16 16:43	08:20 15:47	08:51 15:44
30	08:18 16:41	07:04 19:49	06:54 20:53	05:35 21:49	04:38 21:49	04:29 22:09	05:12 21:32	06:13 20:19	07:15 18:56	07:18 16:40	08:22 15:46	08:51 15:45
31	08:16 16:43	07:01 19:51	06:51 21:51	05:31 21:51	04:37 21:51	05:13 21:30	06:15 20:16	07:20 16:38	07:20 16:38	07:20 16:38	07:20 16:38	08:51 15:46
Potential sun hours	235	266	366	426	508	529	529	469	385	324	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:

Mezares\_AB211223

Licensed user:

SIA Estonian, Latvian &amp; Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Anna / anna@environment.lv

Calculated:

26/06/2024 08:57/4.0.540

## SHADOW - Calendar per WTG

WTG: E5 - NORDEX N175/6.X 6800 175.0 !-! hub: 179.0 m (TOT: 266.5 m)

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.01	1.91	4.85	7.09	9.29	9.83	8.40	7.53	5.47	2.70	0.68	0.49

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
425	448	518	446	469	751	755	902	1,169	1,037	801	535	8,256

Idle start wind speed: Cut in wind speed from power curve

	January		February		March	April		May		June	
1	08:51	10:50-11:33/43	08:15	07:11		06:49		05:32	07:25-08:49/84	04:36	07:33-08:36/63
	15:48		16:45	17:47		19:53		20:55	06:31-07:15/44	21:53	
2	08:50	10:51-11:34/43	08:13	07:08		06:46		05:30	07:25-08:49/84	04:34	07:34-08:35/61
	15:49		16:47	17:50		19:55		20:57	06:31-07:15/44	21:54	
3	08:50	10:51-11:34/43	08:11	07:06	07:36-07:45/9	06:43		05:28	07:25-08:49/84	04:33	07:34-08:35/61
	15:50		16:49	17:52		19:57		20:59	06:31-07:15/44	21:55	
4	08:50	10:51-11:35/44	08:09	07:03	07:32-07:48/16	06:41	08:12-08:18/6	05:25	07:25-08:49/84	04:32	07:34-08:34/60
	15:52		16:52	17:54		19:59		21:02	06:31-07:15/44	21:57	
5	08:49	10:52-11:36/44	08:07	07:00	07:30-07:49/19	06:38	08:02-08:26/24	05:23	07:25-08:49/84	04:31	07:36-08:34/58
	15:53		16:54	17:56		20:01		21:04	06:31-07:14/43	21:58	
6	08:49	10:52-11:36/44	08:05	06:58	07:29-07:51/22	06:35	07:58-08:30/32	05:21	07:25-08:49/84	04:31	07:36-08:34/58
	15:55		16:56	17:58		20:03		21:06	06:32-07:14/42	21:59	
7	08:48	10:53-11:36/43	08:03	06:55	07:27-07:52/25	06:33	07:54-08:33/39	05:19	07:25-08:48/83	04:30	07:36-08:33/57
	15:56		16:58	18:00		20:05		21:08	06:32-07:13/41	22:00	
8	08:47	10:53-11:37/44	08:00	06:53	07:25-07:52/27	06:30	07:51-08:35/44	05:17	07:25-08:48/83	04:29	07:37-08:33/56
	15:58		17:01	18:02		20:07		21:10	06:32-07:13/41	22:01	
9	08:47	10:53-11:37/44	07:58	06:50	07:25-07:53/28	06:27	07:49-08:38/49	05:14	07:25-08:47/82	04:28	07:37-08:33/56
	15:59		17:03	18:05		20:10		21:12	06:33-07:12/39	22:02	
10	08:46	10:54-11:38/44	07:56	06:47	07:24-07:53/29	06:25	07:46-08:39/53	05:12	07:25-08:47/82	04:28	07:38-08:33/55
	16:01		17:05	18:07		20:12		21:14	06:33-07:12/39	22:03	
11	08:45	10:55-11:38/43	07:54	06:45	07:24-07:52/28	06:22	07:44-08:41/57	05:10	07:25-08:46/81	04:27	07:38-08:32/54
	16:02		17:07	18:09		20:14		21:16	06:33-07:11/38	22:04	
12	08:44	10:55-11:39/44	07:52	06:42	07:24-07:53/29	06:19	07:42-08:42/60	05:08	07:25-08:46/81	04:26	07:39-08:32/53
	16:04		17:10	18:11		20:16	06:45-06:46/1	21:18	06:34-07:10/36	22:05	
13	08:43	10:55-11:38/43	07:49	06:39	07:23-07:52/29	06:17	07:41-08:44/63	05:06	07:25-08:45/80	04:26	07:40-08:32/52
	16:06		17:12	18:13		20:18	06:43-06:50/7	21:20	06:34-07:09/35	22:06	
14	08:42	10:56-11:39/43	07:47	06:37	07:23-07:51/28	06:14	07:39-08:44/65	05:04	07:25-08:44/79	04:26	07:40-08:31/51
	16:08		17:14	18:15		20:20	06:40-06:52/12	21:22	06:36-07:09/33	22:07	
15	08:41	10:57-11:39/42	07:45	06:34	07:23-07:50/27	06:12	07:38-08:46/68	05:02	07:26-08:45/79	04:25	07:40-08:32/52
	16:10		17:16	18:17		20:22	06:38-06:53/15	21:24	06:36-07:07/31	22:07	
16	08:40	10:57-11:39/42	07:42	06:31	07:24-07:50/26	06:09	07:36-08:46/70	05:00	07:26-08:44/78	04:25	07:41-08:32/51
	16:12		17:19	18:19		20:24	06:35-07:02/27	21:25	06:37-07:06/29	22:08	
17	08:39	10:58-11:39/41	07:40	06:29	07:24-07:48/24	06:07	07:35-08:47/72	04:58	07:26-08:43/77	04:25	07:41-08:32/51
	16:13		17:21	18:22		20:26	06:33-07:06/33	21:27	06:38-07:04/26	22:08	
18	08:37	10:58-11:39/41	07:38	06:26	07:25-07:47/22	06:04	07:34-08:47/73	04:57	07:27-08:43/76	04:25	07:41-08:32/51
	16:15		17:23	18:24		20:28	06:32-07:08/36	21:29	06:40-07:04/24	22:09	
19	08:36	10:59-11:39/40	07:35	06:23	07:27-07:45/18	06:02	07:33-08:48/75	04:55	07:26-08:42/76	04:25	07:42-08:32/50
	16:17		17:25	18:26		20:30	06:32-07:10/38	21:31	06:41-07:02/21	22:09	
20	08:35	11:00-11:39/39	07:33	06:21	07:29-07:42/13	05:59	07:31-08:48/77	04:53	07:27-08:42/75	04:25	07:42-08:32/50
	16:19		17:28	18:28		20:32	06:31-07:10/39	21:33	06:43-07:00/17	22:10	
21	08:33	11:00-11:39/39	07:31	06:18	07:34-07:36/2	05:56	07:31-08:49/78	04:51	07:27-08:41/74	04:25	07:42-08:32/50
	16:21		17:30	18:30		20:35	06:32-07:12/40	21:35	06:45-06:57/12	22:10	
22	08:32	11:01-11:38/37	07:28	06:15		05:54	07:29-08:48/79	04:50	07:28-08:41/73	04:25	07:43-08:33/50
	16:23		17:32	18:32		20:37	06:32-07:13/41	21:36	06:51-06:53/2	22:10	
23	08:30	11:02-11:38/36	07:26	06:13		05:51	07:29-08:49/80	04:48	07:28-08:40/72	04:25	07:43-08:33/50
	16:26		17:34	18:34		20:39	06:32-07:13/41	21:38		22:10	
24	08:29	11:04-11:38/34	07:23	06:10		05:49	07:29-08:50/81	04:46	07:29-08:40/71	04:26	07:43-08:33/50
	16:28		17:36	18:36		20:41	06:33-07:14/41	21:40		22:10	
25	08:27	11:05-11:37/32	07:21	06:07		05:47	07:27-08:49/82	04:45	07:30-08:40/70	04:26	07:43-08:34/51
	16:30		17:39	18:38		20:43	06:34-07:15/41	21:42		22:10	
26	08:25	11:06-11:36/30	07:18	06:05		05:44	07:27-08:49/82	04:43	07:29-08:38/69	04:27	07:43-08:34/51
	16:32		17:41	18:40		20:45	06:33-07:14/41	21:43		22:10	
27	08:24	11:07-11:35/28	07:16	06:02		05:42	07:27-08:50/83	04:42	07:30-08:38/68	04:27	07:43-08:35/52
	16:34		17:43	18:42		20:47	06:33-07:15/42	21:45		22:10	
28	08:22	11:09-11:34/25	07:13	05:59		05:39	07:27-08:50/83	04:41	07:31-08:38/67	04:28	07:43-08:34/51
	16:36		17:45	18:45		20:49	06:32-07:15/43	21:47		22:10	
29	08:20	11:11-11:32/21		06:57		05:37	07:26-08:49/83	04:39	07:31-08:37/66	04:28	07:43-08:35/52
	16:38			19:47		20:51	06:31-07:15/44	21:48		22:10	
30	08:18	11:14-11:30/16		06:54		05:35	07:25-08:49/84	04:38	07:32-08:37/65	04:29	07:42-08:35/53
	16:41			19:49		20:53	06:31-07:15/44	21:50		22:09	
31	08:17	11:19-11:25/6		06:51				04:37	07:33-08:36/63		
	16:43			19:51				21:51			
Potential sun hours	235		266	366		426		508		529	1610
Sum of minutes with flicker		1158	0	421		2368		3099			

