

Project:

Mezares\_AB211223

Licensed user:

SIA Estonian, Latvian &amp; Lithuanian environment

Vilandes 3-6

LV-1010 Riga

0037167242411

Anna / anna@environment.lv

Calculated:

25/06/2024 18:19/4.0.540

## SHADOW - Calendar per WTG

WTG: E1 - Siemens Gamesa SG 7.0-170 7000 170.0 !OI hub: 165.0 m (TOT: 250.0 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
434	458	529	455	479	767	770	921	1,193	1,059	818	546	8,428

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

	January	February	March	April	May	June
1	08:50 15:48	08:14 15:32-15:52/20 16:45	07:10 16:18-16:47/29 17:47	06:48 19:53	05:32 20:55	04:35 21:52
2	08:50 15:49	08:12 15:33-15:51/18 16:47	07:08 16:18-16:46/28 17:49	06:46 19:55	05:30 20:57	04:34 21:54
3	08:50 15:50	08:11 15:34-15:51/17 16:49	07:05 16:18-16:45/27 17:51	06:43 19:57	05:27 20:59	04:33 21:55
4	08:50 15:51	08:09 15:36-15:50/14 16:51	07:03 16:20-16:44/24 17:54	06:40 19:59	05:25 21:01	04:32 21:56
5	08:49 15:53	08:06 15:37-15:47/10 16:54	07:00 16:21-16:42/21 17:56	06:38 20:01	05:23 21:03	04:31 21:58
6	08:49 15:54	08:04 16:56	06:58 16:23-16:39/16 17:58	06:35 20:03	05:21 21:05	04:30 21:59
7	08:48 15:56	08:02 16:58	06:55 16:27-16:36/9 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 17:07-17:34/27 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 17:06-17:36/30 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 17:06-17:38/32 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 17:05-17:38/33 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 17:05-17:38/33 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 17:05-17:38/33 18:13	06:17 20:18	05:06 21:19	04:26 22:06
14	08:42 16:08	07:47 16:31-16:36/5 17:14	06:37 17:06-17:39/33 18:15	06:14 20:20	05:04 21:21	04:25 22:06
15	08:41 16:09	07:45 16:27-16:41/14 17:16	06:34 17:06-17:38/32 18:17	06:12 20:22	05:02 21:23	04:25 22:07
16	08:40 16:11	07:42 16:24-16:43/19 17:18	06:31 17:07-17:37/30 18:19	06:09 20:24	05:00 21:25	04:25 22:08
17	08:38 16:13	07:40 16:23-16:45/22 17:21	06:29 17:09-17:37/28 18:21	06:06 20:26	04:58 21:27	04:25 22:08
18	08:37 15:33-15:37/4 16:15	07:38 16:21-16:46/25 17:23	06:26 17:11-17:36/25 18:23	06:04 20:28	04:56 21:29	04:25 22:09
19	08:36 15:32-15:38/6 16:17	07:35 16:20-16:47/27 17:25	06:23 17:14-17:34/20 18:26	06:01 20:30	04:55 21:31	04:25 22:09
20	08:35 15:31-15:40/9 16:19	07:33 16:19-16:48/29 17:27	06:21 17:16-17:33/17 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 16:18-16:48/30 17:30	06:18 17:18-17:30/12 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 16:18-16:49/31 17:32	06:15 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 16:17-16:49/32 17:34	06:12 18:34	05:51 20:38	04:48 21:38	04:25 22:10
24	08:29 15:30-15:50/20 16:27	07:23 16:17-16:49/32 17:36	06:10 18:36	05:49 20:41	04:46 21:40	04:26 22:10
25	08:27 15:29-15:51/22 16:30	07:20 16:17-16:49/32 17:38	06:07 18:38	05:46 20:43	04:45 21:41	04:26 22:10
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28	08:22 15:30-15:52/22 16:36	07:13 16:17-16:48/31 17:45	05:59 18:44	05:39 20:49	04:40 21:46	04:27 22:10
29	08:20 15:30-15:52/22 16:38		06:56 19:46	05:37 20:51	04:39 21:48	04:28 22:09
30	08:18 15:30-15:52/22 16:40		06:54 19:48	05:34 20:53	04:38 21:49	04:29 22:09
31	08:16 15:31-15:52/21 16:43		06:51 19:51		04:37 21:51	
Potential sun hours	235	266	366	426	508	529
Sum of minutes with flicker	238	471	617	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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## SHADOW - Calendar per WTG

WTG: E1 - Siemens Gamesa SG 7.0-170 7000 170.0 !O! hub: 165.0 m (TOT: 250.0 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
434	458	529	455	479	767	770	921	1,193	1,059	818	546	8,428

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	17:44-18:17/33 16:36	07:22 15:45
2	04:30 22:08	05:17 21:26	06:19 20:11	07:19 18:51	17:44-18:17/33 16:33	07:24 15:44
3	04:31 22:08	05:19 21:23	06:21 20:08	07:21 18:48	17:43-18:16/33 16:31	07:27 15:43
4	04:32 22:07	05:21 21:21	06:23 20:06	07:23 18:45	17:44-18:15/31 16:29	07:29 15:42
5	04:33 22:06	05:23 21:19	06:25 20:03	07:25 18:43	17:44-18:12/28 15:11-15:14/3 16:27	07:31 15:41
6	04:34 22:06	05:25 21:17	06:27 20:00	07:27 18:40	17:44-18:09/25 16:25	07:33 15:40
7	04:35 22:05	05:27 21:15	06:29 19:58	07:29 18:37	17:01-17:14/13 17:44-18:06/22 16:23	07:35 15:40
8	04:36 22:04	05:29 21:13	06:31 19:55	07:31 18:35	16:58-17:16/18 17:45-18:03/18 16:21	07:37 15:39
9	04:38 22:03	05:31 21:10	06:33 19:52	07:33 18:32	16:55-17:17/22 17:46-18:01/15 16:19	07:40 15:39
10	04:39 22:02	05:33 21:08	06:35 19:50	07:35 18:29	16:53-17:18/25 17:48-17:58/10 16:17	07:42 15:38
11	04:40 22:01	05:35 21:06	06:37 19:47	07:37 18:27	16:52-17:19/27 16:15	07:44 15:38
12	04:42 22:00	05:37 21:04	06:39 19:44	07:39 18:24	16:52-17:20/28 16:13	07:46 15:38
13	04:43 21:59	05:39 21:01	06:41 19:42	07:42 18:22	16:50-17:21/31 16:11	07:48 15:38
14	04:44 21:58	05:41 20:59	06:43 19:39	07:44 18:19	16:50-17:21/31 16:09	07:50 15:37
15	04:46 21:56	05:43 20:56	06:45 19:36	07:46 18:17	16:49-17:21/32 16:07	07:53 15:37
16	04:47 21:55	05:45 20:54	06:47 19:34	07:48 18:14	16:48-17:20/32 16:05	07:55 15:37
17	04:49 21:54	05:47 20:52	06:49 19:31	07:50 18:11	16:49-17:21/32 16:04	07:57 15:37
18	04:50 21:52	05:49 20:49	06:51 19:28	07:52 18:09	16:48-17:20/32 16:02	07:59 15:38
19	04:52 21:51	05:51 20:47	06:53 19:26	07:54 18:06	16:48-17:20/32 16:00	08:01 15:38
20	04:54 21:49	05:53 20:44	06:55 19:23	07:56 18:04	16:48-17:19/31 15:59	08:03 15:38
21	04:55 21:48	05:55 20:42	06:57 19:20	07:58 18:01	16:49-17:19/30 15:57	08:05 15:38
22	04:57 21:46	05:57 20:39	06:59 19:17	08:01 17:59	16:49-17:18/29 15:56	08:07 15:39
23	04:59 21:44	05:59 20:37	07:01 19:15	08:03 17:57	16:50-17:16/26 15:54	08:09 15:39
24	05:00 21:43	06:01 20:34	07:03 19:12	08:05 17:54	16:52-17:16/24 15:53	08:11 15:40
25	05:02 21:41	06:03 20:32	07:05 19:09	07:07 16:52	15:53-16:14/21 15:51	08:13 15:41
26	05:04 21:39	06:05 20:29	07:07 19:07	07:09 16:49	15:54-16:12/18 15:50	08:15 15:41
27	05:06 21:37	06:07 20:27	07:09 19:04	07:11 16:47	15:57-16:10/13 15:49	08:17 15:42
28	05:08 21:35	06:09 20:24	07:11 19:01	07:14 16:45	15:57-16:10/13 15:48	08:19 15:43
29	05:10 21:33	06:11 20:21	07:13 18:59	07:16 16:42	15:57-16:10/13 15:47	08:20 15:44
30	05:11 21:32	06:13 20:19	07:15 18:56	07:18 16:40	15:57-16:10/13 15:46	08:22 15:45
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	221	795	323	0

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

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

## SHADOW - Calendar per WTG

WTG: E10 - Siemens Gamesa SG 7.0-170 7000 170.0 !OI hub: 165.0 m (TOT: 250.0 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

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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 07:43-08:34/51 17:47	06:49 19:53	05:32 20:55	04:36 05:48-06:20/32 21:52
2	08:50 15:49	08:13 16:47	07:08 07:42-08:34/52 17:49	06:46 19:55	05:30 20:57	04:35 05:48-06:19/31 21:54
3	08:50 15:50	08:11 16:49	07:05 07:43-08:35/52 17:52	06:43 19:57	05:28 20:59	04:33 05:48-06:19/31 21:55
4	08:49 15:52	08:09 16:52	07:03 07:44-08:35/51 17:54	06:41 19:59	05:25 21:01	04:32 05:49-06:19/30 21:56
5	08:49 15:53	08:07 08:36-08:39/3 16:54	07:00 07:43-08:35/52 17:56	06:38 20:01	05:23 05:58-06:09/11 21:03	04:32 05:50-06:19/29 21:58
6	08:49 15:55	08:04 08:34-08:42/8 16:56	06:58 07:43-08:36/53 17:58	06:35 20:03	05:21 05:55-06:11/16 21:05	04:31 05:50-06:19/29 21:59
7	08:48 15:56	08:02 08:32-08:45/13 16:58	06:55 07:42-08:35/53 18:00	06:33 20:05	05:19 05:53-06:13/20 21:07	04:30 05:50-06:18/28 22:00
8	08:47 15:58	08:00 08:30-08:46/16 17:01	06:52 07:41-08:34/53 18:02	06:30 20:07	05:17 05:51-06:15/24 21:09	04:29 05:51-06:19/28 22:01
9	08:47 15:59	07:58 08:27-08:47/20 17:03	06:50 07:41-08:35/54 18:05	06:27 06:53-06:58/5 20:09	05:15 05:50-06:16/26 21:11	04:28 05:51-06:18/27 22:02
10	08:46 16:01	07:56 08:26-08:48/22 17:05	06:47 07:40-08:34/54 18:07	06:25 06:50-06:59/9 20:11	05:12 05:49-06:16/27 21:13	04:28 05:52-06:18/26 22:03
11	08:45 16:03	07:54 08:25-08:48/23 17:07	06:45 07:39-08:33/54 18:09	06:22 06:48-07:00/12 20:14	05:10 05:48-06:17/29 21:15	04:27 05:52-06:18/26 22:04
12	08:44 16:04	07:52 08:25-08:49/24 17:10	06:42 07:39-08:31/52 18:11	06:19 06:45-07:00/15 20:16	05:08 05:47-06:18/31 21:17	04:27 05:53-06:18/25 22:05
13	08:43 16:06	07:49 08:25-08:49/24 17:12	06:39 07:39-08:31/52 18:13	06:17 06:43-07:01/18 20:18	05:06 05:46-06:18/32 21:19	04:26 05:54-06:18/24 22:06
14	08:42 16:08	07:47 08:25-08:49/24 17:14	06:37 07:39-08:29/50 18:15	06:14 06:40-07:00/20 20:20	05:04 05:47-06:19/32 21:21	04:26 05:53-06:17/24 22:06
15	08:41 16:10	07:45 08:26-08:49/23 17:16	06:34 07:39-08:28/49 18:17	06:12 06:41-07:00/19 20:22	05:02 05:46-06:19/33 21:23	04:26 05:54-06:18/24 22:07
16	08:40 16:12	07:42 08:25-08:48/23 17:19	06:31 07:40-08:27/47 18:19	06:09 06:40-07:00/20 20:24	05:00 05:45-06:19/34 21:25	04:25 05:54-06:18/24 22:08
17	08:38 16:14	07:40 08:26-08:48/22 17:21	06:29 07:40-08:24/44 18:22	06:07 06:41-06:59/18 20:26	04:59 05:46-06:20/34 21:27	04:25 05:55-06:18/23 22:08
18	08:37 16:15	07:38 08:27-08:47/20 17:23	06:26 07:40-08:21/41 18:24	06:04 06:41-06:58/17 20:28	04:57 05:45-06:20/35 21:29	04:25 05:55-06:18/23 22:09
19	08:36 16:17	07:35 08:28-08:46/18 17:25	06:23 07:42-08:19/37 18:26	06:02 06:42-06:57/15 20:30	04:55 05:45-06:20/35 21:31	04:25 05:55-06:18/23 22:09
20	08:35 16:19	07:33 08:29-08:44/15 17:28	06:21 07:43-08:12/29 18:28	05:59 06:42-06:55/13 20:32	04:53 05:45-06:20/35 21:33	04:25 05:56-06:18/22 22:09
21	08:33 16:21	07:30 08:32-08:42/10 17:30	06:18 07:44-08:09/25 18:30	05:56 06:45-06:53/8 20:34	04:51 05:45-06:20/35 21:34	04:25 05:57-06:19/22 22:10
22	08:32 16:24	07:28 07:55-07:57/2 17:32 08:09-08:24/15	06:15 07:45-08:06/21 18:32	05:54 20:36	04:50 05:45-06:20/35 21:36	04:25 05:57-06:19/22 22:10
23	08:30 16:26	07:26 07:53-08:00/7 17:34 08:05-08:26/21	06:13 07:49-08:04/15 18:34	05:52 20:39	04:48 05:45-06:20/35 21:38	04:26 05:56-06:19/23 22:10
24	08:29 16:28	07:23 07:50-08:01/11 17:36 08:03-08:29/26	06:10 18:36	05:49 20:41	04:47 05:45-06:20/35 21:40	04:26 05:56-06:19/23 22:10
25	08:27 16:30	07:21 07:47-08:30/43 17:39	06:07 18:38	05:47 20:43	04:45 05:46-06:20/34 21:41	04:26 05:57-06:20/23 22:10
26	08:25 16:32	07:18 07:45-08:32/47 17:41	06:05 18:40	05:44 20:45	04:44 05:46-06:21/35 21:43	04:27 05:57-06:20/23 22:10
27	08:24 16:34	07:16 07:43-08:33/50 17:43	06:02 18:42	05:42 20:47	04:42 05:46-06:20/34 21:45	04:27 05:57-06:21/24 22:10
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31	08:16 16:43		06:51 19:51		04:37 05:47-06:20/33 21:51	
Potential sun hours	235	266	366	426	508	529
Sum of minutes with flicker	0	580	1041	189	831	763