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:

Mezares\_AB211223

Licensed user:

SIA Estonian, Latvian &amp; Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Anna / anna@environment.lv

Calculated:

26/06/2024 08:57/4.0.540

## SHADOW - Calendar per WTG

WTG: E5 - NORDEX N175/6.X 6800 175.0 !-! hub: 179.0 m (TOT: 266.5 m)

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.01	1.91	4.85	7.09	9.29	9.83	8.40	7.53	5.47	2.70	0.68	0.49

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
425	448	518	446	469	751	755	902	1,169	1,037	801	535	8,256

Idle start wind speed: Cut in wind speed from power curve

	July	August	September	October	November	December
1	04:30 07:43-08:36/53 22:09	05:15 07:35-08:56/81 21:28 06:44-07:20/36	06:17 07:43-08:40/57 20:14	07:17 08:03-08:32/29 18:53	07:22 16:36	08:24 10:37-11:20/43 15:45
2	04:31 07:43-08:37/54 22:08	05:17 07:35-08:57/82 21:26 06:43-07:21/38	06:19 07:45-08:38/53 20:11	07:19 08:03-08:32/29 18:51	07:25 16:34	08:26 10:37-11:21/44 15:44
3	04:31 07:43-08:38/55 22:08	05:19 07:35-08:57/82 21:24 06:43-07:22/39	06:21 07:47-08:36/49 20:09	07:21 08:02-08:31/29 18:48	07:27 16:31	08:28 10:38-11:21/43 15:43
4	04:32 07:43-08:38/55 22:07	05:21 07:34-08:57/83 21:22 06:43-07:23/40	06:23 07:48-08:32/44 20:06	07:23 08:02-08:30/28 18:45	07:29 16:29	08:29 10:37-11:21/44 15:42
5	04:33 07:43-08:39/56 22:07	05:23 07:34-08:57/83 21:19 06:41-07:22/41	06:25 07:50-08:29/39 20:03	07:25 08:02-08:29/27 18:38	07:31 16:27	08:31 10:38-11:21/43 15:41
6	04:34 07:43-08:40/57 22:06	05:25 07:34-08:58/84 21:17 06:41-07:23/42	06:27 07:53-08:26/33 20:01	07:27 08:03-08:28/25 18:40	07:33 16:25	08:32 10:39-11:22/43 15:41
7	04:35 07:42-08:41/59 22:05	05:27 07:34-08:58/84 21:15 06:41-07:23/42	06:29 07:57-08:21/24 19:58	07:29 08:03-08:27/24 18:35	07:36 16:23	08:34 10:38-11:22/44 15:40
8	04:37 07:42-08:41/59 22:04	05:29 07:34-08:58/84 21:13 06:41-07:24/43	06:31 08:04-08:13/9 19:55	07:31 08:04-08:25/21 18:35	07:38 16:21	08:35 10:39-11:23/44 15:39
9	04:38 07:42-08:42/60 22:03	05:31 07:34-08:58/84 21:11 06:41-07:24/43	06:33 19:53	07:33 08:06-08:24/18 18:32	07:40 16:19	08:37 10:40-11:23/43 15:39
10	04:39 07:41-08:43/62 22:02	05:33 07:33-08:58/85 21:08 06:40-07:23/43	06:35 19:50	07:36 08:08-08:21/13 18:30	07:42 16:17	08:38 10:40-11:23/43 15:39
11	04:40 07:41-08:43/62 22:01	05:35 07:34-08:58/84 21:06 06:40-07:23/43	06:37 19:47	07:38 18:27	07:44 10:49-10:57/8 16:15	08:39 10:40-11:23/43 15:38
12	04:42 07:40-08:44/64 22:00	05:37 07:34-08:58/84 21:04 06:40-07:23/43	06:39 19:45	07:40 18:24	07:46 10:45-11:01/16 16:13	08:40 10:41-11:25/44 15:38
13	04:43 07:41-08:45/64 21:59	05:39 07:34-08:58/84 21:01 06:40-07:23/43	06:41 19:42	07:42 18:22	07:48 10:43-11:04/21 16:11	08:42 10:42-11:25/43 15:38
14	04:45 07:40-08:46/66 21:58	05:41 07:34-08:58/84 20:59 06:40-07:23/43	06:43 19:39	07:44 18:19	07:51 10:41-11:06/25 16:09	08:43 10:42-11:25/43 15:38
15	04:46 07:40-08:46/66 21:57	05:43 07:34-08:57/83 20:57 06:40-07:23/43	06:45 19:37	07:46 18:17	07:53 10:39-11:07/28 16:07	08:44 10:42-11:25/43 15:38
16	04:47 07:40-08:47/67 21:55	05:45 07:33-08:56/83 20:54 06:40-07:22/42	06:47 19:34	07:48 18:14	07:55 10:39-11:09/30 16:06	08:45 10:43-11:26/43 15:38
17	04:49 07:39-08:48/69 21:54	05:47 07:34-08:56/82 20:52 06:40-07:21/41	06:49 19:31	07:50 18:12	07:57 10:38-11:10/32 16:04	08:46 10:44-11:26/42 15:38
18	04:51 07:39-08:48/69 21:52	05:49 07:34-08:56/82 20:49 06:39-07:20/41	06:51 19:28	07:52 18:09	07:59 10:38-11:12/34 16:02	08:46 10:44-11:27/43 15:38
19	04:52 07:39-08:49/70 21:51	05:51 07:34-08:55/81 20:47 06:38-07:19/41	06:53 19:26	07:54 18:07	08:01 10:37-11:13/36 16:01	08:47 10:45-11:27/42 15:38
20	04:54 07:38-08:49/71 21:49	05:53 07:35-08:55/80 20:45 06:37-07:19/42	06:55 19:23	07:57 18:04	08:03 10:36-11:13/37 15:59	08:48 10:45-11:27/42 15:38
21	04:55 07:38-08:51/73 21:48	05:55 07:35-08:54/79 20:42 06:37-07:18/41	06:57 19:20	07:59 18:02	08:05 10:35-11:14/39 15:57	08:48 10:46-11:28/42 15:39
22	04:57 07:38-08:52/74 21:46	05:57 07:36-08:53/77 20:40 06:36-07:16/40	06:59 19:18	08:01 17:59	08:07 10:36-11:15/39 15:56	08:49 10:46-11:28/42 15:39
23	04:59 07:37-08:52/75 21:45	05:59 07:36-08:53/77 20:37 06:36-07:15/39	07:01 08:14-08:25/11 19:15	08:03 17:57	08:09 10:36-11:16/40 15:54	08:50 10:47-11:29/42 15:40
24	05:01 07:38-08:53/75 21:43	06:01 07:37-08:52/75 20:35 06:36-07:13/37	07:03 08:11-08:27/16 19:12	08:05 17:54	08:11 10:35-11:16/41 15:53	08:50 10:47-11:29/42 15:40
25	05:02 07:37-08:53/76 21:41	06:03 07:36-08:50/74 20:32 06:36-07:10/34	07:05 08:08-08:29/21 19:10	07:07 16:52	08:13 10:35-11:17/42 15:52	08:50 10:47-11:30/43 15:41
26	05:04 07:37-08:54/77 21:39	06:05 07:37-08:49/72 20:29 06:35-07:07/32	07:07 08:07-08:30/23 19:07	07:09 16:50	08:15 10:36-11:18/42 15:50	08:51 10:47-11:30/43 15:42
27	05:06 07:37-08:55/78 21:37	06:07 07:38-08:48/70 20:27 06:37-07:03/26	07:09 08:06-08:32/26 19:04	07:12 16:47	08:17 10:36-11:18/42 15:49	08:51 10:48-11:30/42 15:42
28	05:08 07:36-08:54/78 21:36	06:09 07:39-08:46/67 20:24 06:39-06:54/15	07:11 08:05-08:32/27 19:01	07:14 16:45	08:19 10:36-11:19/43 15:48	08:51 10:48-11:31/43 15:43
29	05:10 07:36-08:55/79 21:34	06:11 07:40-08:45/65 20:22 06:41-06:52/11	07:13 08:04-08:32/28 18:59	07:16 16:43	08:21 10:36-11:19/43 15:47	08:51 10:49-11:32/43 15:44
30	05:12 07:36-08:56/80 21:32	06:13 07:41-08:43/62 20:19 06:43-06:50/7	07:15 08:03-08:32/29 18:56	07:18 16:40	08:22 10:36-11:20/44 15:46	08:51 10:49-11:32/43 15:45
31	05:13 07:35-08:56/81 21:30	06:15 07:42-08:42/60 20:16		07:20 16:38		08:51 10:50-11:33/43 15:46
Potential sun hours	529	469	385	324	247	216
Sum of minutes with flicker	2330	3548	489	243	682	1330

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:

Mezares\_AB211223

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Anna / anna@environment.lv

Calculated:

26/06/2024 08:57/4.0.540

## SHADOW - Calendar per WTG

WTG: E6 - NORDEX N175/6.X 6800 175.0 !-! hub: 179.0 m (TOT: 266.5 m)

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.01	1.91	4.85	7.09	9.29	9.83	8.40	7.53	5.47	2.70	0.68	0.49

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
425	448	518	446	469	751	755	902	1,169	1,037	801	535	8,256