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

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2	04:31 05:56-06:23/27 22:08	05:17 05:59-06:27/28 21:26	06:19 06:49-06:58/9 20:11	07:19 08:18-09:11/53 18:51	07:24 07:57-08:16/19 16:34	08:26 15:44
3	04:32 05:57-06:23/26 22:08	05:19 06:00-06:26/26 21:23	06:21 06:51-06:56/5 20:08	07:21 08:18-09:12/54 18:48	07:27 08:00-08:16/16 16:31	08:27 15:43
4	04:32 05:57-06:24/27 22:07	05:21 06:01-06:26/25 21:21	06:23 06:51-06:56/5 20:06	07:23 08:18-09:12/54 18:45	07:29 08:02-08:14/12 16:29	08:29 15:42
5	04:33 05:57-06:24/27 22:06	05:23 06:01-06:23/22 21:19	06:25 06:51-06:56/5 20:03	07:25 08:18-09:11/53 18:43	07:31 08:04-08:12/8 16:27	08:30 15:41
6	04:35 05:56-06:25/29 22:06	05:25 06:03-06:22/19 21:17	06:27 06:51-06:56/5 20:01	07:27 08:18-09:11/53 18:40	07:33 08:07-08:08/1 16:25	08:32 15:41
7	04:36 05:56-06:26/30 22:05	05:27 06:05-06:20/15 21:15	06:29 06:51-06:56/5 19:58	07:29 08:18-09:11/53 18:37	07:35 08:07-08:08/1 16:23	08:34 15:40
8	04:37 05:56-06:26/30 22:04	05:29 06:09-06:17/8 21:13	06:31 06:51-06:56/5 19:55	07:31 08:18-09:10/52 18:35	07:38 08:07-08:08/1 16:21	08:35 15:40
9	04:38 05:56-06:26/30 22:03	05:31 06:09-06:17/8 21:10	06:33 06:51-06:56/5 19:53	07:33 08:18-09:10/52 18:32	07:40 08:07-08:08/1 16:19	08:36 15:39
10	04:39 05:56-06:27/31 22:02	05:33 06:09-06:17/8 21:08	06:35 06:51-06:56/5 19:50	07:35 08:18-09:10/52 18:30	07:42 08:07-08:08/1 16:17	08:38 15:39
11	04:40 05:55-06:27/32 22:01	05:35 06:09-06:17/8 21:06	06:37 06:51-06:56/5 19:47	07:38 08:17-09:09/52 18:27	07:44 08:07-08:08/1 16:15	08:39 15:38
12	04:42 05:56-06:28/32 22:00	05:37 06:09-06:17/8 21:04	06:39 06:51-06:56/5 19:45	07:40 08:16-09:08/52 18:24	07:46 08:07-08:08/1 16:13	08:40 15:38
13	04:43 05:56-06:28/32 21:59	05:39 06:09-06:17/8 21:01	06:41 06:51-06:56/5 19:42	07:42 08:15-09:07/52 18:22	07:48 08:07-08:08/1 16:11	08:41 15:38
14	04:45 05:55-06:28/33 21:58	05:41 06:09-06:17/8 20:59	06:43 06:51-06:56/5 19:39	07:44 08:15-09:06/51 18:19	07:50 08:07-08:08/1 16:09	08:42 15:38
15	04:46 05:55-06:28/33 21:56	05:43 06:09-06:17/8 20:57	06:45 06:51-06:56/5 19:36	07:46 08:16-09:04/48 18:17	07:53 08:07-08:08/1 16:07	08:43 15:38
16	04:48 05:55-06:29/34 21:55	05:45 06:09-06:17/8 20:54	06:47 06:51-06:56/5 19:34	07:48 08:18-09:04/46 18:14	07:55 08:07-08:08/1 16:06	08:44 15:38
17	04:49 05:55-06:29/34 21:54	05:47 06:09-06:17/8 20:52	06:49 06:51-06:56/5 19:31	07:50 08:20-08:33/13 18:12	07:57 08:07-08:08/1 16:04	08:45 15:38
18	04:51 05:55-06:30/35 21:52	05:49 06:09-06:17/8 20:49	06:51 06:51-06:56/5 19:28	07:52 08:22-08:32/10 18:09	07:59 08:07-08:08/1 16:02	08:46 15:38
19	04:52 05:55-06:30/35 21:51	05:51 06:09-06:17/8 20:47	06:53 06:51-06:56/5 19:26	07:54 08:24-08:29/5 18:07	08:01 08:07-08:08/1 16:01	08:47 15:38
20	04:54 05:55-06:31/36 21:49	05:53 06:09-06:17/8 20:44	06:55 08:35-08:48/13 19:23	07:56 09:05-09:10/5 18:04	08:03 08:07-08:08/1 15:59	08:48 15:38
21	04:56 05:55-06:30/35 21:48	05:55 06:09-06:17/8 20:42	06:57 08:32-08:51/19 19:20	07:59 09:01-09:13/12 18:02	08:05 08:07-08:08/1 15:57	08:48 15:39
22	04:57 05:55-06:31/36 21:46	05:57 06:49-06:58/9 20:39	06:59 08:29-08:54/25 19:18	08:01 08:59-09:15/16 17:59	08:07 08:07-08:08/1 15:56	08:49 15:39
23	04:59 05:55-06:30/35 21:44	05:59 06:47-07:00/13 20:37	07:01 08:27-08:55/28 19:15	08:03 08:58-09:17/19 17:57	08:09 08:07-08:08/1 15:55	08:49 15:40
24	05:01 05:55-06:31/36 21:43	06:01 06:45-07:01/16 20:34	07:03 08:25-09:00/35 19:12	08:05 08:57-09:17/20 17:54	08:11 08:07-08:08/1 15:53	08:50 15:40
25	05:03 05:55-06:30/35 21:41	06:03 06:44-07:02/18 20:32	07:05 08:24-09:03/39 19:09	07:07 07:55-08:18/23 16:52	08:13 08:07-08:08/1 15:52	08:50 15:41
26	05:04 05:56-06:30/34 21:39	06:05 06:42-07:01/19 20:29	07:07 08:22-09:05/43 19:07	07:09 07:56-08:19/23 16:50	08:15 08:07-08:08/1 15:50	08:50 15:42
27	05:06 05:56-06:30/34 21:37	06:07 06:42-07:01/19 20:27	07:09 08:21-09:07/46 19:04	07:11 07:55-08:18/23 16:47	08:17 08:07-08:08/1 15:49	08:51 15:43
28	05:08 05:56-06:29/33 21:35	06:09 06:41-07:01/20 20:24	07:11 08:20-09:08/48 19:01	07:14 07:54-08:18/24 16:45	08:19 08:07-08:08/1 15:48	08:51 15:43
29	05:10 05:56-06:29/33 21:33	06:11 06:41-07:01/20 20:22	07:13 08:19-09:09/50 18:59	07:16 07:55-08:19/24 16:43	08:20 08:07-08:08/1 15:47	08:51 15:44
30	05:12 05:57-06:29/32 21:32	06:13 06:43-07:01/18 20:19	07:15 08:19-09:11/52 18:56	07:18 07:55-08:18/23 16:40	08:22 08:07-08:08/1 15:46	08:51 15:45
31	05:14 05:58-06:29/31 21:30	06:15 06:45-07:00/15 20:16		07:20 07:55-08:17/22 16:38		08:51 15:47
Potential sun hours		529	469	385	324	247
Sum of minutes with flicker		993	340	424	1174	77
						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:

25/06/2024 18:19/4.0.540

## SHADOW - Calendar per WTG

WTG: E11 - Siemens Gamesa SG 7.0-170 7000 170.0 !OI hub: 165.0 m (TOT: 250.0 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
434	458	529	455	479	767	770	921	1,193	1,059	818	546	8,428

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

	January	February	March	April	May	June
1	08:50 15:48	08:14 09:09-09:53/44 16:45	07:11 17:47	06:49 07:30-08:07/37 19:53	05:32 20:55	04:36 21:52
2	08:50 15:49	08:13 09:10-09:53/43 16:47	07:08 17:50	06:46 07:29-08:07/38 19:55	05:30 20:57	04:35 21:54
3	08:50 15:51	08:11 09:10-09:53/43 16:50	07:05 17:52	06:43 07:28-08:06/38 19:57	05:28 20:59	04:34 21:55
4	08:49 15:52	08:09 09:11-09:52/41 16:52	07:03 17:54	06:41 07:28-08:06/38 19:59	05:25 21:01	04:33 21:56
5	08:49 15:53	08:07 09:10-09:51/41 16:54	07:00 17:56	06:38 07:27-08:06/39 20:01	05:23 21:03	04:32 21:58
6	08:48 15:55	08:04 09:11-09:50/39 16:56	06:58 17:58	06:35 07:28-08:06/38 20:03	05:21 21:05	04:31 21:59
7	08:48 15:56	08:02 09:12-09:49/37 16:58	06:55 18:00	06:33 07:28-08:05/37 20:05	05:19 21:07	04:30 22:00
8	08:47 15:58	08:00 09:13-09:48/35 17:01	06:52 18:02	06:30 07:27-08:04/37 20:07	05:17 21:09	04:29 22:01
9	08:47 15:59	07:58 09:13-09:45/32 17:03	06:50 18:05	06:27 07:28-08:03/35 20:09	05:15 21:11	04:28 22:02
10	08:46 16:01	07:56 09:15-09:42/27 17:05	06:47 18:07	06:25 07:28-08:02/34 20:11	05:12 21:13	04:28 22:03
11	08:45 09:27-09:36/9 16:03	07:54 09:16-09:37/21 17:07	06:45 18:09	06:22 07:29-08:01/32 20:14	05:10 21:15	04:27 22:04
12	08:44 09:25-09:37/12 16:04	07:51 09:18-09:36/18 17:10	06:42 18:11	06:20 07:30-07:59/29 20:16	05:08 21:17	04:27 22:05
13	08:43 09:24-09:40/16 16:06	07:49 09:21-09:34/13 17:12	06:39 18:13	06:17 07:31-07:58/27 20:18	05:06 21:19	04:26 22:06
14	08:42 09:24-09:42/18 16:08	07:47 17:14	06:37 18:15	06:14 07:32-07:55/23 20:20	05:04 21:21	04:26 22:06
15	08:41 09:22-09:42/20 16:10	07:45 17:16	06:34 18:17	06:12 07:35-07:53/18 20:22	05:02 21:23	04:26 22:07
16	08:40 09:22-09:44/22 16:12	07:42 17:19	06:31 18:19	06:09 07:37-07:48/11 20:24	05:00 21:25	04:25 22:08
17	08:38 09:20-09:45/25 16:14	07:40 17:21	06:29 06:54-06:57/3 18:22	06:07 20:26	04:59 21:27	04:25 22:08
18	08:37 09:17-09:47/30 16:16	07:38 17:23	06:26 06:51-06:59/8 18:24	06:04 20:28	04:57 21:29	04:25 22:09
19	08:36 09:15-09:47/32 16:17	07:35 17:25	06:23 06:49-07:01/12 18:26	06:02 20:30	04:55 21:31	04:25 22:09
20	08:34 09:14-09:48/34 16:19	07:33 17:28	06:21 06:46-07:01/15 18:28	05:59 20:32	04:53 21:33	04:25 22:09
21	08:33 09:13-09:49/36 16:22	07:30 17:30	06:18 06:43-07:01/18 18:30	05:57 20:34	04:51 21:34	04:25 22:10
22	08:32 09:12-09:50/38 16:24	07:28 17:32	06:15 06:42-07:02/20 18:32	05:54 20:36	04:50 21:36	04:25 22:10
23	08:30 09:11-09:50/39 16:26	07:26 17:34	06:13 06:41-07:01/20 18:34	05:52 20:39	04:48 21:38	04:26 22:10
24	08:29 09:11-09:51/40 16:28	07:23 17:36	06:10 06:41-07:00/19 18:36	05:49 20:41	04:47 21:40	04:26 22:10
25	08:27 09:10-09:51/41 16:30	07:21 17:39	06:07 06:40-07:01/21 18:38	05:47 20:43	04:45 21:41	04:26 22:10
26	08:25 09:11-09:53/42 16:32	07:18 17:41	06:05 06:38-07:03/25 18:40	05:44 20:45	04:44 21:43	04:27 22:10
27	08:24 09:10-09:53/43 16:34	07:16 17:43	06:02 06:36-07:04/28 18:42	05:42 20:47	04:42 21:45	04:27 22:10
28	08:22 09:10-09:53/43 16:36	07:13 17:45	05:59 06:34-07:05/31 18:44	05:39 20:49	04:41 21:46	04:28 22:10
29	08:20 09:10-09:53/43 16:38		06:57 07:33-08:06/33 19:47	05:37 20:51	04:39 21:48	04:28 22:09
30	08:18 09:09-09:53/44 16:41		06:54 07:31-08:06/35 19:49	05:35 20:53	04:38 21:49	04:29 22:09
31	08:16 09:09-09:53/44 16:43		06:51 07:30-08:06/36 19:51		04:37 21:51	
Potential sun hours	235	266	366	426	508	528
Sum of minutes with flicker	671	434	324	511	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:

25/06/2024 18:19/4.0.540

## SHADOW - Calendar per WTG

WTG: E11 - Siemens Gamesa SG 7.0-170 7000 170.0 !OI hub: 165.0 m (TOT: 250.0 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
434	458	529	455	479	767	770	921	1,193	1,059	818	546	8,428