Idle start wind speed: Cut in wind speed from power curve

	January	February	March	April	May	June	July	August	September	October	November	December
1	08:51 15:48	08:15 09:12-09:42/30 16:45	07:11 06:49 17:47	06:49 05:32 19:53	05:32 04:36 20:55	04:36 04:30 21:52	04:30 03:05 22:09	03:05 02:15 21:28	02:15 01:17 20:14	01:17 18:53	07:22 08:49-09:06/17 16:36	08:24 15:45
2	08:50 15:49	08:13 09:12-09:42/30 16:47	07:08 06:46 17:49	06:46 05:30 19:55	05:30 04:34 20:57	04:34 04:31 21:54	04:31 03:06 22:08	03:06 02:16 21:26	02:16 01:19 20:11	01:19 18:51	07:25 08:47-09:07/20 16:34	08:26 15:44
3	08:50 15:50	08:11 09:13-09:42/29 16:49	07:05 06:43 17:52	06:43 05:28 19:57	05:28 04:33 20:59	04:33 04:31 21:55	04:31 03:07 22:08	03:07 02:17 21:24	02:17 01:20 20:09	01:20 18:48	07:27 08:46-09:09/23 16:31	08:27 15:43
4	08:50 15:52	08:09 09:14-09:42/28 16:52	07:03 06:41 17:54	06:41 05:25 19:59	05:25 04:32 21:01	04:32 04:32 21:56	04:32 03:08 22:07	03:08 02:18 21:21	02:18 01:21 20:06	01:21 18:45	07:29 08:45-09:10/25 16:29	08:29 15:42
5	08:49 15:53	08:07 09:14-09:42/28 16:54	07:00 06:38 17:56	06:38 05:23 20:01	05:23 04:31 21:03	04:31 04:33 21:58	04:33 03:09 22:07	03:09 02:19 21:25	02:19 01:22 20:03	01:22 18:43	07:31 08:44-09:10/26 16:27	08:31 15:41
6	08:49 15:55	08:05 09:14-09:40/26 16:56	06:58 06:35 17:58	06:35 05:21 20:03	05:21 04:31 21:06	04:31 04:34 21:59	04:34 03:10 22:06	03:10 02:20 21:17	02:20 01:23 20:01	01:23 18:40	07:33 08:44-09:11/27 16:25	08:32 15:41
7	08:48 15:56	08:02 09:16-09:40/24 16:58	06:55 06:33 18:00	06:33 05:19 20:05	05:19 04:30 21:08	04:30 04:35 22:00	04:35 03:11 22:05	03:11 02:21 21:15	02:21 01:24 20:02	01:24 18:37	07:35 08:43-09:12/29 16:23	08:35 15:40
8	08:47 15:58	08:00 09:17-09:39/22 17:01	06:53 06:30 18:02	06:30 05:17 20:07	05:17 04:29 21:10	04:29 04:37 22:01	04:37 03:12 22:04	03:12 02:22 21:13	02:22 01:25 20:03	01:25 18:35	07:38 08:44-09:13/29 16:21	08:35 15:39
9	08:47 15:59	07:58 09:18-09:37/19 17:03	06:50 06:27 18:05	06:27 05:14 20:09	05:14 04:28 21:12	04:28 04:38 22:02	04:38 03:13 22:03	03:13 02:23 21:11	02:23 01:26 20:03	01:26 18:32	07:40 08:43-09:13/30 16:19	08:36 15:39
10	08:46 16:01	07:56 09:20-09:36/16 17:05	06:47 06:25 18:07	06:25 05:12 20:12	05:12 04:28 21:14	04:28 04:39 22:03	04:39 03:14 22:02	03:14 02:24 21:08	02:24 01:27 20:03	01:27 18:30	07:42 08:43-09:12/29 16:17	08:38 15:39
11	08:45 16:03	07:54 09:23-09:33/10 17:07	06:45 06:22 18:09	06:22 05:10 20:14	05:10 04:27 21:16	04:27 04:40 22:04	04:40 03:15 22:01	03:15 02:25 21:06	02:25 01:28 20:04	01:28 18:27	07:44 08:43-09:13/30 16:15	08:39 15:38
12	08:44 16:04	07:52 08:20-08:25/5 17:10	06:42 06:19 18:11	06:19 05:08 20:16	05:08 04:27 21:18	04:27 04:42 22:05	04:42 03:16 22:00	03:16 02:26 21:04	02:26 01:29 20:04	01:29 18:24	07:46 08:43-09:13/30 16:13	08:40 15:38
13	08:43 16:06	07:49 08:18-08:29/11 17:12	06:39 06:17 18:13	06:17 05:06 20:18	05:06 04:26 21:20	04:26 04:43 22:06	04:43 03:17 21:01	03:17 02:27 20:01	02:27 01:30 20:01	01:30 18:22	07:48 08:44-09:13/29 16:11	08:41 15:38
14	08:42 16:08	07:47 08:15-08:30/15 17:14	06:37 06:14 18:15	06:14 05:04 20:20	05:04 04:26 21:21	04:26 04:45 22:07	04:45 03:18 21:58	03:18 02:28 20:59	02:28 01:31 20:02	01:31 18:19	07:51 08:44-09:13/29 16:09	08:43 15:38
15	08:41 16:10	07:45 08:13-08:32/19 17:16	06:34 06:12 18:17	06:12 05:02 20:22	05:02 04:25 21:23	04:25 04:46 22:07	04:46 03:19 21:56	03:19 02:29 20:57	02:29 01:32 20:03	01:32 18:17	07:53 08:44-09:12/28 16:07	08:44 15:38
16	08:40 16:12	07:42 08:11-08:32/21 17:19	06:31 06:09 18:19	06:09 05:00 20:24	05:00 04:25 21:25	04:25 04:47 22:08	04:47 03:20 21:55	03:20 02:30 20:54	02:30 01:33 20:04	01:33 18:14	07:55 08:45-09:13/28 16:06	08:45 15:38
17	08:39 09:19-09:28/9 16:13	07:40 08:11-08:33/22 17:21	06:29 06:07 18:22	06:07 05:04 20:26	05:04 04:28 21:27	04:28 04:49 22:08	04:49 03:21 21:54	03:21 02:31 20:52	02:31 01:34 20:04	01:34 18:14	07:57 08:45-09:12/27 16:04	08:45 15:38
18	08:37 09:17-09:30/13 16:15	07:38 08:09-08:33/24 17:23	06:26 06:04 18:24	06:04 05:04 20:28	05:04 04:29 21:29	04:29 04:51 22:09	04:51 03:22 21:52	03:22 02:32 20:49	02:32 01:35 20:04	01:35 18:09	07:59 08:47-09:13/26 16:02	08:46 15:38
19	08:36 09:15-09:32/17 16:17	07:35 08:10-08:34/24 17:25	06:23 06:01 18:26	06:01 05:05 20:30	05:05 04:31 21:31	04:31 04:52 22:09	04:52 03:23 21:51	03:23 02:33 20:47	02:33 01:36 20:04	01:36 18:07	08:01 08:47-09:12/25 16:01	08:47 15:38
20	08:35 09:15-09:34/19 16:19	07:33 08:09-08:34/25 17:28	06:21 06:09 18:28	06:09 05:09 20:32	05:09 04:33 21:33	04:33 04:54 22:10	04:54 03:24 21:49	03:24 02:34 20:44	02:34 01:37 20:04	01:37 18:04	08:03 08:48-09:11/23 15:59	08:48 15:38
21	08:33 09:14-09:35/21 16:21	07:31 08:09-08:34/25 17:30	06:18 06:06 18:30	06:06 05:06 20:34	05:06 04:31 21:35	04:31 04:56 22:10	04:56 03:25 21:48	03:25 02:35 20:42	02:35 01:38 20:04	01:38 18:02	08:05 08:49-09:10/21 15:57	08:48 15:39
22	08:32 09:13-09:36/23 16:23	07:28 08:09-08:34/25 17:32	06:15 06:04 18:32	06:04 05:04 20:37	05:04 04:30 21:36	04:30 04:57 22:10	04:57 03:26 21:46	03:26 02:36 20:39	02:36 01:39 20:04	01:39 17:59	08:07 08:51-09:10/19 15:56	08:49 15:39
23	08:30 09:12-09:37/25 16:26	07:26 08:10-08:34/24 17:34	06:13 06:01 18:34	06:01 05:04 20:39	05:04 04:31 21:38	04:31 04:59 22:10	04:59 03:27 21:44	03:27 02:37 20:37	02:37 01:40 20:04	01:40 17:57	08:09 08:52-09:09/17 15:54	08:49 15:40
24	08:29 09:13-09:39/26 16:28	07:23 08:10-08:33/23 17:36	06:10 06:08 18:36	06:08 05:04 20:41	05:04 04:32 21:40	04:32 04:59 22:10	04:59 03:28 21:43	03:28 02:38 20:34	02:38 01:41 20:04	01:41 17:54	08:11 08:54-09:07/13 15:53	08:50 15:40
25	08:27 09:12-09:39/27 16:30	07:21 08:10-08:31/21 17:39	06:07 06:05 18:38	06:05 05:04 20:43	05:04 04:33 21:42	04:33 04:59 22:10	04:59 03:29 21:41	03:29 02:38 20:32	02:38 01:42 20:04	01:42 17:52	08:13 08:56-09:06/10 15:52	08:50 15:41
26	08:25 09:12-09:40/28 16:32	07:18 08:12-08:31/19 17:41	06:05 06:03 18:40	06:03 05:04 20:45	05:04 04:34 21:43	04:34 04:59 22:10	04:59 03:30 21:39	03:30 02:39 20:29	02:39 01:43 20:04	01:43 17:50	08:15 07:41-08:02/21 15:50	08:50 15:42
27	08:24 09:12-09:41/29 16:34	07:16 08:13-08:28/15 17:43	06:02 06:00 18:42	06:00 05:04 20:47	05:04 04:35 21:45	04:35 04:59 22:10	04:59 03:31 21:37	03:31 02:40 20:27	02:40 01:44 20:04	01:44 16:47	08:17 07:43-08:01/18 15:49	08:51 15:42
28	08:22 09:12-09:41/29 16:36	07:13 08:16-08:26/10 17:45	05:59 06:07 18:44	06:07 05:09 20:49	05:09 04:41 21:46	04:41 04:28 22:10	04:28 03:32 21:36	03:32 02:41 20:24	02:41 01:45 20:04	01:45 16:45	08:19 07:45-07:59/14 15:48	08:51 15:43
29	08:20 09:12-09:42/30 16:38		06:57 06:07 19:47	06:07 05:37 20:51	05:37 04:39 21:48	04:39 04:28 22:10	04:28 03:33 21:34	03:33 02:42 20:22	02:42 01:46 20:04	01:46 16:43	08:21 07:48-07:58/10 15:47	08:51 15:44
30	08:18 09:12-09:42/30 16:41		06:54 06:08 19:49	06:08 05:35 20:53	05:35 04:38 21:50	04:38 04:29 22:09	04:29 03:34 21:32	03:34 02:43 20:19	02:43 01:47 20:04	01:47 16:40	08:22 07:50-07:53/3 15:46	08:51 15:45
31	08:16 09:12-09:42/30 16:43		06:51 06:09 19:51	06:09 05:37 21:51	05:37 04:37 21:51	04:37 04:37 21:51	04:37 03:35 21:30	03:35 02:43 20:16	02:43 01:47 20:16	01:47 16:38	08:22 08:51-09:02/11 15:46	08:51 15:46
Potential sun hours	235	266	366	426	508	529	529	469	385	324	247	216
Sum of minutes with flicker	356	590	0	0	0	0	0	0	0	347	610	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:

Mezares\_AB211223

Licensed user:

SIA Estonian, Latvian &amp; Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Anna / anna@environment.lv

Calculated:

26/06/2024 08:57/4.0.540

## SHADOW - Calendar per WTG

WTG: E7 - NORDEX N175/6.X 6800 175.0 !-! hub: 179.0 m (TOT: 266.5 m)

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.01	1.91	4.85	7.09	9.29	9.83	8.40	7.53	5.47	2.70	0.68	0.49

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
425	448	518	446	469	751	755	902	1,169	1,037	801	535	8,256

Idle start wind speed: Cut in wind speed from power curve

	January	February	March	April	May	June
1	08:51 12:33-13:09/36 15:48 10:14-11:18/64	08:15 10:56-11:15/19 16:45	07:11 08:03-08:34/31 17:47 07:37-07:55/18	06:49 19:53	05:32 06:19-07:29/70 20:55	04:36 21:52
2	08:50 12:34-13:10/36 15:49 10:15-11:19/64	08:13 11:00-11:12/12 16:47	07:08 08:05-08:32/27 17:50 07:35-07:55/20	06:46 19:55	05:30 06:19-07:26/67 20:57	04:35 21:54
3	08:50 12:34-13:10/36 15:50 10:15-11:19/64	08:11 08:41-08:45/4 16:50	07:06 07:34-07:57/23 17:52 08:15-08:31/16	06:43 19:57	05:28 06:20-07:20/60 20:59	04:33 21:55
4	08:50 12:34-13:10/36 15:52 10:16-11:19/63	08:09 08:39-08:48/9 16:52	07:03 07:33-07:57/24 17:54 08:18-08:27/9	06:41 07:24-07:32/8 19:59	05:25 06:22-07:20/58 21:02	04:32 21:57
5	08:49 12:36-13:11/35 15:53 10:17-11:21/64	08:07 08:37-08:50/13 16:54	07:00 07:32-07:57/25 17:56	06:38 07:18-07:36/18 20:01	05:23 06:24-07:19/55 21:04	04:32 21:58
6	08:49 12:36-13:11/35 15:55 10:18-11:21/63	08:05 08:34-08:51/17 16:56	06:58 07:32-07:57/25 17:58	06:35 07:15-07:39/24 20:03	05:21 06:25-07:19/54 21:06	04:31 21:59
7	08:48 12:37-13:11/34 15:56 10:19-11:21/62	08:03 08:32-08:52/20 16:58	06:55 07:32-07:57/25 18:00	06:33 07:12-07:40/28 20:05	05:19 06:26-07:18/52 21:08	04:30 22:00
8	08:47 12:37-13:11/34 15:58 10:20-11:22/62	08:00 08:32-08:53/21 17:01	06:53 07:31-07:56/25 18:03	06:30 07:09-07:41/32 20:07	05:17 06:26-07:17/51 21:10	04:29 22:01
9	08:47 12:38-13:11/33 15:59 10:21-11:22/61	07:58 08:30-08:53/23 17:03	06:50 07:32-07:56/24 18:05	06:27 07:08-07:43/35 20:10	05:15 06:26-07:16/50 21:12	04:28 22:02
10	08:46 12:39-13:11/32 16:01 10:22-11:23/61	07:56 08:31-08:54/23 17:05	06:47 07:32-07:55/23 18:07	06:25 07:06-07:43/37 20:12	05:12 06:26-07:15/49 21:14	04:28 22:03
11	08:45 12:40-13:11/31 16:03 10:23-11:23/60	07:54 08:31-08:54/23 17:07	06:45 07:33-07:53/20 18:09	06:22 07:06-07:44/38 20:14	05:10 06:26-07:14/48 21:16	04:27 22:04
12	08:44 12:41-13:11/30 10:39-11:24/45 16:04 10:25-10:37/12	07:52 08:30-08:54/24 17:10	06:42 07:34-07:53/19 18:11	06:20 07:04-07:44/40 20:16	05:08 06:27-07:12/45 21:18	04:27 22:05
13	08:43 12:42-13:10/28 10:38-11:23/45 16:06 10:27-10:35/8	07:49 08:21-08:29/8 17:12 08:31-08:54/23	06:39 07:35-07:50/15 18:13	06:17 07:04-07:45/41 20:18	05:06 06:27-07:10/43 21:20	04:26 22:06
14	08:42 12:43-13:10/27 16:08 10:39-11:24/45	07:47 08:17-08:53/36 17:14	06:37 07:38-07:47/9 18:15	06:14 06:57-07:45/48 20:20	05:04 06:29-07:09/40 21:22	04:26 22:07
15	08:41 12:45-13:09/24 16:10 10:40-11:25/45	07:45 08:15-08:53/38 17:16	06:34 18:17	06:12 06:54-07:45/51 20:22	05:02 06:29-07:07/38 21:23	04:25 22:07
16	08:40 12:46-13:08/22 16:12 10:40-11:24/44	07:42 08:10-08:52/42 17:19	06:31 18:19	06:09 06:46-07:45/59 20:24	05:00 06:30-07:03/33 21:25	04:25 22:08
17	08:39 12:48-13:08/20 16:14 10:41-11:25/44	07:40 08:08-08:52/44 17:21	06:29 18:22	06:07 06:42-07:45/63 20:26	04:59 06:31-06:58/27 21:27	04:25 22:08
18	08:37 12:50-13:06/16 16:15 10:41-11:25/44	07:38 08:05-08:50/45 17:23	06:26 18:24	06:04 06:39-07:44/65 20:28	04:57 06:32-06:56/24 21:29	04:25 22:09
19	08:36 12:52-13:03/11 16:17 10:41-11:25/44	07:35 08:03-08:48/45 17:25	06:23 18:26	06:02 06:37-07:44/67 20:30 06:28-06:36/8	04:55 06:33-06:55/22 21:31	04:25 22:09
20	08:35 10:42-11:25/43 16:19	07:33 08:01-08:38/37 17:28 08:40-08:43/3	06:21 18:28	05:59 06:25-07:43/78 20:32	04:53 06:35-06:54/19 21:33	04:25 22:10
21	08:33 10:43-11:25/42 16:22	07:31 08:00-08:39/39 17:30	06:18 18:30	05:57 06:23-07:43/80 20:35	04:51 06:36-06:51/15 21:35	04:25 22:10
22	08:32 10:43-11:25/42 16:24	07:28 08:00-08:39/39 17:32	06:15 18:32	05:54 06:21-07:42/81 20:37	04:50 06:39-06:49/10 21:36	04:25 22:10
23	08:30 10:44-11:24/40 16:26	07:26 08:00-08:39/39 17:34	06:13 18:34	05:52 06:19-07:41/82 20:39	04:48 21:38	04:26 22:10
24	08:29 10:45-11:25/40 16:28	07:23 07:59-08:39/40 17:36	06:10 18:36	05:49 06:19-07:41/82 20:41	04:47 21:40	04:26 22:10
25	08:27 10:46-11:24/38 16:30	07:21 08:00-08:38/38 17:39	06:07 18:38	05:47 06:19-07:40/81 20:43	04:45 21:42	04:26 22:10
26	08:25 10:47-11:24/37 16:32	07:18 08:00-08:38/38 17:41	06:05 18:40	05:44 06:18-07:38/80 20:45	04:44 21:43	04:27 22:10
27	08:24 10:48-11:23/35 16:34	07:16 08:00-08:37/37 17:43 07:42-07:50/8	06:02 18:42	05:42 06:18-07:37/79 20:47	04:42 21:45	04:27 22:10
28	08:22 10:49-11:22/33 16:36	07:13 08:02-08:36/34 17:45 07:40-07:53/13	05:59 18:45	05:39 06:18-07:36/78 20:49	04:41 21:46	04:28 22:10
29	08:20 10:51-11:21/30 16:38		06:57 19:47	05:37 06:18-07:34/76 20:51	04:39 21:48	04:28 22:10
30	08:18 10:53-11:20/27 16:41		06:54 19:49	05:35 06:18-07:32/74 20:53	04:38 21:50	04:29 22:09
31	08:17 10:55-11:18/23 16:43		06:51 19:51		04:37 21:51	
Potential sun hours	235	266	366	426	508	529
Sum of minutes with flicker	2050	854	378	1533	930	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:

Mezares\_AB211223

Licensed user:

SIA Estonian, Latvian & Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Anna / anna@environment.lv

Calculated:

26/06/2024 08:57/4.0.540

## SHADOW - Calendar per WTG

WTG: E7 - NORDEX N175/6.X 6800 175.0 !-! hub: 179.0 m (TOT: 266.5 m)

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.01	1.91	4.85	7.09	9.29	9.83	8.40	7.53	5.47	2.70	0.68	0.49

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
425	448	518	446	469	751	755	902	1,169	1,037	801	535	8,256

Idle start wind speed: Cut in wind speed from power curve

	July	August	September	October	November	December
1	04:30 22:09	05:15 06:37-07:23/46 21:28	06:17 07:05-07:43/38 20:14	07:17 08:14-08:31/17 18:53	07:22 08:00-08:23/23 16:36	08:24 12:22-12:53/31 15:45 10:06-11:05/59
2	04:31 22:08	05:17 06:37-07:24/47 21:26	06:19 07:05-07:42/37 20:11	07:19 08:12-08:32/20 18:51	07:25 08:00-08:23/23 16:34	08:26 12:22-12:54/32 15:44 10:05-11:06/61
3	04:31 22:08	05:19 06:36-07:26/50 21:24	06:21 07:06-07:41/35 20:09	07:21 08:11-08:33/22 18:48	07:27 08:01-08:23/22 16:31	08:27 12:21-12:54/33 15:43 10:05-11:06/61
4	04:32 22:07	05:21 06:36-07:27/51 21:22	06:23 07:07-07:39/32 20:06	07:23 08:10-08:33/23 18:45	07:29 08:02-08:22/20 16:29	08:29 12:22-12:55/33 15:42 10:04-11:06/62
5	04:33 22:07	05:23 06:35-07:27/52 21:19	06:25 07:08-07:36/28 20:03	07:25 08:09-08:33/24 18:43	07:31 08:05-08:21/16 16:27	08:31 12:22-12:56/34 15:41 10:04-11:06/62
6	04:34 22:06	05:25 06:35-07:28/53 21:17	06:27 07:10-07:34/24 20:01	07:27 08:08-08:33/25 18:40	07:33 08:07-08:20/13 16:25	08:32 12:22-12:57/35 15:41 10:04-11:07/63
7	04:36 22:05	05:27 06:35-07:28/53 21:15	06:29 07:13-07:31/18 19:58	07:29 08:08-08:33/25 18:38	07:36 08:09-08:18/9 16:23	08:34 12:22-12:57/35 15:40 10:03-11:07/64
8	04:37 22:04	05:29 06:32-07:29/57 21:13	06:31 07:18-07:27/9 19:55	07:31 08:07-08:32/25 18:35	07:38 08:12-08:15/3 16:21	08:35 12:22-12:58/36 15:40 10:04-11:07/63
9	04:38 22:03	05:31 06:31-07:30/59 21:11	06:33 19:53	07:34 08:08-08:32/24 18:32	07:40 10:30-10:43/13 16:19	08:37 12:22-12:58/36 15:39 10:05-11:08/63
10	04:39 22:02	05:33 06:29-07:29/60 21:08	06:35 19:50	07:36 08:08-08:31/23 18:30 08:51-09:03/12	07:42 10:27-10:46/19 16:17	08:38 12:23-12:59/36 15:39 10:04-11:08/64
11	04:40 22:01	05:35 06:28-07:35/67 21:06	06:37 19:47	07:38 08:41-08:46/5 08:48-09:06/18 18:27 08:09-08:30/21	07:44 10:25-10:49/24 16:15	08:39 12:23-12:59/36 15:38 10:04-11:08/64
12	04:42 22:00	05:37 06:27-07:38/71 21:04	06:39 19:45	07:40 08:37-09:07/30 18:25 08:09-08:29/20	07:46 10:23-10:51/28 16:13	08:40 12:24-13:00/36 15:38 10:05-11:09/64
13	04:43 21:59	05:39 06:26-07:40/74 21:01	06:41 19:42	07:42 08:35-09:08/33 18:22 08:11-08:27/16	07:48 10:23-10:53/30 16:11	08:41 12:24-13:01/37 15:38 10:05-11:09/64
14	04:45 21:58	05:41 06:26-07:42/76 20:59	06:43 19:39	07:44 08:33-09:09/36 18:19 08:13-08:24/11	07:51 10:21-10:54/33 16:09	08:43 12:24-13:01/37 15:38 10:05-11:10/65
15	04:46 21:57	05:43 06:26-07:44/78 20:57	06:45 19:37	07:46 08:33-09:10/37 18:17 08:17-08:21/4	07:53 10:20-10:55/35 16:07	08:44 12:24-13:02/38 15:38 10:06-11:10/64
16	04:48 21:55	05:45 06:25-07:45/80 20:54	06:47 19:34	07:48 08:32-09:10/38 18:14	07:55 10:20-10:56/36 16:06	08:45 12:25-13:02/37 15:38 10:06-11:10/64
17	04:49 21:54	05:47 06:25-07:45/80 20:52	06:49 19:31	07:50 08:31-09:10/39 18:12	07:57 10:19-10:57/38 16:04	08:45 12:25-13:03/38 15:38 10:07-11:11/64
18	04:51 21:52	05:49 06:24-07:46/82 20:49	06:51 19:28	07:52 08:31-09:10/39 18:09	07:59 10:19-10:59/40 16:02	08:46 12:26-13:03/37 15:38 10:07-11:11/64
19	04:52 21:51	05:51 06:25-07:46/81 20:47	06:53 19:26	07:54 08:31-09:10/39 18:07	08:01 10:19-10:59/40 16:01	08:47 12:27-13:04/37 15:38 10:08-11:12/64
20	04:54 21:49	05:53 06:25-07:47/82 20:45	06:55 19:23	07:57 08:31-09:10/39 18:04	08:03 10:18-11:00/42 15:59	08:48 12:26-13:04/38 15:38 10:08-11:12/64
21	04:56 06:51-06:57/6 21:48	05:55 06:26-07:47/81 20:42	06:57 19:20	07:59 08:31-09:09/38 18:02	08:05 10:18-11:00/42 15:57	08:48 12:27-13:05/38 15:39 10:09-11:13/64
22	04:57 06:48-07:01/13 21:46	05:57 06:28-07:47/79 20:40	06:59 19:18	08:01 08:31-09:08/37 17:59 09:09-09:15/6	08:07 10:18-11:01/43 15:56	08:49 12:27-13:05/38 15:39 10:09-11:13/64
23	04:59 06:45-07:03/18 21:45	05:59 06:30-07:48/78 20:37	07:01 19:15	08:03 08:34-09:19/45 17:57	08:09 12:30-12:40/10 15:55 10:18-11:02/44	08:49 12:28-13:06/38 15:40 10:10-11:14/64
24	05:01 06:44-07:05/21 21:43	06:01 06:41-07:48/67 20:35 06:32-06:40/8	07:03 19:12	08:05 08:36-09:20/44 17:54	08:11 12:27-12:43/16 15:53 10:18-11:02/44	08:50 12:28-13:06/38 15:40 10:10-11:14/64
25	05:03 06:42-07:06/24 21:41	06:03 06:43-07:48/65 20:32	07:05 19:10	07:07 07:38-08:21/43 16:52	08:13 12:25-12:45/20 15:52 10:18-11:02/44	08:50 12:29-13:06/37 15:41 10:10-11:14/64
26	05:04 06:42-07:07/25 21:39	06:05 06:44-07:47/63 20:29	07:07 19:07	07:09 07:41-08:23/42 16:50	08:15 12:24-12:46/22 15:50 10:19-11:04/45	08:51 12:29-13:07/38 15:42 10:10-11:15/65
27	05:06 06:41-07:09/28 21:37	06:07 06:49-07:46/57 20:27	07:09 19:04	07:12 07:45-08:23/38 16:47	08:17 12:24-12:49/25 15:49 10:19-11:04/45	08:51 12:30-13:07/37 15:43 10:11-11:15/64
28	05:08 06:40-07:15/35 21:36	06:09 06:55-07:46/51 20:24	07:11 19:02	07:14 07:47-08:23/36 16:45	08:19 12:24-12:50/26 15:48 10:19-11:04/45	08:51 12:30-13:07/37 15:43 10:11-11:16/65
29	05:10 06:39-07:18/39 21:34	06:11 06:58-07:45/47 20:22	07:13 08:21-08:26/5 18:59	07:16 07:52-07:57/5 16:43 08:00-08:24/24	08:21 12:23-12:51/28 10:19-11:05/46 15:47 10:08-10:16/8	08:51 12:31-13:08/37 15:44 10:12-11:16/64
30	05:12 06:39-07:20/41 21:32	06:13 07:04-07:45/41 20:19	07:15 08:16-08:29/13 18:56	07:18 08:00-08:23/23 16:40	08:22 12:23-12:52/29 10:20-11:05/45 15:46 10:06-10:18/12	08:51 12:32-13:09/37 15:45 10:13-11:17/64
31	05:14 06:38-07:22/44 21:30	06:15 07:04-07:44/40 20:16	16:38	07:20 08:00-08:24/24 16:38		08:51 12:32-13:09/37 15:46 10:14-11:18/64
Potential sun hours	529	469	385	324	247	216
Sum of minutes with flicker	294	1976	239	1070	1146	3093