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 07:28-08:00/32 20:14	07:17 18:53	07:22 08:44-09:13/29 16:36	08:24 09:08-09:17/9 15:45
2	04:31 22:08	05:17 21:26	06:19 07:27-08:01/34 20:11	07:19 18:51	07:24 08:43-09:15/32 16:34	08:26 15:44
3	04:32 22:08	05:19 21:23	06:21 07:26-08:01/35 20:08	07:21 18:48	07:27 08:42-09:17/35 16:31	08:27 15:43
4	04:33 22:07	05:21 21:21	06:23 07:24-08:01/37 20:06	07:23 18:45	07:29 08:42-09:19/37 16:29	08:29 15:42
5	04:33 22:06	05:23 21:19	06:25 07:24-08:01/37 20:03	07:25 18:43	07:31 08:41-09:20/39 16:27	08:30 15:41
6	04:35 22:06	05:25 21:17	06:27 07:23-08:01/38 20:01	07:27 18:40	07:33 08:41-09:22/41 16:25	08:32 15:41
7	04:36 22:05	05:27 21:15	06:29 07:23-08:01/38 19:58	07:29 18:37	07:35 08:40-09:22/42 16:23	08:33 15:40
8	04:37 22:04	05:29 21:13	06:31 07:22-08:01/39 19:55	07:31 18:35	07:38 08:40-09:22/42 16:21	08:35 15:40
9	04:38 22:03	05:31 21:10	06:33 07:22-08:00/38 19:53	07:33 18:32	07:40 08:41-09:23/42 16:19	08:36 15:39
10	04:39 22:02	05:33 21:08	06:35 07:22-08:00/38 19:50	07:35 18:30	07:42 08:40-09:24/44 16:17	08:38 15:39
11	04:41 22:01	05:35 21:06	06:37 07:22-07:59/37 19:47	07:38 18:27	07:44 08:41-09:25/44 16:15	08:39 15:38
12	04:42 22:00	05:37 21:04	06:39 07:22-07:59/37 19:45	07:40 18:24	07:46 08:41-09:24/43 16:13	08:40 15:38
13	04:43 21:59	05:39 21:01	06:41 07:23-07:58/35 19:42	07:42 18:22	07:48 08:42-09:25/43 16:11	08:41 15:38
14	04:45 21:58	05:41 20:59	06:43 07:23-07:57/34 19:39	07:44 18:19	07:50 08:42-09:25/43 16:09	08:42 15:38
15	04:46 21:56	05:43 20:57	06:45 07:24-07:55/31 19:36	07:46 18:17	07:53 08:42-09:25/43 16:07	08:43 15:38
16	04:48 21:55	05:45 20:54	06:47 07:25-07:54/29 19:34	07:48 18:14	07:55 08:44-09:25/41 16:06	08:44 15:38
17	04:49 21:54	05:47 20:52	06:49 07:26-07:52/26 19:31	07:50 18:12	07:57 08:44-09:25/41 16:04	08:45 15:38
18	04:51 21:52	05:49 20:49	06:51 07:28-07:50/22 19:28	07:52 18:09	07:59 08:45-09:25/40 16:02	08:46 15:38
19	04:52 21:51	05:51 20:47	06:53 07:28-07:48/20 19:26	07:54 18:07	08:01 08:46-09:25/39 16:01	08:47 15:38
20	04:54 21:49	05:53 20:44	06:55 07:27-07:47/20 19:23	07:56 18:04	08:03 08:47-09:25/38 15:59	08:48 15:38
21	04:56 21:48	05:55 20:42	06:57 07:26-07:46/20 19:20	07:59 18:02	08:05 08:48-09:24/36 15:57	08:48 15:39
22	04:57 21:46	05:57 20:39	06:59 07:27-07:46/19 19:18	08:01 17:59	08:07 08:50-09:24/34 15:56	08:49 15:39
23	04:59 21:44	05:59 20:37	07:01 07:29-07:45/16 19:15	08:03 17:57	08:09 08:52-09:24/32 15:55	08:49 15:40
24	05:01 21:43	06:01 20:34	07:03 07:31-07:44/13 19:12	08:05 17:54	08:11 08:54-09:24/30 15:53	08:50 15:40
25	05:03 21:41	06:03 20:32	07:05 07:33-07:42/9 19:09	07:07 16:52	08:13 08:57-09:23/26 15:52	08:50 15:41
26	05:04 21:39	06:05 20:29	07:07 07:35-07:40/5 19:07	07:09 16:50	08:15 09:00-09:22/22 15:50	08:50 15:42
27	05:06 21:37	06:07 07:39-07:51/12 20:27	07:09 19:04	07:11 16:47	08:17 09:01-09:22/21 15:49	08:50 15:43
28	05:08 21:35	06:09 07:35-07:54/19 20:24	07:11 19:01	07:14 08:53-08:59/6 16:45	08:19 09:03-09:21/18 15:48	08:51 15:44
29	05:10 21:33	06:11 07:33-07:56/23 20:22	07:13 18:59	07:16 08:50-09:04/14 16:43	08:20 09:05-09:21/16 15:47	08:51 15:44
30	05:12 21:32	06:13 07:31-07:58/27 20:19	07:15 18:56	07:18 08:47-09:06/19 16:40	08:22 09:07-09:20/13 15:46	08:51 15:45
31	05:14 21:30	06:15 07:29-07:59/30 20:16		07:20 08:45-09:07/22 16:38		08:51 15:47
Potential sun hours		529	469	385	324	216
Sum of minutes with flicker		0	111	739	61	1046
						9

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:

25/06/2024 18:19/4.0.540

## SHADOW - Calendar per WTG

WTG: E12 - Siemens Gamesa SG 7.0-170 7000 170.0 !OI hub: 165.0 m (TOT: 250.0 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
434	458	529	455	479	767	770	921	1,193	1,059	818	546	8,428

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

	January	February	March	April	May	June
1	08:50 15:48	08:14 09:06-09:33/27 16:45	07:10 17:47	06:49 19:53	05:32 20:55	04:36 05:35-05:52/17 21:52
2	08:50 15:49	08:12 09:07-09:32/25 16:47	07:08 17:49	06:46 19:55	05:30 20:57	04:35 05:36-05:52/16 21:54
3	08:50 15:51	08:11 09:08-09:30/22 16:49	07:05 17:52	06:43 19:57	05:28 20:59	04:34 05:37-05:51/14 21:55
4	08:49 15:52	08:09 09:10-09:26/16 16:52	07:03 17:54	06:41 19:59	05:25 21:01	04:33 05:37-05:50/13 21:56
5	08:49 15:53	08:06 09:11-09:24/13 16:54	07:00 07:26-07:37/11 17:56	06:38 20:01	05:23 21:03	04:32 05:39-05:51/12 21:57
6	08:48 15:55	08:04 09:13-09:21/8 16:56	06:58 07:24-07:40/16 17:58	06:35 20:03	05:21 21:05	04:31 05:40-05:49/9 21:59
7	08:48 15:56	08:02 16:58	06:55 07:21-07:41/20 18:00	06:33 20:05	05:19 21:07	04:30 05:41-05:48/7 22:00
8	08:47 15:58	08:00 17:01	06:52 07:19-07:42/23 18:02	06:30 20:07	05:17 21:09	04:29 05:43-05:47/4 22:01
9	08:46 15:59	07:58 17:03	06:50 07:19-07:43/24 18:05	06:27 20:09	05:15 05:44-05:45/1 21:11	04:28 22:02
10	08:46 16:01	07:56 17:05	06:47 07:17-07:43/26 18:07	06:25 20:11	05:12 05:42-05:48/6 21:13	04:28 22:03
11	08:45 16:03	07:54 17:07	06:45 07:16-07:43/27 18:09	06:22 20:14	05:10 05:40-05:50/10 21:15	04:27 22:04
12	08:44 09:20-09:24/4 16:04	07:51 17:10	06:42 07:15-07:43/28 18:11	06:19 20:16	05:08 05:38-05:51/13 21:17	04:27 22:05
13	08:43 09:19-09:26/7 16:06	07:49 17:12	06:39 07:16-07:43/27 18:13	06:17 20:18	05:06 05:36-05:52/16 21:19	04:26 22:06
14	08:42 09:18-09:28/10 16:08	07:47 17:14	06:37 07:15-07:43/28 18:15	06:14 20:20	05:04 05:35-05:53/18 21:21	04:26 22:06
15	08:41 09:16-09:28/12 16:10	07:45 17:16	06:34 07:15-07:42/27 18:17	06:12 20:22	05:02 05:33-05:53/20 21:23	04:26 22:07
16	08:40 09:15-09:30/15 16:12	07:42 17:19	06:31 07:16-07:41/25 18:19	06:09 20:24	05:00 05:31-05:54/23 21:25	04:25 22:08
17	08:38 09:13-09:30/17 16:14	07:40 17:21	06:29 07:16-07:40/24 18:21	06:07 20:26	05:32-05:55/23 21:27	04:25 22:08
18	08:37 09:12-09:32/20 16:16	07:38 17:23	06:26 07:16-07:38/22 18:24	06:04 20:28	05:31-05:55/24 21:29	04:25 22:09
19	08:36 09:10-09:32/22 16:17	07:35 17:25	06:23 07:18-07:37/19 18:26	06:02 20:30	05:31-05:54/23 21:31	04:25 22:09
20	08:34 09:08-09:33/25 16:19	07:33 17:28	06:21 07:19-07:34/15 18:28	05:59 20:32	05:31-05:55/24 21:33	04:25 22:09
21	08:33 09:07-09:34/27 16:22	07:30 17:30	06:18 07:22-07:29/7 18:30	05:56 20:34	05:31-05:54/23 21:34	04:25 22:10
22	08:32 09:05-09:34/29 16:24	07:28 17:32	06:15 18:32	05:54 20:36	05:31-05:55/24 21:36	04:25 22:10
23	08:30 09:04-09:35/31 16:26	07:26 17:34	06:13 18:34	05:52 20:39	05:32-05:55/23 21:38	04:26 22:10
24	08:28 09:04-09:35/31 16:28	07:23 17:36	06:10 18:36	05:49 20:41	05:31-05:55/24 21:40	04:26 22:10
25	08:27 09:04-09:35/31 16:30	07:21 17:39	06:07 18:38	05:47 20:43	05:32-05:55/23 21:41	04:26 22:10
26	08:25 09:05-09:36/31 16:32	07:18 17:41	06:05 18:40	05:44 20:45	05:33-05:55/22 21:43	04:27 22:10
27	08:24 09:05-09:36/31 16:34	07:16 17:43	06:02 18:42	05:42 20:47	05:32-05:54/22 21:45	04:27 22:10
28	08:22 09:05-09:36/31 16:36	07:13 17:45	05:59 18:44	05:39 20:49	05:33-05:54/21 21:46	04:28 22:10
29	08:20 09:05-09:36/31 16:38		06:57 19:47	05:37 20:51	05:34-05:54/20 21:48	04:28 22:09
30	08:18 09:05-09:34/29 16:41		06:54 19:49	05:35 20:53	05:34-05:53/19 21:49	04:29 22:09
31	08:16 09:05-09:34/29 16:43		06:51 19:51		05:35-05:53/18 21:51	
Potential sun hours	235	266	366	426	508	528
Sum of minutes with flicker	463	111	369	0	440	92

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:

25/06/2024 18:19/4.0.540

## SHADOW - Calendar per WTG

WTG: E12 - Siemens Gamesa SG 7.0-170 7000 170.0 IO! hub: 165.0 m (TOT: 250.0 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
434	458	529	455	479	767	770	921	1,193	1,059	818	546	8,428

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

	July	August	September	October	November	December
1	04:30 22:09	05:15 05:49-06:01/12 21:28	06:17 20:14	07:17 07:55-08:23/28 18:53	07:22 16:36	08:24 09:03-09:04/1 15:45
2	04:31 22:08	05:17 05:51-06:00/9 21:25	06:19 20:11	07:19 07:55-08:22/27 18:51	07:24 16:34	08:26 15:44
3	04:32 22:08	05:19 05:53-05:58/5 21:23	06:21 20:08	07:21 07:55-08:22/27 18:48	07:27 16:31	08:27 15:43
4	04:33 22:07	05:21 21:21	06:23 20:06	07:23 07:55-08:21/26 18:45	07:29 16:29	08:29 15:42
5	04:33 05:48-05:54/6 22:06	05:23 21:19	06:25 20:03	07:25 07:56-08:20/24 18:43	07:31 08:43-08:52/9 16:27	08:30 15:41
6	04:35 05:47-05:55/8 22:06	05:25 21:17	06:27 20:01	07:27 07:57-08:18/21 18:40	07:33 08:41-08:55/14 16:25	08:32 15:41
7	04:36 05:46-05:57/11 22:05	05:27 21:15	06:29 19:58	07:29 07:58-08:16/18 18:37	07:35 08:39-08:56/17 16:23	08:33 15:40
8	04:37 05:45-05:58/13 22:04	05:29 21:13	06:31 19:55	07:31 08:00-08:14/14 18:35	07:37 08:38-09:00/22 16:21	08:35 15:40
9	04:38 05:45-05:58/13 22:03	05:31 21:10	06:33 19:53	07:33 08:03-08:10/7 18:32	07:40 08:38-09:03/25 16:19	08:36 15:39
10	04:39 05:44-05:59/15 22:02	05:33 21:08	06:35 19:50	07:35 18:30	07:42 08:37-09:04/27 16:17	08:38 15:39
11	04:41 05:43-06:00/17 22:01	05:35 21:06	06:37 19:47	07:38 18:27	07:44 08:37-09:06/29 16:15	08:39 15:38
12	04:42 05:44-06:01/17 22:00	05:37 21:04	06:39 19:44	07:40 18:24	07:46 08:37-09:06/29 16:13	08:40 15:38
13	04:43 05:43-06:02/19 21:59	05:39 21:01	06:41 19:42	07:42 18:22	07:48 08:37-09:08/31 16:11	08:41 15:38
14	04:45 05:42-06:02/20 21:57	05:41 20:59	06:43 19:39	07:44 18:19	07:50 08:37-09:08/31 16:09	08:42 15:38
15	04:46 05:42-06:02/20 21:56	05:43 20:56	06:45 19:36	07:46 18:17	07:52 08:37-09:08/31 16:07	08:43 15:38
16	04:48 05:42-06:03/21 21:55	05:45 20:54	06:47 19:34	07:48 18:14	07:55 08:38-09:09/31 16:06	08:44 15:38
17	04:49 05:41-06:03/22 21:54	05:47 20:52	06:49 19:31	07:50 18:12	07:57 08:38-09:09/31 16:04	08:45 15:38
18	04:51 05:42-06:04/22 21:52	05:49 20:49	06:51 19:28	07:52 18:09	07:59 08:38-09:09/31 16:02	08:46 15:38
19	04:52 05:41-06:04/23 21:51	05:51 20:47	06:53 19:26	07:54 18:07	08:01 08:39-09:10/31 16:01	08:47 15:38
20	04:54 05:42-06:05/23 21:49	05:53 20:44	06:55 19:23	07:56 18:04	08:03 08:40-09:09/29 15:59	08:47 15:38
21	04:56 05:41-06:05/24 21:48	05:55 20:42	06:57 19:20	07:59 18:02	08:05 08:42-09:09/27 15:57	08:48 15:39
22	04:57 05:41-06:05/24 21:46	05:57 20:39	06:59 08:09-08:12/3 19:18	08:01 17:59	08:07 08:44-09:09/25 15:56	08:49 15:39
23	04:59 05:41-06:05/24 21:44	05:59 20:37	07:01 08:04-08:17/13 19:15	08:03 17:57	08:09 08:47-09:09/22 15:55	08:49 15:40
24	05:01 05:41-06:05/24 21:43	06:01 20:34	07:03 08:01-08:19/18 19:12	08:05 17:54	08:11 08:49-09:09/20 15:53	08:50 15:40
25	05:03 05:41-06:05/24 21:41	06:03 20:32	07:05 07:59-08:21/22 19:09	07:07 16:52	08:13 08:51-09:09/18 15:52	08:50 15:41
26	05:04 05:42-06:05/23 21:39	06:05 20:29	07:07 07:58-08:22/24 19:07	07:09 16:50	08:15 08:53-09:08/15 15:50	08:50 15:42
27	05:06 05:42-06:05/23 21:37	06:07 20:27	07:09 07:57-08:22/25 19:04	07:11 16:47	08:17 08:55-09:08/13 15:49	08:50 15:43
28	05:08 05:42-06:04/22 21:35	06:09 20:24	07:11 07:56-08:22/26 19:01	07:14 16:45	08:18 08:57-09:07/10 15:48	08:51 15:44
29	05:10 05:44-06:04/20 21:33	06:11 20:22	07:13 07:55-08:22/27 18:59	07:16 16:43	08:20 09:00-09:07/7 15:47	08:51 15:44
30	05:12 05:46-06:03/17 21:31	06:13 20:19	07:15 07:56-08:23/27 18:56	07:18 16:40	08:22 09:02-09:06/4 15:46	08:51 15:45
31	05:14 05:48-06:03/15 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	510	26	185	192	579	1

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:  
25/06/2024 18:19/4.0.540

## SHADOW - Calendar per WTG

WTG: E13 - Siemens Gamesa SG 7.0-170 7000 170.0 IO! hub: 165.0 m (TOT: 250.0 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
434	458	529	455	479	767	770	921	1,193	1,059	818	546	8,428