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:

Mezares\_AB211223

Licensed user:

SIA Estonian, Latvian &amp; Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Anna / anna@environment.lv

Calculated:

26/06/2024 08:57/4.0.540

## SHADOW - Calendar per WTG

WTG: E8 - NORDEX N175/6.X 6800 175.0 !-! hub: 179.0 m (TOT: 266.5 m)

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

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Operational time

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425	448	518	446	469	751	755	902	1,169	1,037	801	535	8,256

Idle start wind speed: Cut in wind speed from power curve

	January		February		March	April		May		June	
1	08:51	10:38-10:50/12	08:15	07:11		06:49		05:32		04:36	05:30-06:09/39
	15:48	09:30-09:43/13	16:45	17:47		19:53		20:55		21:52	
2	08:50	10:40-10:50/10	08:13	07:08		06:46		05:30		04:35	05:30-06:08/38
	15:49	09:30-09:45/15	16:47	17:50		19:55		20:57		21:54	
3	08:50	10:41-10:49/8	08:11	07:05		06:43		05:28		04:33	05:30-06:08/38
	15:50	09:29-09:45/16	16:49	17:52		19:57		20:59		21:55	
4	08:50	10:43-10:47/4	08:09	07:03		06:41		05:25		04:32	05:30-06:08/38
	15:52	09:28-09:45/17	16:52	17:54		19:59		21:01		21:56	
5	08:49	09:28-09:47/19	08:07	07:00		06:38		05:23		04:31	05:31-06:08/37
	15:53		16:54	17:56		20:01		21:03		21:58	
6	08:49	09:27-09:47/20	08:05	06:58	07:24-07:31/7	06:35		05:21		04:31	05:31-06:08/37
	15:55		16:56	17:58		20:03		21:06		21:59	
7	08:48	09:27-09:48/21	08:02	06:55	07:21-07:33/12	06:33		05:19		04:30	05:31-06:07/36
	15:56		16:58	18:00		20:05		21:08		22:00	
8	08:47	09:27-09:49/22	08:00	06:53	07:18-07:34/16	06:30	06:55-07:05/10	05:17		04:29	05:32-06:09/37
	15:58		17:01	18:02		20:07		21:10		22:01	
9	08:47	09:27-09:49/22	07:58	06:50	07:16-07:36/20	06:27	06:53-07:08/15	05:15	05:49-06:00/11	04:28	05:31-06:09/38
	15:59		17:03	18:05		20:09		21:12		22:02	
10	08:46	09:27-09:50/23	07:56	06:47	07:13-07:36/23	06:25	06:50-07:09/19	05:12	05:46-06:02/16	04:28	05:32-06:10/38
	16:01		17:05	18:07		20:12		21:14		22:03	
11	08:45	09:28-09:51/23	07:54	06:45	07:10-07:36/26	06:22	06:48-07:10/22	05:10	05:45-06:03/18	04:27	05:32-06:10/38
	16:03		17:07	18:09		20:14		21:16		22:04	
12	08:44	09:28-09:52/24	07:52	06:42	07:08-07:37/29	06:20	06:45-07:10/25	05:08	05:43-06:04/21	04:27	05:32-06:11/39
	16:04		17:10	18:11		20:16		21:18		22:05	
13	08:43	09:28-09:52/24	07:49	06:39	07:06-07:36/30	06:17	06:43-07:11/28	05:06	05:42-06:05/23	04:26	05:32-06:11/39
	16:06		17:12	18:13		20:18		21:20		22:06	
14	08:42	09:28-09:52/24	07:47	06:37	07:02-07:35/33	06:14	06:40-07:11/31	05:04	05:42-06:06/24	04:26	05:31-06:11/40
	16:08		17:14	18:15		20:20		21:21		22:06	
15	08:41	09:29-09:53/24	07:45	06:34	06:59-07:34/35	06:12	06:38-07:11/33	05:02	05:41-06:07/26	04:25	05:32-06:12/40
	16:10		17:16	18:17		20:22		21:23		22:07	
16	08:40	09:29-09:53/24	07:42	06:31	06:57-07:34/37	06:09	06:36-07:10/34	05:00	05:39-06:07/28	04:25	05:32-06:12/40
	16:12		17:19	18:19		20:24		21:25		22:08	
17	08:39	09:30-09:54/24	07:40	06:29	06:54-07:32/38	06:07	06:36-07:11/35	04:59	05:38-06:08/30	04:25	05:32-06:13/41
	16:14		17:21	18:22		20:26		21:27		22:08	
18	08:37	09:30-09:54/24	07:38	06:26	06:53-07:30/37	06:04	06:34-07:09/35	04:57	05:36-06:08/32	04:25	05:32-06:13/41
	16:15		17:23	18:24		20:28		21:29		22:09	
19	08:36	09:30-09:53/23	07:35	06:23	06:53-07:27/34	06:02	06:34-07:09/35	04:55	05:34-06:08/34	04:25	05:32-06:13/41
	16:17		17:25	18:26		20:30		21:31		22:09	
20	08:35	09:31-09:54/23	07:33	06:21	06:52-07:23/31	05:59	06:33-07:07/34	04:53	05:34-06:09/35	04:25	05:32-06:13/41
	16:19		17:28	18:28		20:32		21:33		22:10	
21	08:33	09:31-09:54/23	07:31	06:18	06:51-07:22/31	05:57	06:33-07:07/34	04:51	05:33-06:08/35	04:25	05:32-06:13/41
	16:21		17:30	18:30		20:34		21:35		22:10	
22	08:32	09:32-09:53/21	07:28	06:15	06:52-07:21/29	05:54	06:34-07:05/31	04:50	05:33-06:09/36	04:25	05:33-06:14/41
	16:24		17:32	18:32		20:37		21:36		22:10	
23	08:30	09:33-09:53/20	07:26	06:13	06:51-07:18/27	05:52	06:33-07:03/30	04:48	05:31-06:09/38	04:25	05:33-06:14/41
	16:26		17:34	18:34		20:39		21:38		22:10	
24	08:29	09:34-09:53/19	07:23	06:10	06:52-07:13/21	05:49	06:34-06:59/25	04:47	05:31-06:09/38	04:26	05:33-06:14/41
	16:28		17:36	18:36		20:41		21:40		22:10	
25	08:27	09:36-09:52/16	07:21	06:07	06:52-07:09/17	05:47	06:35-06:58/23	04:45	05:31-06:09/38	04:26	05:34-06:15/41
	16:30		17:39	18:38		20:43		21:42		22:10	
26	08:25	09:37-09:51/14	07:18	06:05	06:54-07:08/14	05:44	06:35-06:56/21	04:44	05:31-06:10/39	04:27	05:34-06:14/40
	16:32		17:41	18:40		20:45		21:43		22:10	
27	08:24	09:39-09:50/11	07:16	06:02	06:55-07:05/10	05:42	06:36-06:54/18	04:42	05:30-06:09/39	04:27	05:35-06:15/40
	16:34		17:43	18:42		20:47		21:45		22:10	
28	08:22	09:43-09:46/3	07:13	05:59		05:39	06:38-06:53/15	04:41	05:30-06:09/39	04:28	05:35-06:14/39
	16:36		17:45	18:45		20:49		21:46		22:10	
29	08:20			06:57		05:37	06:40-06:50/10	04:39	05:30-06:09/39	04:28	05:35-06:15/40
	16:38			19:47		20:51		21:48		22:10	
30	08:18			06:54		05:35		04:38	05:30-06:09/39	04:29	05:36-06:15/39
	16:41			19:49		20:53		21:49		22:09	
31	08:16			06:51				04:37	05:30-06:09/39		
	16:43			19:51				21:51			
Potential sun hours	235		266	366		426		508		529	
Sum of minutes with flicker	586		0	557		563		717		1179	

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:

Mezares\_AB211223

Licensed user:

SIA Estonian, Latvian &amp; Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Anna / anna@environment.lv

Calculated:

26/06/2024 08:57/4.0.540

## SHADOW - Calendar per WTG

WTG: E8 - NORDEX N175/6.X 6800 175.0 !-! hub: 179.0 m (TOT: 266.5 m)

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.01	1.91	4.85	7.09	9.29	9.83	8.40	7.53	5.47	2.70	0.68	0.49

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
425	448	518	446	469	751	755	902	1,169	1,037	801	535	8,256

Idle start wind speed: Cut in wind speed from power curve

	July		August		September		October		November		December	
1	04:30	05:36-06:14/38	05:15	05:54-06:14/20	06:17	06:47-07:09/22	07:17	07:46-08:16/30	07:22		08:24	09:10-09:33/23
	22:09		21:28		20:14		18:53		16:36		15:45	
2	04:31	05:36-06:14/38	05:17	05:55-06:13/18	06:19	06:49-07:08/19	07:19	07:48-08:15/27	07:25		08:26	09:11-09:33/22
	22:08		21:26		20:11		18:51		16:34		15:44	
3	04:31	05:37-06:14/37	05:19	05:57-06:11/14	06:21	06:51-07:06/15	07:21	07:50-08:14/24	07:27		08:27	09:11-09:34/23
	22:08		21:24		20:09		18:48		16:31		15:43	
4	04:32	05:37-06:14/37	05:21	06:00-06:09/9	06:23	06:53-07:03/10	07:23	07:52-08:13/21	07:29		08:29	09:11-09:33/22
	22:07		21:21		20:06		18:45		16:29		15:42	
5	04:33	05:37-06:14/37	05:23		06:25		07:25	07:54-08:12/18	07:31		08:31	09:12-09:33/21
	22:07		21:19		20:03		18:43		16:27		15:41	
6	04:34	05:37-06:14/37	05:25		06:27		07:27	07:56-08:10/14	07:33		08:32	09:13-09:34/21
	22:06		21:17		20:01		18:40		16:25		15:41	
7	04:36	05:38-06:15/37	05:27		06:29		07:29	07:58-08:08/10	07:35		08:34	09:14-09:33/19
	22:05		21:15		19:58		18:38		16:23		15:40	
8	04:37	05:38-06:15/37	05:29		06:31		07:31	08:00-08:03/3	07:38		08:35	10:31-10:35/4
	22:04		21:13		19:55		18:35		16:21		15:40	09:16-09:33/17
9	04:38	05:38-06:15/37	05:31		06:33		07:33		07:40		08:36	10:29-10:37/8
	22:03		21:11		19:53		18:32		16:19		15:39	09:18-09:34/16
10	04:39	05:38-06:16/38	05:33		06:35		07:36		07:42		08:38	10:29-10:39/10
	22:02		21:08		19:50		18:30		16:17		15:39	09:19-09:34/15
11	04:40	05:38-06:16/38	05:35		06:37		07:38		07:44		08:39	10:28-10:40/12
	22:01		21:06		19:47		18:27		16:15		15:38	09:20-09:33/13
12	04:42	05:39-06:17/38	05:37		06:39		07:40		07:46		08:40	10:29-10:42/13
	22:00		21:04		19:45		18:24		16:13		15:38	09:22-09:34/12
13	04:43	05:39-06:17/38	05:39		06:41		07:42		07:48		08:41	10:29-10:42/13
	21:59		21:01		19:42		18:22		16:11		15:38	09:23-09:34/11
14	04:45	05:39-06:17/38	05:41	06:47-06:58/11	06:43		07:44		07:51	09:14-09:18/4	08:43	10:28-10:43/15
	21:58		20:59		19:39		18:19		16:09		15:38	09:24-09:34/10
15	04:46	05:39-06:17/38	05:43	06:45-07:01/16	06:45		07:46		07:53	09:11-09:22/11	08:44	10:28-10:44/16
	21:56		20:57		19:36		18:17		16:07		15:38	09:25-09:34/9
16	04:48	05:40-06:18/38	05:45	06:43-07:02/19	06:47	07:45-07:54/9	07:48		07:55	09:10-09:24/14	08:45	10:29-10:45/16
	21:55		20:54		19:34		18:14		16:06		15:38	09:26-09:34/8
17	04:49	05:40-06:18/38	05:47	06:41-07:03/22	06:49	07:43-07:56/13	07:50		07:57	09:09-09:25/16	08:45	10:29-10:45/16
	21:54		20:52		19:31		18:12		16:04		15:38	09:27-09:34/7
18	04:51	05:41-06:19/38	05:49	06:40-07:03/23	06:51	07:41-07:58/17	07:52		07:59	09:08-09:27/19	08:46	10:29-10:46/17
	21:52		20:49		19:28		18:09		16:02		15:38	09:28-09:35/7
19	04:52	05:41-06:19/38	05:51	06:39-07:06/27	06:53	07:39-07:58/19	07:54		08:01	09:08-09:28/20	08:47	10:30-10:47/17
	21:51		20:47		19:26		18:07		16:01		15:38	09:29-09:35/6
20	04:54	05:42-06:19/37	05:53	06:39-07:09/30	06:55	07:38-08:04/26	07:57		08:03	09:07-09:28/21	08:48	10:30-10:47/17
	21:49		20:44		19:23		18:04		15:59		15:38	09:29-09:35/6
21	04:56	05:42-06:19/37	05:55	06:38-07:10/32	06:57	07:37-08:06/29	07:59		08:05	09:07-09:29/22	08:48	10:31-10:48/17
	21:48		20:42		19:20		18:02		15:57		15:39	09:30-09:36/6
22	04:57	05:43-06:19/36	05:57	06:38-07:11/33	06:59	07:36-08:06/30	08:01		08:07	09:07-09:30/23	08:49	10:31-10:48/17
	21:46		20:39		19:18		17:59		15:56		15:39	09:30-09:36/6
23	04:59	05:43-06:19/36	05:59	06:38-07:12/34	07:01	07:35-08:07/32	08:03		08:09	09:07-09:30/23	08:49	10:32-10:49/17
	21:44		20:37		19:15		17:57		15:54		15:40	09:31-09:37/6
24	05:01	05:45-06:19/34	06:01	06:38-07:13/35	07:03	07:35-08:08/33	08:05		08:11	09:07-09:31/24	08:50	10:32-10:49/17
	21:43		20:34		19:12		17:54		15:53		15:40	09:31-09:37/6
25	05:02	05:45-06:18/33	06:03	06:38-07:13/35	07:05	07:35-08:12/37	07:07		08:13	09:07-09:31/24	08:50	10:32-10:49/17
	21:41		20:32		19:10		16:52		15:52		15:41	09:31-09:38/7
26	05:04	05:47-06:18/31	06:05	06:38-07:12/34	07:07	07:37-08:14/37	07:09		08:15	09:08-09:32/24	08:50	10:33-10:49/16
	21:39		20:29		19:07		16:50		15:50		15:42	09:31-09:38/7
27	05:06	05:49-06:18/29	06:07	06:38-07:12/34	07:09	07:38-08:15/37	07:12		08:17	09:08-09:32/24	08:51	10:33-10:50/17
	21:37		20:27		19:04		16:47		15:49		15:43	09:31-09:39/8
28	05:08	05:50-06:17/27	06:09	06:39-07:12/33	07:11	07:40-08:16/36	07:14		08:19	09:08-09:32/24	08:51	10:34-10:50/16
	21:36		20:24		19:01		16:45		15:48		15:43	09:31-09:40/9
29	05:10	05:52-06:17/25	06:11	06:41-07:12/31	07:13	07:42-08:16/34	07:16		08:20	09:09-09:33/24	08:51	10:35-10:50/15
	21:34		20:22		18:59		16:43		15:47		15:44	09:31-09:41/10
30	05:12	05:52-06:16/24	06:13	06:43-07:11/28	07:15	07:45-08:16/31	07:18		08:22	09:09-09:33/24	08:51	10:36-10:50/14
	21:32		20:19		18:56		16:40		15:46		15:45	09:31-09:42/11
31	05:14	05:54-06:16/22	06:15	06:45-07:10/25			07:20				08:51	10:37-10:51/14
	21:30		20:16				16:38				15:46	09:31-09:43/12
Potential sun hours	529		469		385		324		247		216	
Sum of minutes with flicker		1086		563		486		147		341		727

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:

Mezares\_AB211223

Licensed user:

SIA Estonian, Latvian &amp; Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Anna / anna@environment.lv

Calculated:

26/06/2024 08:57/4.0.540

## SHADOW - Calendar per WTG

WTG: E9 - NORDEX N175/6.X 6800 175.0 !-! hub: 179.0 m (TOT: 266.5 m)

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.01	1.91	4.85	7.09	9.29	9.83	8.40	7.53	5.47	2.70	0.68	0.49

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
425	448	518	446	469	751	755	902	1,169	1,037	801	535	8,256