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

	January	February	March	April	May	June
1	08:51 09:39:11:21/102 15:48 13:44:14:43/59	08:15 10:03:11:01/58 09:00:09:50/50 16:45 13:59:14:59/60	07:11 16:02:16:52/50 17:48	06:49 07:17:07:41/24 19:53	05:33 06:01:06:33/32 20:55 20:02:20:23/21	04:36 05:10:05:35/25 21:52 20:27:21:01/34
2	08:50 09:40:11:22/102 15:49 13:45:14:45/60	08:13 14:01:14:58/57 08:59:09:51/52 16:47 10:04:10:50/46	07:08 16:02:16:51/49 17:50	06:46 07:15:07:42/27 19:55 07:11:07:13/2	05:30 06:01:06:25/24 06:27:06:29/2 20:57 20:02:20:24/22	04:35 05:09:05:35/26 21:54 20:27:21:01/34
3	08:50 09:40:11:22/102 15:51 13:45:14:45/60	08:11 14:04:14:58/54 08:58:09:51/53 16:50 10:05:10:49/44	07:07 16:04:16:51/47 17:52	06:43 07:09:07:44/35 19:57	05:28 06:01:06:24/23 20:59 20:02:20:24/22	04:34 05:08:05:35/27 21:55 20:26:21:01/35
4	08:50 09:40:11:22/102 15:52 13:44:14:46/62	08:09 14:07:14:57/50 08:58:09:52/54 16:52 10:06:10:48/42 08:39:08:44/5	07:03 16:04:16:50/46 17:54	06:41 07:06:07:44/38 19:59	05:26 06:01:06:23/22 21:02 20:02:20:24/22	04:33 05:08:05:36/28 21:57 20:26:21:02/36
5	08:49 09:41:11:22/101 15:53 13:45:14:47/62	08:07 10:08:10:47/39 08:37:08:46/9 16:54 14:12:14:57/45 08:58:09:53/55	07:00 16:05:16:49/44 17:56	06:38 07:03:07:44/41 20:01	05:23 06:01:06:22/21 21:04 20:03:20:24/21	04:32 05:07:05:36/29 21:58 20:27:21:03/36
6	08:49 09:41:11:22/101 15:55 13:46:14:48/62	08:05 10:09:10:45/36 08:34:08:47/13 16:56 14:19:14:55/36 08:57:09:52/55	06:58 07:24:07:26/2 17:58 16:06:16:49/43	06:35 07:01:07:45/44 20:03	05:21 06:02:06:22/20 21:06 20:03:20:24/21	04:31 05:06:05:36/30 21:59 20:26:21:03/37
7	08:48 09:41:11:22/101 15:56 13:46:14:49/63	08:03 10:11:10:43/32 08:32:08:48/16 16:59 14:21:14:53/32 08:56:09:53/57	06:57 07:21:07:32/11 18:00 16:08:16:47/39	06:33 06:58:07:45/47 20:05	05:19 20:04:20:23/19 21:08 06:03:06:21/18	04:30 05:06:05:36/30 22:00 20:26:21:03/37
8	08:47 09:41:11:22/101 15:58 13:46:14:50/64	08:00 10:13:10:39/26 08:30:08:49/19 17:01 14:23:14:51/28 08:57:09:53/56	06:53 07:18:07:35/17 18:03 16:09:16:45/36	06:30 06:56:07:46/50 20:08	05:17 20:04:20:23/19 21:10 06:03:06:20/17	04:29 05:05:05:36/31 22:01 20:27:21:04/37
9	08:47 09:41:11:22/101 15:59 13:46:14:51/65	07:58 10:17:10:35/18 08:28:08:49/21 17:03 14:26:14:47/21 08:56:09:52/56	06:50 07:16:07:38/22 18:05 16:13:16:43/30	06:28 06:53:07:46/53 20:10	05:15 20:05:20:22/17 21:12 06:04:06:18/14	04:29 05:04:05:36/32 22:02 20:26:21:04/38
10	08:46 09:41:11:22/101 16:01 13:46:14:51/65	07:56 10:22:10:31/9 08:27:08:50/23 17:05 14:32:14:36/4 08:56:09:52/56	06:47 07:13:07:39/26 18:07 16:29:16:39/10	06:25 06:50:07:45/55 20:12	05:13 20:06:20:20/14 21:14 06:06:06:17/11	04:28 05:04:05:36/32 22:03 20:27:21:04/37
11	08:45 09:42:11:22/100 09:22:09:24/2 16:03 13:47:14:52/65	07:54 08:27:08:51/24 17:08 08:56:09:53/57	06:45 07:10:07:39/29 18:09	06:22 06:48:07:45/57 20:14	05:11 20:07:20:19/12 21:16 06:09:06:13/4	04:27 05:04:05:37/33 22:04 20:26:21:04/38
12	08:44 09:42:11:21/99 09:21:09:27/6 16:05 13:46:14:52/66	07:52 08:26:08:50/24 17:10 08:56:09:52/56	06:42 07:10:07:40/30 18:11	06:20 06:45:07:44/59 20:16	05:08 20:09:20:17/8 21:18	04:27 05:03:05:36/33 22:05 20:27:21:05/38
13	08:43 09:42:11:20/98 09:19:09:28/9 16:06 13:47:14:54/67	07:49 16:17:16:28/11 08:56:09:51/55 17:12 08:27:08:51/24	06:39 07:05:07:41/36 18:13	06:17 06:43:07:44/61 20:18	05:06 21:20	04:26 05:03:05:37/34 22:06 20:27:21:05/38
14	08:42 09:42:11:19/97 09:18:09:30/12 16:08 13:48:14:55/67	07:47 16:13:16:31/18 08:56:09:50/54 17:14 08:26:08:50/24	06:37 07:02:07:40/38 18:15	06:14 06:40:07:43/63 20:20	05:04 21:22	04:25 05:03:05:37/34 22:07 20:27:21:06/39
15	08:41 09:43:11:18/95 09:17:09:31/14 16:10 13:47:14:55/68	07:45 16:11:16:33/22 16:40:16:45/5 17:17 08:27:08:51/24 08:57:09:50/53	06:34 07:00:07:41/41 18:17	06:12 06:38:07:43/65 20:22	05:03 21:23	04:26 05:03:05:37/34 22:07 20:27:21:05/38
16	08:40 09:43:11:15/92 09:15:09:32/17 16:12 13:48:14:56/68	07:43 16:09:16:35/26 16:36:16:47/11 17:19 08:27:08:50/23 08:57:09:48/51	06:32 06:57:07:41/44 18:20	06:09 06:35:07:42/67 20:24	05:01 21:25	04:25 05:02:05:36/34 22:08 20:27:21:06/39
17	08:39 09:44:11:12/88 09:14:09:33/19 16:14 13:48:14:56/68	07:40 16:08:16:50/42 08:58:09:48/50 17:21 08:28:08:50/22	06:29 06:55:07:40/45 18:22	06:07 06:33:07:41/68 20:26	04:59 21:27	04:25 05:02:05:37/35 22:08 20:27:21:06/39
18	08:37 09:44:11:12/88 09:12:09:34/22 16:16 13:49:14:57/68	07:38 16:06:16:52/46 08:58:09:46/48 17:23 08:28:08:48/20	06:26 06:54:07:39/45 18:24	06:04 06:30:07:39/69 20:28	04:57 21:29	04:25 05:02:05:37/35 22:09 20:27:21:06/39
19	08:36 09:44:11:12/88 09:10:09:34/24 16:18 13:49:14:57/68	07:35 16:06:16:55/49 08:59:09:44/45 17:25 08:30:08:47/17	06:24 06:54:07:39/45 18:26 17:54:17:58/4	06:02 06:28:07:38/70 20:30	04:55 21:31	04:25 05:02:05:37/35 22:09 20:28:21:06/38
20	08:35 09:45:11:12/87 09:09:09:36/27 16:20 13:50:14:58/68	07:33 16:04:16:55/51 08:59:09:41/42 17:28 08:31:08:45/14	06:21 06:53:07:38/45 18:28 17:51:18:00/9	05:59 06:26:07:36/70 20:32	04:53 20:40:20:46/6 21:33 05:25:05:29/4	04:25 05:03:05:38/35 22:10 20:28:21:06/38
21	08:33 09:46:11:12/86 09:07:09:36/29 16:22 13:50:14:59/69	07:31 16:04:16:56/52 09:01:09:39/38 17:30 08:33:08:43/10	06:18 06:52:07:37/45 18:30 17:49:18:02/13	05:57 06:53:07:35/42 20:35 06:23:06:51/28	04:52 20:36:20:49/13 21:35 05:24:05:30/6	04:25 05:03:05:38/35 22:10 20:29:21:08/39
22	08:32 09:46:11:12/86 09:05:09:37/32 16:24 13:50:14:59/69	07:28 16:03:16:56/53 17:32 09:02:09:27/25	06:15 06:53:07:37/44 18:32 17:48:18:03/15	05:54 06:54:07:33/39 20:37 06:21:06:49/28	04:50 20:34:20:51/17 21:36 05:22:05:31/9	04:25 05:03:05:38/35 22:10 20:29:21:08/39
23	08:30 09:47:11:11/84 09:03:09:39/36 16:26 13:51:14:59/68	07:26 16:03:16:57/54 17:34 09:05:09:25/20	06:13 06:52:07:36/44 18:34 17:48:18:06/18	05:52 06:18:06:46/28 20:39 06:54:07:28/34	04:48 20:33:20:53/20 21:38 05:21:05:32/11	04:26 05:03:05:38/35 22:10 20:29:21:07/38
24	08:29 09:49:11:12/83 09:03:09:42/39 16:28 13:51:14:59/68	07:23 16:02:16:56/54 17:37 09:07:09:21/14	06:10 06:52:07:35/43 18:36 17:47:18:07/20	05:49 06:16:06:45/29 20:41 06:55:07:20/25	04:47 20:31:20:54/23 21:40 05:19:05:32/13	04:26 05:04:05:39/35 22:10 20:28:21:07/39
25	08:27 09:50:11:11/81 09:03:09:43/40 16:30 13:53:15:00/67	07:21 16:02:16:55/53 17:39	06:07 06:53:07:34/41 18:38 17:47:18:06/19	05:47 06:14:06:44/30 20:11:20:12/1 20:43 06:56:07:18/22	04:45 20:31:20:55/24 21:42 05:18:05:33/17	04:26 05:04:05:39/35 22:10 20:29:21:08/39
26	08:25 09:51:11:11/80 09:03:09:45/42 16:32 13:53:15:00/67	07:18 16:02:16:56/54 17:41	06:05 06:53:07:32/39 18:40 17:47:18:06/19	05:44 06:11:06:42/31 20:07:20:13/6 20:45 06:57:07:15/18	04:44 05:17:05:34/17 21:43 20:30:20:57/27	04:27 05:05:05:39/34 22:10 20:29:21:08/39
27	08:24 09:52:11:10/78 09:03:09:46/43 16:34 13:54:15:00/66	07:16 16:02:16:54/52 17:43	06:02 06:54:07:30/36 18:43 17:47:18:05/18	05:42 06:09:06:40/31 20:06:20:16/10 20:47 07:00:07:13/13	04:42 05:16:05:34/18 21:45 20:29:20:57/28	04:27 05:05:05:39/34 22:10 20:30:21:08/38
28	08:22 09:54:11:09/75 09:03:09:47/44 16:36 13:55:15:00/65	07:13 16:03:16:54/51 17:45	05:59 06:55:07:29/34 18:45 17:48:18:03/15	05:40 06:07:06:38/31 20:49 20:05:20:18/13	04:41 05:14:05:34/20 21:46 20:28:20:58/30	04:28 05:06:05:40/34 22:10 20:30:21:08/38
29	08:20 09:57:11:08/71 09:03:09:48/45 16:39 13:56:15:00/64		06:57 07:57:08:25/28 19:47 18:50:19:02/12	05:37 06:05:06:38/33 20:51 20:04:20:20/16	04:40 05:13:05:34/21 21:48 20:28:20:59/31	04:29 05:06:05:40/34 22:10 20:30:21:09/39
30	08:18 10:02:11:07/65 09:03:09:49/46 16:41 13:57:15:00/63		06:54 07:59:08:08/9 18:52:18:59/7 19:49 07:27:07:33/6	05:35 06:03:06:36/33 20:53 20:03:20:21/18	04:38 05:12:05:35/23 21:50 20:28:20:59/31	04:29 05:07:05:40/33 22:09 20:31:21:09/38
31	08:17 10:03:11:05/62 09:02:09:50/48 16:43 13:58:14:59/61		06:51 07:21:07:39/18 19:51		04:37 05:11:05:35/24 21:51 20:27:21:00/33	
Potential sun hours	235	266	366	426	508	529
Sum of minutes with flicker	5415	2925	1426	1624	890	2108

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:  
25/06/2024 18:19/4.0.540

## SHADOW - Calendar per WTG

WTG: E13 - Siemens Gamesa SG 7.0-170 7000 170.0 IO! hub: 165.0 m (TOT: 250.0 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
434	458	529	455	479	767	770	921	1,193	1,059	818	546	8,428

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

	July	August	September	October	November	December
1	04:30 05:08-05:41/33 22:09 20:30-21:08/38	05:16 20:19-20:28/9 21:28	06:17 06:47-07:44/57 20:14	07:17 07:46-08:20/34 18:54	07:23 09:50-10:02/12 07:57-08:19/22 16:36 14:00-14:07/7 08:25-09:22/57	08:24 09:24-11:04/10 09:04-09:06/2 15:45 13:29-14:35/66
2	04:31 05:08-05:40/32 22:08 20:31-21:09/38	05:18 20:17-20:30/13 21:26 06:18-06:25/7	06:19 06:49-07:44/55 20:11	07:19 07:49-08:19/30 18:51	07:25 09:45-10:05/20 07:57-08:18/21 16:34 13:55-14:18/23 08:25-09:22/57	08:26 09:24-11:05/101 15:44 13:30-14:35/65
3	04:32 05:09-05:41/32 22:08 20:31-21:09/38	05:19 20:16-20:31/15 21:24 06:16-06:28/12	06:21 06:51-07:44/53 20:09	07:27 09:43-10:10/27 08:00-08:18/18 18:48 17:10-17:13/3	07:27 09:43-10:12/29 08:26-09:23/57 16:32 13:52-14:21/29 08:26-09:23/57	08:27 09:25-11:05/100 15:43 13:29-14:34/65
4	04:33 05:10-05:41/31 22:07 20:32-21:09/37	05:21 20:15-20:32/17 21:22 06:14-06:29/15	06:23 06:53-07:43/50 20:06	07:23 07:52-08:15/23 16:52-17:02/10 18:46 17:04-17:19/15	07:29 09:40-10:13/33 08:02-08:17/15 16:29 13:50-14:23/33 08:26-09:22/56	08:29 09:25-11:06/101 15:42 13:30-14:34/64
5	04:34 05:11-05:42/31 22:07 20:32-21:09/37	05:23 20:13-20:32/19 21:19 06:13-06:31/18	06:25 06:55-07:42/47 20:03	07:25 07:54-08:13/19 18:43 16:48-17:21/33	07:31 09:38-10:15/37 08:05-08:17/12 16:27 13:48-14:24/36 08:26-09:22/56	08:31 09:26-11:07/101 15:42 13:31-14:34/63
6	04:35 05:12-05:42/30 22:06 20:33-21:09/36	05:25 20:13-20:33/20 21:17 06:12-06:31/19	06:27 06:57-07:41/44 20:01	07:27 07:56-08:10/14 18:40 16:45-17:22/37	07:33 09:37-10:17/40 08:07-08:16/9 16:25 13:41-14:26/45 08:27-09:22/55	08:32 09:27-11:08/101 15:41 13:32-14:34/62
7	04:36 05:13-05:42/29 22:05 20:33-21:09/36	05:27 06:11-06:31/20 21:15 20:12-20:33/21	06:29 06:58-07:40/42 19:58	07:29 07:58-08:03/5 18:38 16:42-17:23/41	07:36 13:36-14:27/51 08:28-09:22/54 16:23 09:36-10:18/42 08:09-08:14/5	08:34 09:27-11:09/102 15:40 13:32-14:34/62
8	04:37 05:14-05:42/28 22:04 20:33-21:09/36	05:29 06:11-06:32/21 21:13 20:12-20:34/22	06:31 07:00-07:38/38 19:55	07:32 16:40-17:24/44 18:35	07:38 13:34-14:29/55 08:29-09:22/53 16:21 09:35-10:20/45	08:35 09:28-11:10/102 15:40 13:33-14:34/61
9	04:38 05:15-05:43/28 22:03 20:34-21:09/35	05:31 06:10-06:32/22 21:11 20:12-20:34/22	06:33 07:02-07:37/35 19:53	07:34 16:39-17:24/45 18:32	07:40 10:25-10:26/1 09:34-10:21/47 16:19 13:32-14:29/57 08:30-09:21/51	08:37 09:29-11:10/101 15:39 13:33-14:33/60
10	04:39 05:16-05:43/27 22:02 20:34-21:09/35	05:33 06:10-06:33/23 21:08 20:11-20:33/22	06:35 07:08-07:35/27 19:50 07:04-07:06/2	07:36 16:38-17:25/47 18:30	07:42 09:34-10:33/59 08:32-09:22/50 16:17 13:30-14:30/60	08:38 09:29-11:11/102 15:39 13:34-14:34/60
11	04:41 05:18-05:44/26 22:01 20:34-21:08/34	05:35 06:10-06:41/31 21:06 20:11-20:33/22	06:37 07:09-07:33/24 19:47	07:38 16:37-17:26/49 18:27	07:44 09:34-10:36/62 08:32-09:21/49 16:15 13:30-14:31/61	08:39 09:29-11:11/102 15:38 13:34-14:34/60
12	04:42 05:19-05:43/24 22:00 20:36-21:09/33	05:37 06:09-06:42/33 21:04 20:11-20:31/20	06:39 07:12-07:30/18 19:45	07:40 16:36-17:25/49 18:25	07:46 09:33-10:38/65 08:34-09:20/46 16:13 13:28-14:31/63	08:40 09:31-11:13/102 13:07-13:13/6 15:38 13:35-14:34/59
13	04:43 05:20-05:43/23 21:59 20:36-21:08/32	05:39 06:11-06:44/33 21:01 20:11-20:29/18	06:41 07:17-07:26/9 18:44-18:49/5 19:42 07:52-07:59/7	07:42 16:35-17:26/51 18:22	07:49 09:29-10:40/71 08:35-09:20/45 16:11 13:28-14:32/64	08:41 09:31-11:13/102 13:06-13:14/8 15:38 13:36-14:34/58
14	04:45 05:21-05:43/22 21:58 20:36-21:08/32	05:41 06:13-06:45/32 20:59 20:12-20:27/15	06:43 08:03-08:15/12 18:40-18:52/12 19:39 07:48-08:02/14	07:44 16:34-17:26/52 18:19	07:51 09:26-10:41/75 08:35-09:19/44 16:09 13:27-14:32/65	08:43 09:32-11:13/101 13:05-13:15/10 15:38 13:36-14:34/58
15	04:46 05:23-05:44/21 21:57 20:37-21:07/30	05:43 06:15-06:46/31 20:13-20:25/12 20:57 07:11-07:17/6	06:45 07:45-08:18/33 19:37 07:43-08:19/36	07:46 16:35-17:27/52 18:17	07:53 09:25-10:42/77 08:36-09:18/42 16:08 13:26-14:32/66	08:44 09:32-11:14/101 13:05-13:16/11 15:38 13:37-14:34/57
16	04:48 05:24-05:43/19 21:55 20:38-21:07/29	05:45 06:17-06:48/31 20:14-20:23/9 20:54 07:07-07:21/14	06:47 07:43-08:19/36 19:34 18:37-18:54/17	07:48 16:34-17:28/54 18:14	07:55 09:24-10:44/80 08:36-09:18/42 16:06 13:26-14:33/67	08:45 09:33-11:14/101 13:05-13:17/12 15:38 13:37-14:34/57
17	04:49 05:25-05:43/18 21:54 20:38-21:06/28	05:47 06:19-06:50/31 20:14-20:19/5 20:52 07:05-07:23/18	06:49 07:42-08:21/39 19:31 18:36-18:54/18	07:50 16:34-17:28/54 18:12 09:43-09:49/6	07:57 09:23-10:44/81 08:36-09:16/40 16:04 13:26-14:33/67	08:46 09:34-11:16/102 13:05-13:19/14 15:38 13:39-14:35/56
18	04:51 20:40-21:06/26 21:52 05:27-05:43/16	05:49 06:21-06:51/30 20:49 07:02-07:24/22	06:51 07:41-08:22/41 19:29 18:34-18:54/20	07:52 16:34-17:27/53 18:09 09:37-09:54/17	07:59 09:23-10:46/83 08:37-09:16/39 16:02 13:25-14:33/68	08:47 09:35-11:17/102 13:05-13:19/14 15:38 13:38-14:34/56
19	04:52 20:40-21:04/24 21:51 05:28-05:42/14	05:51 06:22-06:51/29 20:47 07:00-07:25/25	06:53 07:40-08:22/42 19:26 18:34-18:53/19	07:55 16:33-17:27/54 18:07 09:35-09:57/22	08:01 09:22-10:46/84 08:38-09:14/36 16:01 13:26-14:34/68	08:47 09:35-11:17/102 13:05-13:19/14 15:38 13:38-14:34/56
20	04:54 20:42-21:04/22 21:49 05:30-05:42/12	05:53 06:24-06:51/27 20:45 06:59-07:35/36	06:55 07:39-08:23/44 19:23 18:34-18:52/18	07:57 16:34-17:27/53 09:33-10:05/32 18:04 09:08-09:10/2	08:03 09:21-10:47/86 08:40-09:12/32 15:59 13:25-14:34/69	08:48 09:35-11:16/101 13:06-13:21/15 15:39 13:39-14:35/56
21	04:56 20:43-21:02/19 21:48 05:31-05:41/10	05:55 06:58-07:38/40 20:42 06:26-06:54/28	06:57 07:38-08:23/45 19:20 18:34-18:50/16	07:59 16:35-17:26/51 09:31-10:10/39 18:02 09:03-09:14/11	08:05 09:21-10:47/86 08:43-09:12/29 15:58 13:25-14:34/69	08:48 09:36-11:17/101 13:06-13:22/16 15:39 13:40-14:36/56
22	04:57 20:45-21:01/16 21:46 05:33-05:41/8	05:57 06:57-07:40/43 20:40 06:28-06:56/28	06:59 07:38-08:23/45 19:18 18:34-18:47/13	08:01 16:35-17:26/50 09:29-10:12/43 17:59 09:00-09:16/16	08:07 09:21-10:48/87 08:45-09:12/27 15:56 13:26-14:34/68	08:49 09:36-11:17/101 13:06-13:22/16 15:39 13:40-14:36/56
23	04:59 20:47-20:58/11 21:45 05:34-05:39/5	05:59 06:30-07:41/71 20:37 06:32-07:42/70	07:01 07:38-08:23/45 19:15 18:34-18:44/10	08:03 16:36-17:25/49 09:29-10:15/46 17:57 08:59-09:18/19	08:09 09:21-10:49/88 08:47-09:12/25 15:55 13:26-14:34/68	08:49 09:37-11:18/101 13:07-13:23/16 15:40 13:41-14:37/56
24	05:01 05:36-05:38/2 21:43	06:01 06:32-07:42/70 20:35	07:03 07:38-08:23/45 19:12 18:36-18:42/6	08:05 16:37-17:22/45 09:28-10:16/48 17:55 08:58-09:19/21	08:11 09:21-10:49/88 08:49-09:11/22 15:53 13:26-14:34/68	08:50 09:37-11:18/101 13:08-13:23/15 15:41 13:41-14:37/56
25	05:03 21:41	06:03 06:34-07:43/69 20:32	07:05 07:38-08:23/45 19:10 18:38-18:39/1	07:07 05:38-16:19/41 08:27-09:17/50 16:52 07:57-08:19/22	08:13 09:21-10:49/88 08:51-09:11/20 15:52 13:26-14:34/68	08:50 09:37-11:19/102 13:08-13:22/14 15:41 13:42-14:38/56
26	05:04 21:39	06:05 06:36-07:44/68 20:29	07:07 07:38-08:23/45 19:07	07:09 15:40-16:05/25 16:07-16:17/10 16:50 07:57-08:20/23 08:27-09:19/52	08:15 09:22-10:54/92 08:54-09:11/17 15:51 13:26-14:34/68	08:51 09:37-11:19/102 13:09-13:22/13 15:42 13:42-14:38/56
27	05:06 21:37	06:07 06:38-07:44/66 20:27	07:09 07:39-08:22/43 19:04	07:12 15:41-16:02/21 16:10-16:14/4 16:47 07:56-08:20/24 08:26-09:20/54	08:17 09:22-10:57/95 08:56-09:10/14 15:49 13:27-14:35/68	08:51 09:38-11:19/101 13:10-13:22/12 15:43 13:42-14:39/57
28	05:08 21:36	06:09 06:39-07:44/65 20:24	07:11 07:40-08:22/42 19:02	07:14 15:43-16:00/17 08:25-09:20/55 16:45 07:56-08:20/24	08:19 09:23-10:59/96 08:58-09:10/12 15:48 13:28-14:35/67	08:51 09:38-11:20/102 13:10-13:22/12 15:44 13:43-14:40/57
29	05:10 21:34	06:11 06:41-07:44/63 20:22	07:13 07:42-08:21/39 18:59	07:16 15:47-15:56/9 08:26-09:21/55 16:43 07:56-08:20/24	08:21 09:23-11:01/98 09:00-09:09/9 15:47 13:28-14:35/67	08:51 09:38-11:20/102 13:12-13:22/10 15:45 13:43-14:41/58
30	05:12 21:32	06:13 06:43-07:44/61 20:19	07:15 07:44-08:21/37 18:56	07:18 07:56-08:20/24 16:40 08:25-09:21/56	08:22 09:23-11:02/99 09:02-09:08/6 15:46 13:28-14:35/67	08:51 09:39-11:21/102 13:13-13:22/9 15:46 13:44-14:42/58
31	05:14 20:23-20:25/2 21:30	06:15 06:45-07:44/59 20:17	07:17 07:45-08:20/23 18:56	07:20 07:57-08:20/23 16:38 08:26-09:22/56	08:23 09:23-11:02/99 09:02-09:08/6 15:46 13:28-14:35/67	08:51 09:39-11:21/102 13:15-13:22/7 15:47 13:44-14:43/59
Potential sun hours	529	469	385	324	247	216
Sum of minutes with flicker	1225	1598	1370	2134	5020	5241

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:  
25/06/2024 18:19/4.0.540

## SHADOW - Calendar per WTG

WTG: E14 - Siemens Gamesa SG 7.0-170 7000 170.0 IO! hub: 165.0 m (TOT: 250.0 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
434	458	529	455	479	767	770	921	1,193	1,059	818	546	8,428

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

	January	February	March	April	May	June
1	08:51 09:32-10:35/63 15:48 14:18-14:50/32	08:15 09:25-10:33/68 15:34-15:51/17 16:45 09:00-09:19/19	07:11 07:37-08:25/48 17:48	06:49 07:14-07:26/12 19:53	05:33 06:16-07:12/56 20:55	04:36 05:13-05:36/23 21:52 05:48-06:24/36
2	08:50 09:33-10:36/63 15:49 14:19-14:51/32	08:13 09:25-10:33/68 15:35-15:50/15 16:48 09:01-09:19/18	07:08 07:34-08:23/49 17:50	06:46 07:11-07:26/15 19:55	05:30 06:16-07:12/56 20:57 05:58-06:02/4	04:35 05:13-05:36/23 21:54 05:48-06:24/36
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Potential sun hours	235	266	366	426	508	528
Sum of minutes with flicker	2898	1336	1682	1179	2063	1904

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:

25/06/2024 18:19/4.0.540

## SHADOW - Calendar per WTG

WTG: E14 - Siemens Gamesa SG 7.0-170 7000 170.0 !OI hub: 165.0 m (TOT: 250.0 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
434	458	529	455	479	767	770	921	1,193	1,059	818	546	8,428

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

	July	August	September	October	November	December
1	04:30 05:20-05:42/22 05:08-05:18/10 22:09 05:57-06:28/31	05:16 05:56-07:10/74 21:28	06:17 06:47-07:24/37 20:14	07:17 07:46-08:37/51 18:54 18:02-18:23/21	07:23 08:58-09:40/42 16:36	08:24 09:16-10:21/65 15:45 14:15-14:34/19
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26	05:05 05:56-06:34/38 21:39 06:36-07:06/30	06:05 06:42-07:16/34 20:29	07:07 07:39-08:33/54 19:07	07:10 09:07-09:27/20 16:50	08:15 09:07-10:18/71 15:51	08:50 09:31-10:31/60 15:42 14:14-14:47/33
27	05:06 05:57-06:34/37 21:37 06:36-07:07/31	06:07 06:42-07:15/33 20:27	07:09 07:39-08:35/56 19:04	07:12 09:04-09:29/25 16:48	08:17 09:09-10:19/70 15:49	08:51 09:31-10:32/61 15:43 14:14-14:48/34
28	05:08 05:58-06:34/36 21:36 06:35-07:08/33	06:09 06:42-07:17/35 20:24	07:11 07:40-08:36/56 19:02	07:14 09:02-09:31/29 16:45	08:19 09:11-10:20/69 15:48	08:51 09:32-10:32/60 15:44 14:15-14:48/33
29	05:10 06:34-07:08/34 21:34 05:56-06:33/37	06:11 06:42-07:20/38 20:22	07:13 07:42-08:36/54 18:59	07:16 09:01-09:33/32 16:43	08:21 09:12-10:20/68 15:47	08:51 09:32-10:33/61 15:45 14:15-14:49/34
30	05:12 06:34-07:09/35 21:32 05:56-06:33/37	06:13 06:43-07:22/39 20:19	07:15 07:44-08:37/53 18:56	07:18 09:00-09:34/34 16:41	08:22 09:14-10:21/67 15:46	08:51 09:32-10:34/62 15:46 14:16-14:49/33
31	05:14 05:56-07:10/74 21:30	06:15 06:45-07:23/38 20:17	18:02-18:24/22	07:20 08:58-09:38/40 16:38	14:16-14:33/17	08:51 09:33-10:35/62 15:47 14:17-14:50/33
Potential sun hours	529	469	385	324	247	216
Sum of minutes with flicker	1947	1741	1333	1295	2615	2895

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:

25/06/2024 18:19/4.0.540

## SHADOW - Calendar per WTG

WTG: E15 - Siemens Gamesa SG 7.0-170 7000 170.0 !OI hub: 165.0 m (TOT: 250.0 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
434	458	529	455	479	767	770	921	1,193	1,059	818	546	8,428