Idle start wind speed: Cut in wind speed from power curve

	January	February	March	April	May	June
1	08:50 15:48	08:14 16:45	07:11 17:47	06:49 19:53	07:45-07:48/3 20:55	05:32 21:52
2	08:50 15:49	08:13 16:47	07:08 17:49	06:46 19:55	06:25-07:17/52 20:57	04:35 21:54
3	08:50 15:50	08:11 16:49	07:05 17:52	06:43 19:57	06:24-07:17/53 20:59	04:33 21:55
4	08:50 15:52	08:09 16:52	07:03 17:54	06:41 19:59	06:24-07:17/53 21:01	04:32 21:56
5	08:49 15:53	08:07 16:54	07:00 17:56	06:38 20:01	06:24-07:17/53 21:03	04:31 21:58
6	08:49 15:55	08:04 16:56	06:58 17:58	06:35 20:03	06:24-07:17/53 21:05	04:31 21:59
7	08:48 15:56	08:02 16:58	06:55 18:00	06:33 20:05	06:24-07:17/53 21:07	04:30 22:00
8	08:47 15:58	08:00 17:01	06:52 18:02	06:30 20:07	06:24-07:16/52 21:10	04:29 22:01
9	08:47 15:59	07:58 17:03	06:50 18:05	06:27 20:09	06:23-07:16/53 21:12	04:28 22:02
10	08:46 16:01	07:56 17:05	06:47 18:07	06:25 20:11	06:23-07:16/53 21:14	04:28 22:03
11	08:45 16:03	07:54 17:07	06:45 18:09	06:22 20:14	06:23-07:15/52 21:16	04:27 22:04
12	08:44 16:04	07:52 17:10	06:42 18:11	06:19 20:16	06:23-07:14/51 21:17	04:27 22:05
13	08:43 16:06	07:49 17:12	06:39 18:13	06:17 20:18	06:24-07:14/50 21:19	04:26 22:06
14	08:42 16:08	07:47 17:14	06:37 18:15	06:14 20:20	06:25-07:14/49 21:21	04:26 22:06
15	08:41 16:10	07:45 17:16	06:34 18:17	06:12 20:22	06:25-07:13/48 21:23	04:25 22:07
16	08:40 16:12	07:42 17:19	06:31 18:19	06:09 20:24	06:25-07:12/47 21:25	04:25 22:08
17	08:39 16:14	07:40 17:21	06:29 18:22	06:07 20:26	06:25-07:11/46 21:27	04:25 22:08
18	08:37 16:15	07:38 17:23	06:26 18:24	06:04 20:28	06:26-07:11/45 21:29	04:25 22:09
19	08:36 16:17	07:35 17:25	06:23 18:26	06:02 20:30	06:27-07:10/44 21:31	04:25 22:09
20	08:35 16:19	07:33 17:28	06:21 18:28	05:59 20:32	06:28-07:10/42 21:33	04:25 22:09
21	08:33 16:21	07:30 17:30	06:18 18:30	05:56 20:34	06:28-07:08/40 21:34	04:25 22:10
22	08:32 16:24	07:28 17:32	06:15 18:32	05:54 20:36	06:29-07:08/39 21:36	04:25 22:10
23	08:30 16:26	07:26 17:34	06:13 18:34	05:52 20:39	06:29-07:06/37 21:38	04:25 22:10
24	08:29 16:28	07:23 17:36	06:10 18:36	05:49 20:41	06:31-07:05/34 21:40	04:26 22:10
25	08:27 16:30	07:21 17:39	06:07 18:38	05:47 20:43	06:32-07:04/32 21:41	04:26 22:10
26	08:25 16:32	07:18 17:41	06:05 18:40	05:44 20:45	06:32-07:02/30 21:43	04:27 22:10
27	08:24 16:34	07:16 17:43	06:02 18:42	05:42 20:47	06:34-07:01/27 21:45	04:27 22:10
28	08:22 16:36	07:13 17:45	05:59 18:44	05:39 20:49	06:35-06:59/24 21:46	04:28 22:10
29	08:20 16:38		06:57 19:47	05:37 20:51	06:37-06:55/18 21:48	04:28 22:09
30	08:18 16:41		06:54 19:49	05:35 20:53	06:39-06:51/12 21:49	04:29 22:09
31	08:16 16:43		06:51 19:51		06:42-06:48/6 21:51	
Potential sun hours	235	266	366	426	508	529
Sum of minutes with flicker	0	0	581	482	1300	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:

Mezares\_AB211223

Licensed user:

SIA Estonian, Latvian &amp; Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Anna / anna@environment.lv

Calculated:

26/06/2024 08:57/4.0.540

## SHADOW - Calendar per WTG

WTG: E9 - NORDEX N175/6.X 6800 175.0 !-! hub: 179.0 m (TOT: 266.5 m)

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.01	1.91	4.85	7.09	9.29	9.83	8.40	7.53	5.47	2.70	0.68	0.49

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
425	448	518	446	469	751	755	902	1,169	1,037	801	535	8,256

Idle start wind speed: Cut in wind speed from power curve

	July	August	September	October	November	December
1	04:30 22:09	05:15 06:34-07:25/51 21:28	06:17 20:14	07:17 07:53-08:18/25 18:53	07:22 16:36	08:24 15:45
2	04:31 22:08	05:17 06:34-07:25/51 21:26	06:19 20:11	07:19 07:54-08:17/23 18:51	07:25 16:34	08:26 15:44
3	04:31 22:08	05:19 06:34-07:26/52 21:24	06:21 20:09	07:21 07:54-08:16/22 18:48	07:27 16:31	08:27 15:43
4	04:32 22:07	05:21 06:34-07:26/52 21:21	06:23 20:06	07:23 07:55-08:14/19 18:45	07:29 16:29	08:29 15:42
5	04:33 22:06	05:23 06:33-07:26/53 21:19	06:25 20:03	07:25 07:57-08:12/15 18:43	07:31 16:27	08:31 15:41
6	04:34 22:06	05:25 06:33-07:26/53 21:17	06:27 20:01	07:27 08:00-08:08/8 18:40	07:33 16:25	08:32 15:41
7	04:36 22:05	05:27 06:33-07:26/53 21:15	06:29 19:58	07:29 18:37	07:35 16:23	08:34 15:40
8	04:37 22:04	05:29 06:33-07:26/53 21:13	06:31 19:55	07:31 18:35	07:38 16:21	08:35 15:40
9	04:38 22:03	05:31 06:34-07:26/52 21:10	06:33 19:53	07:33 18:32	07:40 16:19	08:36 15:39
10	04:39 22:02	05:33 06:33-07:25/52 21:08	06:35 19:50	07:35 18:30	07:42 16:17	08:38 15:39
11	04:40 22:01	05:35 06:33-07:25/52 21:06	06:37 19:47	07:38 18:27	07:44 16:15	08:39 15:38
12	04:42 22:00	05:37 06:34-07:25/51 21:04	06:39 07:33-07:44/11 19:45	07:40 18:24	07:46 16:13	08:40 15:38
13	04:43 06:49-06:59/10 21:59	05:39 06:34-07:25/51 21:01	06:41 07:31-07:46/15 19:42	07:42 18:22	07:48 16:11	08:41 15:38
14	04:45 06:46-07:01/15 21:58	05:41 06:35-07:24/49 20:59	06:43 07:29-07:47/18 19:39	07:44 18:19	07:50 16:09	08:42 15:38
15	04:46 06:45-07:06/21 21:56	05:43 06:36-07:24/48 20:57	06:45 07:28-07:47/19 19:36	07:46 18:17	07:53 16:07	08:43 15:38
16	04:48 06:44-07:09/25 21:55	05:45 06:36-07:23/47 20:54	06:47 07:27-07:48/21 19:34	07:48 18:14	07:55 16:06	08:44 15:38
17	04:49 06:43-07:11/28 21:54	05:47 06:36-07:21/45 20:52	06:49 07:27-07:48/21 19:31	07:50 18:12	07:57 16:04	08:45 15:38
18	04:51 06:42-07:13/31 21:52	05:49 06:38-07:20/42 20:49	06:51 07:26-07:48/22 19:28	07:52 18:09	07:59 16:02	08:46 15:38
19	04:52 06:41-07:14/33 21:51	05:51 06:39-07:19/40 20:47	06:53 07:26-07:47/21 19:26 08:08-08:10/2	07:54 18:07	08:01 16:01	08:47 15:38
20	04:54 06:40-07:16/36 21:49	05:53 06:41-07:18/37 20:44	06:55 07:25-07:45/20 19:23 08:02-08:15/13	07:56 18:04	08:03 15:59	08:48 15:38
21	04:56 06:39-07:17/38 21:48	05:55 06:43-07:16/33 20:42	06:57 07:25-07:44/19 19:20 08:00-08:17/17	07:59 18:02	08:05 15:57	08:48 15:39
22	04:57 06:39-07:18/39 21:46	05:57 06:46-07:15/29 20:39	06:59 07:27-07:43/16 19:18 07:58-08:18/20	08:01 17:59	08:07 15:56	08:49 15:39
23	04:59 06:38-07:19/41 21:44	05:59 06:49-07:12/23 20:37	07:01 07:29-07:41/12 19:15 07:56-08:19/23	08:03 17:57	08:09 15:54	08:49 15:40
24	05:01 06:38-07:20/42 21:43	06:01 06:51-07:10/19 20:34	07:03 07:31-07:39/8 19:12 07:55-08:19/24	08:05 17:54	08:11 15:53	08:50 15:40
25	05:02 06:36-07:20/44 21:41	06:03 06:55-07:04/9 20:32	07:05 07:54-08:20/26 19:09	07:07 16:52	08:13 15:52	08:50 15:41
26	05:04 06:36-07:22/46 21:39	06:05 20:29	07:07 07:53-08:20/27 19:07	07:09 16:50	08:15 15:50	08:50 15:42
27	05:06 06:36-07:23/47 21:37	06:07 20:27	07:09 07:53-08:20/27 19:04	07:11 16:47	08:17 15:49	08:51 15:43
28	05:08 06:35-07:23/48 21:35	06:09 20:24	07:11 07:52-08:19/27 19:01	07:14 16:45	08:19 15:48	08:51 15:43
29	05:10 06:35-07:24/49 21:34	06:11 20:22	07:13 07:53-08:20/27 18:59	07:16 16:43	08:20 15:47	08:51 15:44
30	05:12 06:35-07:24/49 21:32	06:13 20:19	07:15 07:53-08:19/26 18:56	07:18 16:40	08:22 15:46	08:51 15:45
31	05:14 06:34-07:24/50 21:30	06:15 20:16		07:20 16:38		08:51 15:46
Potential sun hours	529	469	385	324	247	216
Sum of minutes with flicker	692	1097	482	112	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