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

	January	February	March	April	May	June
1	08:51 14:05-14:17/12 15:48	08:15 08:45-09:16/31 15:36-15:55/19 16:45 09:20-09:24/4	07:11 07:37-07:54/17 17:48 15:41-15:51/10	06:49 07:14-07:49/35 19:53	05:33 20:55	04:36 05:20-05:51/31 21:52
2	08:50 14:05-14:16/11 15:49	08:13 08:43-09:17/34 16:47 15:34-15:57/23	07:08 17:16-17:20/4 17:50 07:34-07:53/19	06:46 07:11-07:47/36 19:55	05:30 20:57	04:35 05:19-05:52/33 21:54
3	08:50 14:07-14:16/9 15:51	08:11 08:41-09:17/36 16:50 15:33-15:59/26	07:06 17:13-17:23/10 17:52 07:32-07:54/22	06:43 07:09-07:46/37 19:57	05:28 20:59	04:34 05:19-05:52/33 21:55
4	08:50 14:09-14:15/6 15:52	08:09 08:39-09:17/38 16:52 15:32-16:01/29	07:03 17:11-17:25/14 17:54 07:29-07:52/23	06:41 07:06-07:43/37 19:59	05:26 21:01	04:33 05:20-05:54/34 21:56
5	08:49 15:53	08:07 08:39-09:17/38 16:54 15:30-16:02/32	07:00 17:09-17:27/18 17:56 07:26-07:51/25	06:38 07:04-07:31/27 20:01	05:23 20:28-20:31/3 21:04	04:32 05:19-05:54/35 21:58
6	08:49 15:55	08:05 08:38-09:16/38 16:56 15:29-16:03/34	06:58 17:09-17:30/21 17:58 07:24-07:50/26	06:35 07:04-07:30/26 20:03	05:21 20:25-20:33/8 21:06	04:31 05:19-05:54/35 21:59
7	08:48 15:56	08:03 08:38-09:15/37 16:59 15:29-16:04/35	06:55 17:07-17:30/23 18:00 07:21-07:47/26	06:33 07:03-07:26/23 20:05	05:19 20:23-20:35/12 21:08	04:30 05:19-05:55/36 22:00
8	08:47 15:58	08:00 08:39-09:15/36 17:01 15:28-16:06/38	06:53 17:07-17:30/23 18:03 07:21-07:40/19	06:30 07:03-07:26/23 20:07	05:17 20:22-20:36/14 21:10	04:29 05:19-05:55/36 22:01
9	08:47 16:00	07:58 08:38-09:13/35 17:03 15:27-16:06/39	06:50 17:07-17:30/23 18:05 07:21-07:40/19	06:28 07:03-07:25/22 20:10	05:15 20:20-20:38/18 21:12	04:29 05:18-05:55/37 22:02
10	08:46 16:01	07:56 08:39-09:11/32 17:05 15:27-16:07/40	06:47 17:06-17:30/24 18:07 07:22-07:39/17	06:25 07:03-07:23/20 20:12	05:13 20:20-20:40/20 21:14	04:28 05:19-05:56/37 22:03
11	08:45 16:03	07:54 08:40-09:06/26 17:08 15:26-16:06/40	06:45 17:06-17:29/23 18:09 07:22-07:37/15	06:22 07:04-07:23/19 20:14	05:11 20:19-20:41/22 21:16	04:27 05:19-05:57/38 22:04
12	08:44 09:21-09:23/2 16:05	07:52 08:40-09:03/23 17:10 15:26-16:07/41	06:42 17:06-17:28/22 18:11 07:24-07:36/12	06:20 07:04-07:21/17 20:16	05:09 20:18-20:41/23 21:18	04:27 05:19-05:57/38 22:05
13	08:43 09:19-09:24/5 16:06	07:49 08:42-09:00/18 17:12 15:26-16:08/42	06:39 17:07-17:28/21 18:13 07:27-07:32/5	06:17 07:06-07:19/13 20:18	05:07 20:18-20:42/24 21:20	04:26 05:19-05:57/38 22:06
14	08:42 09:18-09:25/7 16:08	07:47 08:42-08:58/16 17:14 15:25-16:08/43	06:37 17:08-17:26/18 18:15	06:14 07:09-07:16/7 20:20	05:05 20:18-20:43/25 21:21	04:26 05:20-05:58/39 22:06
15	08:41 09:16-09:26/10 16:10	07:45 08:45-08:56/11 17:17 15:26-16:08/42	06:34 17:09-17:24/15 18:17	06:12 20:22	05:03 20:18-20:42/24 21:23	04:26 05:20-05:58/38 22:07
16	08:40 09:15-09:27/12 16:12	07:42 15:25-16:08/43 17:19	06:32 17:12-17:22/10 18:20	06:09 20:24	05:01 20:17-20:42/25 21:25	04:26 05:19-05:58/39 22:08
17	08:39 09:14-09:28/14 16:14	07:40 15:26-16:08/42 17:21	06:29 18:22	06:07 20:26	04:59 20:18-20:43/25 21:27	04:25 05:19-05:58/39 22:08
18	08:37 09:12-09:29/17 16:16	07:38 15:26-16:07/41 17:23	06:26 18:24	06:04 20:28	04:57 20:18-20:42/24 21:29	04:25 05:19-05:58/39 21:16-21:28/12 22:09
19	08:36 09:10-09:29/19 16:18	07:35 15:26-16:07/41 17:26	06:24 06:49-06:52/3 18:26	06:02 20:30	04:55 20:18-20:42/24 21:31	04:25 05:19-05:58/39 21:17-21:28/11 22:09
20	08:35 09:10-09:30/20 16:20	07:33 15:26-16:06/40 17:28	06:21 06:46-06:54/8 18:28	05:59 20:32	04:53 20:19-20:42/23 21:33	04:25 05:20-05:59/39 21:17-21:29/12 22:10
21	08:33 09:10-09:30/20 16:22	07:31 15:27-16:06/39 17:30	06:18 06:43-06:55/12 18:30	05:57 20:35	04:52 20:18-20:41/23 21:35	04:25 05:20-06:00/40 21:18-21:30/12 22:10
22	08:32 09:09-09:31/22 16:24	07:28 15:28-16:05/37 17:32	06:15 06:41-06:57/16 18:32	05:54 20:37	04:50 20:19-20:41/22 21:36	04:26 05:20-06:00/40 21:18-21:30/12 22:10
23	08:30 09:10-09:31/21 16:26	07:26 15:29-16:05/36 17:34	06:13 06:38-06:57/19 18:34	05:52 20:39	04:48 05:30-05:41/11 21:38	04:26 05:20-05:59/39 21:18-21:29/11 22:10
24	08:29 09:02-09:32/30 16:28	07:23 15:30-16:03/33 17:37	06:10 06:35-06:57/22 18:36	05:49 20:41	04:47 05:27-05:43/16 21:40	04:26 05:21-06:00/39 21:18-21:30/12 22:10
25	08:27 09:00-09:32/32 16:30	07:21 07:48-07:53/5 17:39 15:30-16:01/31	06:07 06:33-06:58/25 18:38	05:47 20:43	04:45 05:25-05:45/20 21:42	04:26 05:21-06:00/39 21:18-21:30/12 22:10
26	08:25 08:58-09:32/34 16:32	07:18 07:45-07:53/8 17:41 15:33-16:00/27	06:05 06:30-06:57/27 18:40	05:44 20:45	04:44 05:24-05:46/22 21:43	04:27 05:21-06:00/39 22:10
27	08:24 08:56-09:31/35 16:34	07:16 07:42-07:53/11 17:43 15:34-15:58/24	06:02 06:27-06:56/29 18:43	05:42 20:47	04:42 05:24-05:48/24 21:45	04:27 05:22-06:00/38 22:10
28	08:22 08:54-09:31/37 16:36	07:13 07:40-07:54/14 17:45 15:37-15:56/19	05:59 06:25-06:56/31 18:45	05:40 20:49	04:41 05:22-05:48/26 21:46	04:28 05:22-06:01/39 22:10
29	08:20 08:52-09:30/38 16:39		06:57 07:22-07:54/32 19:47	05:37 20:51	04:40 05:21-05:49/28 21:48	04:29 05:22-06:00/38 22:10
30	08:18 08:50-09:29/39 16:41		06:54 07:19-07:53/34 19:49	05:35 20:53	04:38 05:21-05:50/29 21:49	04:29 05:23-06:01/38 22:09
31	08:16 08:48-09:28/40 16:43		06:51 07:17-07:51/34 19:51		04:37 05:20-05:51/31 21:51	04:29 05:23-06:01/38 22:09
Potential sun hours	235	266	366	426	508	528
Sum of minutes with flicker	514	1467	816	342	699	1362

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:

25/06/2024 18:19/4.0.540

## SHADOW - Calendar per WTG

WTG: E15 - Siemens Gamesa SG 7.0-170 7000 170.0 !OI hub: 165.0 m (TOT: 250.0 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
434	458	529	455	479	767	770	921	1,193	1,059	818	546	8,428

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

	July	August	September	October	November	December
1	04:30 05:23-06:01/38 22:09 21:20-21:28/8	05:16 20:29-20:52/23 21:28	06:17 07:03-07:22/19 20:14	07:17 17:46-18:08/22 18:54 08:04-08:14/10	07:22 08:08-08:41/33 16:36 14:57-15:36/39	08:24 15:45
2	04:31 05:23-06:00/37 22:08 21:21-21:28/7	05:18 20:29-20:51/22 21:26	06:19 07:02-07:22/20 20:11	07:19 17:45-18:08/23 18:51 08:02-08:16/14	07:25 08:08-08:43/35 16:34 14:57-15:35/38	08:26 15:44
3	04:32 05:23-06:01/38 22:08 21:22-21:28/6	05:20 20:30-20:49/19 21:24	06:21 07:01-07:23/22 20:09	07:21 17:44-18:08/24 18:48 08:00-08:17/17	07:27 08:08-08:45/37 16:32 14:58-15:35/37	08:27 15:43
4	04:33 05:24-06:01/37 22:07 21:23-21:27/4	05:21 20:31-20:48/17 21:22	06:23 07:00-07:23/23 20:06	07:23 17:44-18:07/23 18:46 07:59-08:17/18	07:29 08:08-08:45/37 16:29 14:58-15:34/36	08:29 15:42
5	04:34 05:25-06:01/36 22:07 21:23-21:27/4	05:23 20:31-20:45/14 21:19	06:25 07:00-07:23/23 20:03	07:25 17:44-18:07/23 18:43 07:58-08:17/19	07:31 08:08-08:46/38 16:27 14:59-15:33/34	08:31 15:42
6	04:35 05:25-06:01/36 22:06 21:25-21:26/1	05:25 20:33-20:43/10 21:17	06:27 07:00-07:26/26 20:01	07:27 17:43-18:06/23 18:40 07:57-08:21/24	07:33 08:09-08:47/38 16:25 15:01-15:32/31	08:32 15:41
7	04:36 05:25-06:01/36 22:05	05:27 20:35-20:41/6 21:15	06:29 06:59-07:26/27 19:58	07:29 17:44-18:05/21 18:38 07:58-08:24/26	07:36 08:09-08:47/38 16:23 15:01-15:31/30	08:34 15:40
8	04:37 05:26-06:00/34 22:04	05:29 21:13	06:31 07:00-07:37/37 19:55	07:32 17:44-18:04/20 18:35 08:00-08:26/26	07:38 08:12-08:48/36 16:21 15:03-15:30/27	08:35 13:57-14:03/6 15:40
9	04:38 05:26-06:00/34 22:03	05:31 21:11	06:33 07:02-07:39/37 19:53	07:34 17:45-18:01/16 18:32 08:03-08:27/24	07:40 08:14-08:48/34 16:19 15:05-15:28/23	08:36 13:56-14:04/8 15:39
10	04:39 05:27-06:00/33 22:02	05:33 21:08	06:35 07:04-07:40/36 19:50	07:36 17:47-17:59/12 18:30 08:05-08:28/23	07:42 08:16-08:47/31 15:07-15:26/19 16:17 08:51-08:57/6	08:38 13:56-14:06/10 15:39
11	04:41 05:28-06:00/32 22:01	05:35 21:06	06:37 07:06-07:41/35 19:47	07:38 17:48-17:56/8 18:27 08:07-08:28/21	07:44 08:19-08:59/40 16:15 15:10-15:24/14	08:39 13:55-14:07/12 15:39
12	04:42 05:29-06:00/31 22:00	05:37 21:04	06:39 07:08-07:42/34 19:45	07:40 08:09-08:27/18 18:25	07:46 08:21-09:00/39 16:13	08:40 13:55-14:07/12 15:38
13	04:43 05:29-05:59/30 21:59 20:36-20:43/7	05:39 21:01	06:41 07:10-07:44/34 19:42	07:42 08:11-08:27/16 18:22 16:12-16:26/14	07:48 08:24-09:02/38 16:11	08:41 13:55-14:09/14 15:38
14	04:45 05:30-05:58/28 21:58 20:34-20:45/11	05:41 20:59	06:43 07:12-07:45/33 19:39	07:44 08:13-08:26/13 18:19 16:08-16:29/21	07:51 08:26-09:03/37 16:09	08:42 13:55-14:10/15 15:38
15	04:46 05:31-05:58/27 21:56 20:33-20:46/13	05:43 20:57	06:45 07:14-07:45/31 19:37	07:46 08:16-08:26/10 18:17 16:06-16:32/26	07:53 08:28-09:03/35 16:08	08:44 13:55-14:10/15 15:38
16	04:48 05:32-05:57/25 21:55 20:33-20:48/15	05:45 20:54	06:47 07:16-07:45/29 19:34	07:48 08:18-08:25/7 18:14 16:04-16:33/29	07:55 08:31-09:04/33 16:06	08:44 13:56-14:11/15 15:38
17	04:49 05:32-05:56/24 21:54 20:31-20:48/17	05:47 20:52	06:49 07:18-07:45/27 19:31	07:50 08:20-08:23/3 18:12 16:02-16:34/32	07:57 08:33-09:05/32 16:04	08:45 13:56-14:12/16 15:38
18	04:51 05:34-05:55/21 21:52 20:31-20:49/18	05:49 20:49	06:51 07:20-07:45/25 19:29	07:52 16:00-16:35/35 18:09	07:59 08:36-09:06/30 16:02	08:46 13:56-14:13/17 15:38
19	04:53 05:36-05:53/17 21:51 20:30-20:50/20	05:51 20:47	06:53 07:22-07:45/23 19:26	07:54 15:59-16:35/36 18:07	08:01 08:45-09:06/21 16:01 08:38-08:43/5	08:47 13:56-14:12/16 15:38
20	04:54 05:38-05:52/14 21:49 20:30-20:51/21	05:53 20:45	06:55 07:24-07:44/20 19:23	07:57 15:59-16:36/37 18:04	08:03 08:45-09:06/21 15:59	08:48 13:57-14:13/16 15:39
21	04:56 05:41-05:48/7 21:48 20:29-20:51/22	05:55 20:42	06:57 07:26-07:43/17 19:20	07:59 15:57-16:37/40 18:02	08:05 08:45-09:05/20 15:58	08:48 13:58-14:14/16 15:39
22	04:58 20:29-20:52/23 21:46	05:57 20:40	06:59 07:28-07:42/14 19:18	08:01 15:56-16:37/41 17:59	08:07 08:46-09:06/20 15:56	08:49 13:58-14:14/16 15:39
23	04:59 20:29-20:52/23 21:44	05:59 20:37	07:01 07:30-07:40/10 19:15	08:03 15:57-16:38/41 17:57	08:09 08:47-09:06/19 15:55	08:49 13:58-14:14/16 15:40
24	05:01 20:29-20:52/23 21:43	06:01 20:35	07:03 07:32-07:37/5 19:12	08:05 15:56-16:38/42 17:55	08:11 08:49-09:06/17 15:53	08:50 13:59-14:15/16 15:41
25	05:03 20:28-20:52/24 21:41	06:03 20:32	07:05 19:10	07:07 14:55-15:37/42 16:52	08:13 08:51-09:05/14 15:52	08:50 13:59-14:16/17 15:41
26	05:05 20:28-20:53/25 21:39	06:05 20:29	07:07 19:07	07:09 08:18-08:23/5 16:50 14:56-15:38/42	08:15 08:53-09:05/12 15:51	08:50 14:00-14:16/16 15:42
27	05:06 20:28-20:53/25 21:37	06:07 20:27	07:09 17:54-18:01/7 19:04	07:12 08:14-08:26/12 16:47 14:55-15:38/43	08:17 08:56-09:06/10 15:49	08:51 14:00-14:16/16 15:43
28	05:08 20:28-20:52/24 21:36	06:09 20:24	07:11 17:50-18:04/14 19:02	07:14 08:11-08:27/16 16:45 14:55-15:37/42	08:19 08:58-09:05/7 15:48	08:51 14:01-14:16/15 15:44
29	05:10 20:28-20:53/25 21:34	06:11 07:09-07:17/8 20:22	07:13 17:48-18:05/17 18:59	07:16 08:11-08:29/18 16:43 14:56-15:37/41	08:20 09:00-09:05/5 15:47	08:51 14:02-14:17/15 15:45
30	05:12 20:29-20:53/24 21:32	06:13 07:06-07:19/13 20:19	07:15 17:47-18:07/20 18:56	07:18 08:09-08:33/24 16:41 14:55-15:37/42	08:22 09:02-09:04/2 15:46	08:51 14:03-14:17/14 15:46
31	05:14 20:29-20:53/24 21:30	06:15 07:04-07:21/17 20:17		07:20 08:08-08:37/29 16:38 14:55-15:36/41		08:51 14:03-14:16/13 15:47
Potential sun hours	529	469	385	324	247	216
Sum of minutes with flicker	1029	149	665	1295	1148	385

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

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0037167242411

Anna / anna@environment.lv

Calculated:

25/06/2024 18:19/4.0.540

## SHADOW - Calendar per WTG

WTG: E16 - Siemens Gamesa SG 7.0-170 7000 170.0 IO! hub: 165.0 m (TOT: 250.0 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
434	458	529	455	479	767	770	921	1,193	1,059	818	546	8,428

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

	January			February		March	April		May		June		
1	08:51	12:40-13:23/43		08:15	16:02-16:06/4	07:11	06:49		05:33		04:36 19:55-20:30/35		
	15:48			16:45		17:47	19:53		20:55		21:52		
2	08:50	12:40-13:23/43		08:13	15:58-16:11/13	07:08	06:46		05:30		04:35 19:55-20:30/35		
	15:49			16:47		17:50	19:55		20:57		21:54		
3	08:50	12:41-13:24/43		08:11	15:56-16:14/18	07:06	06:43		05:28 20:05-20:18/13		04:34 19:55-20:29/34		
	15:51			16:50		17:52	19:57		20:59		21:55		
4	08:50	12:41-13:24/43		08:09	15:55-16:16/21	07:03	06:41		05:26 20:02-20:21/19		04:33 19:56-20:29/33		
	15:52			16:52		17:54	19:59		21:01		21:56		
5	08:49	12:41-13:24/43		08:07	15:53-16:16/23	07:00	06:38		05:23 20:00-20:23/23		04:32 19:57-20:30/33		
	15:53			16:54		17:56	20:01		21:03		21:58		
6	08:49	12:42-13:25/43		08:05	15:53-16:18/25	06:58	06:35		05:21 19:59-20:24/25		04:31 19:57-20:29/32		
	15:55			16:56		17:58	20:03		21:06		21:59		
7	08:48	12:43-13:25/42		08:02	15:52-16:19/27	06:55	06:33	06:58-07:03/5	05:19 19:57-20:25/28		04:30 19:57-20:29/32		
	15:56			16:59		18:00	20:05		21:08		22:00		
8	08:47	12:43-13:25/42		08:00	15:51-16:19/28	06:53	06:30	06:56-07:08/12	05:17 19:56-20:26/30		04:29 19:58-20:29/31		
	15:58			17:01		18:03	20:07		21:10		22:01		
9	08:47	12:44-13:26/42		07:58	15:51-16:20/29	06:50	06:27	06:53-07:09/16	05:15 19:55-20:27/32		04:29 19:58-20:29/31		
	15:59			17:03		18:05	20:10		21:12		22:02		
10	08:46	12:45-13:26/41		07:56	15:51-16:21/30	06:47	06:25	06:50-07:10/20	05:13 19:54-20:28/34		04:28 19:59-20:29/30		
	16:01			17:05		18:07	20:12		21:14		22:03		
11	08:45	12:45-13:26/41		07:54	15:50-16:21/31	06:45	06:22	06:48-07:12/24	05:11 19:54-20:28/34		04:27 19:59-20:28/29		
	16:03			17:08		18:09	20:14		21:16		22:04		
12	08:44	12:45-13:25/40		07:52	15:50-16:21/31	06:42	06:20	06:47-07:12/25	05:08 19:53-20:28/35		04:27 20:00-20:29/29		
	16:05			17:10		18:11	20:16		21:18		22:05		
13	08:43	12:46-13:26/40		07:49	15:51-16:22/31	06:39	06:17	06:46-07:13/27	05:06 19:52-20:29/37		04:26 20:01-20:29/28		
	16:06			17:12		18:13	20:18		21:19		22:06		
14	08:42	12:47-13:26/39		07:47	15:50-16:21/31	06:37	06:14	06:45-07:12/27	05:05 19:53-20:30/37		04:26 20:02-20:29/27		
	16:08			17:14		18:15	20:20		21:21		22:06		
15	08:41	12:48-13:25/37		07:45	15:51-16:21/30	06:34	06:12	06:45-07:13/28	05:03 19:52-20:30/38		04:26 20:01-20:28/27		
	16:10			17:17		18:17	20:22		21:23		22:07		
16	08:40	12:49-13:26/37		07:42	15:51-16:20/29	06:31	06:09	06:44-07:12/28	05:01 19:51-20:30/39		04:26 20:02-20:28/26		
	16:12			17:19		18:20	20:24		21:25		22:08		
17	08:39	12:49-13:25/36		07:40	15:52-16:20/28	06:29	06:07	06:44-07:13/29	04:59 19:52-20:31/39		04:25 20:02-20:29/27		
	16:14			17:21		18:22	20:26		21:27		22:08		
18	08:37	12:51-13:25/34		07:38	15:52-16:19/27	06:26	06:04	06:44-07:12/28	04:57 19:51-20:30/39		04:25 20:02-20:29/27		
	16:16			17:23		18:24	20:28		21:29		22:09		
19	08:36	12:52-13:24/32		07:35	15:54-16:18/24	06:23	06:02	06:44-07:11/27	04:55 19:51-20:30/39		04:25 20:03-20:29/26		
	16:18			17:25		18:26	20:30		21:31		22:09		
20	08:35	12:53-13:24/31		07:33	15:55-16:16/21	06:21	05:59	06:45-07:11/26	04:53 19:52-20:31/39		04:25 20:03-20:29/26		
	16:20			17:28		18:28	20:32		21:33		22:09		
21	08:33	12:55-13:24/29		07:31	15:57-16:15/18	06:18	05:57	06:45-07:10/25	04:52 19:51-20:30/39		04:25 20:04-20:30/26		
	16:22			17:30		18:30	20:34		21:35		22:10		
22	08:32	12:56-13:22/26		07:28	15:59-16:12/13	06:15	05:54	06:46-07:09/23	04:50 19:52-20:31/39		04:26 20:04-20:30/26		
	16:24			17:32		18:32	20:37		21:36		22:10		
23	08:30	12:58-13:21/23		07:26		06:13	05:52	06:46-07:07/21	04:48 19:52-20:31/39		04:26 20:04-20:30/26		
	16:26			17:34		18:34	20:39		21:38		22:10		
24	08:29	13:00-13:19/19		07:23		06:10	05:49	06:47-07:06/19	04:47 19:52-20:30/38		04:26 20:04-20:30/26		
	16:28			17:37		18:36	20:41		21:40		22:10		
25	08:27	13:02-13:17/15		07:21		06:07	05:47	06:49-07:04/15	04:45 19:52-20:31/39		04:26 20:04-20:31/27		
	16:30			17:39		18:38	20:43		21:41		22:10		
26	08:25	13:09-13:13/4		07:18		06:05	05:44	06:51-07:00/9	04:44 19:53-20:31/38		04:27 20:04-20:30/26		
	16:32			17:41		18:40	20:45		21:43		22:10		
27	08:24			07:16		06:02	05:42		04:42 19:52-20:30/38		04:27 20:04-20:31/27		
	16:34			17:43		18:43	20:47		21:45		22:10		
28	08:22			07:13		05:59	05:40		04:41 19:53-20:30/37		04:28 20:04-20:31/27		
	16:36			17:45		18:45	20:49		21:46		22:10		
29	08:20					06:57	05:37		04:40 19:53-20:30/37		04:29 20:04-20:32/28		
	16:39					19:47	20:51		21:48		22:09		
30	08:18					06:54	05:35		04:38 19:54-20:30/36		04:29 20:04-20:33/29		
	16:41					19:49	20:53		21:49		22:09		
31	08:16					06:51			04:37 19:54-20:30/36				
	16:43					19:51			21:51				
Potential sun hours	235			266		366		426		508		528	
Sum of minutes with flicker	908			532		0		434		996		866	

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:

25/06/2024 18:19/4.0.540

## SHADOW - Calendar per WTG

WTG: E16 - Siemens Gamesa SG 7.0-170 7000 170.0 IO! hub: 165.0 m (TOT: 250.0 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
434	458	529	455	479	767	770	921	1,193	1,059	818	546	8,428

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

	July		August		September		October		November		December	
1	04:30	20:04-20:32/28	05:16	20:03-20:39/36	06:17	06:47-07:11/24	07:17		07:22	15:20-15:50/30	08:24	12:28-13:08/40
	22:09		21:28		20:14		18:54		16:36		15:45	
2	04:31	20:04-20:33/29	05:18	20:04-20:38/34	06:19	06:49-07:09/20	07:19		07:25	15:20-15:50/30	08:26	12:27-13:08/41
	22:08		21:26		20:11		18:51		16:34		15:44	
3	04:32	20:04-20:34/30	05:20	20:05-20:38/33	06:21	06:51-07:08/17	07:21		07:27	15:21-15:49/28	08:27	12:27-13:09/42
	22:08		21:24		20:09		18:48		16:32		15:43	
4	04:33	20:04-20:34/30	05:21	20:06-20:37/31	06:23	06:53-07:05/12	07:23		07:29	15:22-15:49/27	08:29	12:27-13:09/42
	22:07		21:21		20:06		18:46		16:29		15:42	
5	04:34	20:04-20:35/31	05:23	20:06-20:35/29	06:25	06:55-07:01/6	07:25		07:31	15:22-15:47/25	08:31	12:28-13:10/42
	22:06		21:19		20:03		18:43		16:27		15:42	
6	04:35	20:04-20:35/31	05:25	20:07-20:34/27	06:27		07:27		07:33	15:24-15:47/23	08:32	12:29-13:11/42
	22:06		21:17		20:01		18:40		16:25		15:41	
7	04:36	20:04-20:36/32	05:27	20:09-20:33/24	06:29		07:29		07:35	15:25-15:45/20	08:34	12:28-13:11/43
	22:05		21:15		19:58		18:38		16:23		15:40	
8	04:37	20:03-20:36/33	05:29	20:10-20:31/21	06:31		07:31		07:38	15:26-15:43/17	08:35	12:29-13:12/43
	22:04		21:13		19:55		18:35		16:21		15:40	
9	04:38	20:03-20:37/34	05:31	20:12-20:29/17	06:33		07:34		07:40	15:29-15:41/12	08:36	12:29-13:12/43
	22:03		21:11		19:53		18:32		16:19		15:39	
10	04:39	20:03-20:37/34	05:33	20:15-20:25/10	06:35		07:36		07:42	15:33-15:36/3	08:38	12:30-13:13/43
	22:02		21:08		19:50		18:30		16:17		15:39	
11	04:41	20:02-20:37/35	05:35		06:37		07:38		07:44		08:39	12:30-13:13/43
	22:01		21:06		19:47		18:27		16:15		15:39	
12	04:42	20:03-20:38/35	05:37		06:39		07:40		07:46		08:40	12:30-13:13/43
	22:00		21:04		19:45		18:25		16:13		15:38	
13	04:43	20:03-20:39/36	05:39		06:41		07:42		07:48		08:41	12:31-13:14/43
	21:59		21:01		19:42		18:22		16:11		15:38	
14	04:45	20:02-20:39/37	05:41		06:43		07:44		07:51		08:42	12:31-13:15/44
	21:58		20:59		19:39		18:19		16:09		15:38	
15	04:46	20:02-20:39/37	05:43		06:45		07:46		07:53		08:43	12:32-13:15/43
	21:56		20:57		19:37		18:17		16:08		15:38	
16	04:48	20:02-20:40/38	05:45		06:47		07:48		07:55	12:41-12:46/5	08:44	12:32-13:16/44
	21:55		20:54		19:34		18:14		16:06		15:38	
17	04:49	20:02-20:40/38	05:47	06:58-07:09/11	06:49		07:50		07:57	12:36-12:51/15	08:45	12:33-13:16/43
	21:54		20:52		19:31		18:12		16:04		15:38	
18	04:51	20:02-20:40/38	05:49	06:54-07:10/16	06:51		07:52		07:59	12:34-12:53/19	08:46	12:33-13:17/44
	21:52		20:49		19:28		18:09		16:02		15:38	
19	04:53	20:02-20:40/38	05:51	06:52-07:12/20	06:53		07:54	16:33-16:39/6	08:01	12:33-12:56/23	08:47	12:33-13:17/44
	21:51		20:47		19:26		18:07		16:01		15:38	
20	04:54	20:02-20:41/39	05:53	06:51-07:13/22	06:55		07:57	16:29-16:44/15	08:03	12:31-12:57/26	08:48	12:34-13:17/43
	21:49		20:44		19:23		18:04		15:59		15:39	
21	04:56	20:01-20:40/39	05:55	06:50-07:14/24	06:57		07:59	16:27-16:46/19	08:05	12:30-12:59/29	08:48	12:34-13:17/43
	21:48		20:42		19:20		18:02		15:58		15:39	
22	04:58	20:02-20:41/39	05:57	06:49-07:14/25	06:59		08:01	16:24-16:47/23	08:07	12:30-13:01/31	08:49	12:35-13:18/43
	21:46		20:40		19:18		17:59		15:56		15:39	
23	04:59	20:01-20:41/40	05:59	06:48-07:15/27	07:01		08:03	16:24-16:49/25	08:09	12:29-13:02/33	08:49	12:35-13:18/43
	21:44		20:37		19:15		17:57		15:55		15:40	
24	05:01	20:02-20:41/39	06:01	06:48-07:15/27	07:03		08:05	16:22-16:49/27	08:11	12:28-13:02/34	08:50	12:36-13:19/43
	21:43		20:34		19:12		17:55		15:53		15:41	
25	05:03	20:01-20:40/39	06:03	06:47-07:15/28	07:05		07:07	15:21-15:50/29	08:13	12:28-13:03/35	08:50	12:36-13:20/44
	21:41		20:32		19:10		16:52		15:52		15:41	
26	05:05	20:02-20:41/39	06:05	06:47-07:15/28	07:07		07:09	15:20-15:50/30	08:15	12:27-13:04/37	08:50	12:36-13:20/44
	21:39		20:29		19:07		16:50		15:51		15:42	
27	05:06	20:02-20:41/39	06:07	06:46-07:14/28	07:09		07:12	15:20-15:51/31	08:17	12:27-13:05/38	08:51	12:37-13:20/43
	21:37		20:27		19:04		16:47		15:49		15:43	
28	05:08	20:02-20:40/38	06:09	06:46-07:14/28	07:11		07:14	15:20-15:50/30	08:19	12:28-13:06/38	08:51	12:37-13:21/44
	21:35		20:24		19:02		16:45		15:48		15:44	
29	05:10	20:02-20:40/38	06:11	06:46-07:13/27	07:13		07:16	15:20-15:51/31	08:20	12:28-13:07/39	08:51	12:38-13:21/43
	21:34		20:22		18:59		16:43		15:47		15:45	
30	05:12	20:03-20:40/37	06:13	06:46-07:13/27	07:15		07:18	15:20-15:51/31	08:22	12:28-13:08/40	08:51	12:39-13:22/43
	21:32		20:19		18:56		16:40		15:46		15:46	
31	05:14	20:04-20:40/36	06:15	06:47-07:12/25			07:20	15:20-15:50/30			08:51	12:38-13:22/44
	21:30		20:16				16:38				15:47	
Potential sun hours	529		469		385		324		248		216	
Sum of minutes with flicker	1106		625		79		327		657		1332	

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:

25/06/2024 18:19/4.0.540

## SHADOW - Calendar per WTG

WTG: E2 - Siemens Gamesa SG 7.0-170 7000 170.0 !O! hub: 165.0 m (TOT: 250.0 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
434	458	529	455	479	767	770	921	1,193	1,059	818	546	8,428

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
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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:

25/06/2024 18:19/4.0.540

## SHADOW - Calendar per WTG

WTG: E3 - Siemens Gamesa SG 7.0-170 7000 170.0 !O! hub: 165.0 m (TOT: 250.0 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
434	458	529	455	479	767	770	921	1,193	1,059	818	546	8,428

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
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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
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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
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31	08:16 16:43	08:16 19:51	06:51 19:51	05:35 20:53	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:

25/06/2024 18:19/4.0.540

## SHADOW - Calendar per WTG

WTG: E4 - Siemens Gamesa SG 7.0-170 7000 170.0 !O! hub: 165.0 m (TOT: 250.0 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
434	458	529	455	479	767	770	921	1,193	1,059	818	546	8,428

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
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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
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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	07:10 19:46	06:56 20:51	05:37 21:48	04:39 21:48	04:28 22:09	05:10 21:33	06:11 20:21	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	07:00 19:51	06:51 21:51	05:30 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:

25/06/2024 18:19/4.0.540

## SHADOW - Calendar per WTG

WTG: E5 - Siemens Gamesa SG 7.0-170 7000 170.0 !OI hub: 165.0 m (TOT: 250.0 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
434	458	529	455	479	767	770	921	1,193	1,059	818	546	8,428

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

	January			February			March			April			May			June		
1	08:51	14:07-14:16/9		08:15	07:11		07:11			06:49	07:14-07:31/17		05:32	07:22-08:44/82		04:36	07:36-08:25/49	
	15:48	10:50-11:33/43		16:45	17:47		17:47			19:53			20:55	06:30-07:12/42		21:53	05:10-05:28/18	
2	08:50	14:09-14:16/7		08:13	07:08	07:34-07:43/9				06:46	08:00-08:22/22		05:30	07:22-08:44/82		04:34	07:36-08:24/48	
	15:49	10:51-11:33/42		16:47	17:50					19:55	07:11-07:30/19		20:57	06:30-07:12/42		21:54	05:09-05:29/20	
3	08:50	14:11-14:14/3		08:11	07:06	07:32-07:47/15				06:43	07:55-08:26/31		05:28	07:22-08:44/82		04:33	07:37-08:24/47	
	15:50	10:51-11:33/42		16:49	17:52					19:57	07:10-07:29/19		20:59	06:30-07:12/42		21:55	05:08-05:29/21	
4	08:50	10:51-11:34/43		08:09	07:03	07:29-07:48/19				06:41	07:52-08:30/38		05:25	07:22-08:44/82		04:32	07:38-08:23/45	
	15:52			16:52	17:54					19:59	07:11-07:29/18		21:02	06:31-07:11/40		21:57	05:07-05:29/22	
5	08:49	10:52-11:35/43		08:07	07:00	07:27-07:49/22				06:38	07:49-08:32/43		05:23	07:23-08:43/80		04:31	07:39-08:23/44	
	15:53			16:54	17:56					20:01	07:11-07:28/17		21:04	06:31-07:11/40		21:58	05:07-05:30/23	
6	08:49	10:52-11:35/43		08:05	06:58	07:26-07:51/25				06:35	07:47-08:35/48		05:21	07:23-08:43/80		04:31	07:40-08:22/42	
	15:55			16:56	17:58					20:03	07:12-07:27/15		21:06	06:31-07:10/39		21:59	05:06-05:30/24	
7	08:48	10:53-11:35/42		08:03	06:55	07:25-07:51/26				06:33	07:44-08:36/52		05:19	07:23-08:42/79		04:30	07:40-08:21/41	
	15:56			16:58	18:00					20:05	07:13-07:25/12		21:08	06:32-07:10/38		22:00	05:05-05:30/25	
8	08:47	10:53-11:35/42		08:00	06:53	07:24-07:51/27				06:30	07:41-08:37/56		05:17	07:23-08:42/79		04:29	07:42-08:21/39	
	15:58			17:01	18:02					20:07	07:14-07:22/8		21:10	06:32-07:09/37		22:01	05:05-05:30/25	
9	08:47	10:54-11:36/42		07:58	06:50	07:24-07:52/28				06:27	07:40-08:39/59		05:14	07:23-08:41/78		04:28	07:42-08:20/38	
	15:59			17:03	18:05					20:10			21:12	06:33-07:08/35		22:02	05:04-05:30/26	
10	08:46	10:54-11:36/42		07:56	06:47	07:23-07:51/28				06:25	07:38-08:40/62		05:12	07:23-08:40/77		04:28	07:43-08:20/37	
	16:01			17:05	18:07					20:12			21:14	06:33-07:07/34		22:03	05:04-05:31/27	
11	08:45	10:55-11:36/41		07:54	06:45	07:23-07:51/28				06:22	07:37-08:41/64		05:10	07:23-08:40/77		04:27	07:43-08:19/36	
	16:02			17:07	18:09					20:14			21:16	06:34-07:06/32		22:04	05:03-05:30/27	
12	08:44	10:56-11:37/41		07:52	06:42	07:23-07:51/28				06:19	07:35-08:42/67		05:08	07:23-08:39/76		04:26	07:44-08:19/35	
	16:04			17:10	18:11					20:16	06:45-06:49/4		21:18	06:35-07:05/30		22:05	05:03-05:31/28	
13	08:43	10:56-11:36/40		07:49	06:39	07:23-07:50/27				06:17	07:34-08:43/69		05:06	07:24-08:38/74		04:26	07:45-08:19/34	
	16:06			17:12	18:13					20:18	06:43-06:51/8		21:20	06:36-07:03/27		22:06	05:03-05:31/28	
14	08:42	10:57-11:37/40		07:47	06:37	07:23-07:49/26				06:14	07:32-08:43/71		05:04	07:24-08:37/73		04:26	07:45-08:18/33	
	16:08			17:14	18:15					20:20	06:40-06:57/17		21:22	06:38-07:03/25		22:07	05:02-05:31/29	
15	08:41	10:58-11:37/39		07:45	06:34	07:23-07:48/25				06:12	07:32-08:44/72		05:02	07:25-08:37/72		04:25	07:46-08:17/31	
	16:10			17:16	18:17					20:22	06:38-07:03/25		21:24	06:39-07:01/22		22:07	05:02-05:31/29	
16	08:40	10:58-11:37/39		07:42	06:31	07:25-07:47/22				06:09	07:30-08:44/74		05:00	07:25-08:36/71		04:25	07:47-08:17/30	
	16:12			17:19	18:19					20:24	06:35-07:05/30		21:25	06:41-06:59/18		22:08	05:02-05:31/29	
17	08:39	10:59-11:37/38		07:40	06:29	07:25-07:45/20				06:07	07:30-08:45/75		04:58	07:25-08:35/70		04:25	07:47-08:17/30	
	16:13			17:21	18:22					20:26	06:33-07:07/34		21:27	06:43-06:56/13		22:08	05:02-05:32/30	
18	08:37	11:00-11:36/36		07:38	06:26	07:27-07:43/16				06:04	07:28-08:45/77		04:57	07:26-08:35/69		04:25	07:48-08:17/29	
	16:15			17:23	18:24					20:28	06:31-07:08/37		21:29	06:47-06:52/5		22:09	05:02-05:32/30	
19	08:36	11:00-11:36/36		07:35	06:23	07:30-07:40/10				06:02	07:28-08:46/78		04:55	07:26-08:34/68		04:25	07:48-08:17/29	
	16:17			17:25	18:26					20:30	06:31-07:10/39		21:31			22:09	05:02-05:32/30	
20	08:35	11:02-11:36/34		07:33	06:21					05:59	07:26-08:45/79		04:53	07:27-08:34/67		04:25	07:48-08:17/29	
	16:19			17:28	18:28					20:32	06:31-07:10/39		21:33			22:10	05:02-05:32/30	
21	08:33	11:03-11:35/32		07:31	06:18					05:56	07:26-08:46/80		04:51	07:28-08:33/65		04:25	07:48-08:17/29	
	16:21			17:30	18:30					20:35	06:31-07:11/40		21:35			22:10	05:02-05:32/30	
22	08:32	11:04-11:34/30		07:28	06:15					05:54	07:25-08:45/80		04:50	07:29-08:33/64		04:25	07:49-08:18/29	
	16:23			17:32	18:32					20:37	06:32-07:12/40		21:36			22:10	05:03-05:33/30	
23	08:30	11:05-11:33/28		07:26	06:13					05:51	07:25-08:46/81		04:48	07:29-08:31/62		04:25	07:49-08:18/29	
	16:26			17:34	18:34					20:39	06:32-07:12/40		21:38			22:10	05:03-05:33/30	
24	08:29	11:07-11:33/26		07:23	06:10					05:49	07:25-08:46/81		04:46	07:30-08:31/61		04:26	07:49-08:18/29	
	16:28			17:36	18:36					20:41	06:32-07:13/41		21:40	05:19-05:23/4		22:10	05:03-05:33/30	
25	08:27	11:09-11:32/23		07:21	06:07					05:47	07:23-08:45/82		04:45	07:31-08:30/59		04:26	07:50-08:19/29	
	16:30			17:39	18:38					20:43	06:32-07:13/41		21:42	05:18-05:24/6		22:10	05:04-05:34/30	
26	08:25	11:11-11:30/19		07:18	06:05					05:44	07:23-08:45/82		04:43	07:31-08:29/58		04:27	07:49-08:19/30	
	16:32			17:41	18:40					20:45	06:31-07:13/42		21:43	05:17-05:25/8		22:10	05:04-05:33/29	
27	08:24	11:14-11:27/13		07:16	06:02					05:42	07:23-08:45/82		04:42	07:32-08:28/56		04:27	07:49-08:20/31	
	16:34			17:43	18:42					20:47	06:31-07:13/42		21:45	05:15-05:25/10		22:10	05:05-05:34/29	
28	08:22			07:13	05:59	06:24-06:27/3				05:39	07:23-08:46/83		04:41	07:32-08:28/56		04:28	07:49-08:21/32	
	16:36			17:45	18:45					20:49	06:31-07:13/42		21:47	05:14-05:26/12		22:10	05:05-05:34/29	
29	08:20				06:57	07:22-07:29/7				05:37	07:22-08:45/83		04:39	07:33-08:27/54		04:28	07:49-08:22/33	
	16:38				19:47					20:51	06:30-07:12/42		21:48	05:13-05:27/14		22:10	05:06-05:34/28	
30	08:18				06:54	07:19-07:30/11				05:35	07:22-08:44/82		04:38	07:34-08:27/53		04:29	07:48-08:22/34	
	16:41				19:49					20:53	06:30-07:12/42		21:50	05:12-05:28/16		22:09	05:07-05:35/28	
31	08:17				06:51	07:16-07:30/14							04:37	07:35-08:26/51				
	16:43				19:51								21:51	05:11-05:28/17				
Potential sun hours	235			266						426			508			529		
Sum of minutes with flicker	998		0	436		2723		2805		1865								

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:

25/06/2024 18:19/4.0.540

## SHADOW - Calendar per WTG

WTG: E5 - Siemens Gamesa SG 7.0-170 7000 170.0 !O! hub: 165.0 m (TOT: 250.0 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
434	458	529	455	479	767	770	921	1,193	1,059	818	546	8,428

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

	July		August		September		October		November		December	
1	04:30	07:48-08:23/35	05:15	07:34-08:50/76	06:17	07:36-08:40/64	07:17	08:02-08:30/28	07:22		08:24	10:37-11:18/41
	22:09	05:07-05:35/28	21:28	06:45-07:15/30	20:14		18:53		16:36		15:45	
2	04:31	07:48-08:24/36	05:17	07:34-08:50/76	06:19	07:37-08:39/62	07:19	08:02-08:30/28	07:25		08:26	10:38-11:19/41
	22:08	05:08-05:35/27	21:26	06:44-07:17/33	20:11		18:51		16:34		15:44	
3	04:31	07:47-08:25/38	05:19	07:33-08:51/78	06:21	07:38-08:37/59	07:21	08:01-08:30/29	07:27		08:28	10:38-11:20/42
	22:08	05:09-05:35/26	21:24	06:44-07:18/34	20:09		18:48		16:31		15:43	
4	04:32	07:47-08:26/39	05:21	07:32-08:51/79	06:23	07:38-08:34/56	07:23	08:01-08:29/28	07:29		08:29	10:37-11:19/42
	22:07	05:10-05:36/26	21:22	06:43-07:19/36	20:06	07:12-07:20/8	18:45		16:29		15:42	
5	04:33	07:47-08:27/40	05:23	07:32-08:51/79	06:25	07:40-08:32/52	07:25	08:01-08:28/27	07:31		08:31	10:38-11:20/42
	22:07	05:11-05:36/25	21:19	06:41-07:18/37	20:03	07:09-07:21/12	18:43		16:27		15:41	
6	04:34	07:46-08:28/42	05:25	07:32-08:52/80	06:27	07:42-08:30/48	07:27	08:01-08:27/26	07:33		08:32	10:39-11:21/42
	22:06	05:12-05:36/24	21:17	06:41-07:19/38	20:01	07:07-07:22/15	18:40		16:25		15:41	
7	04:35	07:46-08:29/43	05:27	07:32-08:52/80	06:29	07:44-08:27/43	07:29	08:01-08:26/25	07:36		08:34	10:38-11:21/43
	22:05	05:13-05:36/23	21:15	06:41-07:20/39	19:58	07:06-07:23/17	18:38		16:23		15:40	
8	04:37	07:45-08:30/45	05:29	07:32-08:53/81	06:31	07:46-08:24/38	07:31	08:02-08:25/23	07:38		08:35	10:39-11:22/43
	22:04	05:14-05:36/22	21:13	06:40-07:20/40	19:55	07:05-07:23/18	18:35		16:21		15:39	
9	04:38	07:45-08:31/46	05:31	07:32-08:53/81	06:33	07:49-08:21/32	07:33	08:04-08:24/20	07:40		08:37	14:01-14:03/2
	22:03	05:15-05:36/21	21:11	06:40-07:21/41	19:53	07:04-07:24/20	18:32		16:19		15:39	10:40-11:23/43
10	04:39	07:44-08:31/47	05:33	07:31-08:52/81	06:35	07:53-08:16/23	07:36	08:05-08:22/17	07:42		08:38	13:59-14:05/6
	22:02	05:16-05:36/20	21:08	06:39-07:20/41	19:50	07:04-07:23/19	18:30		16:17		15:39	10:40-11:23/43
11	04:40	07:44-08:32/48	05:35	07:31-08:53/82	06:37	08:01-08:07/6	07:38	08:07-08:19/12	07:44		08:39	13:58-14:06/8
	22:01	05:17-05:36/19	21:06	06:38-07:20/42	19:47	07:06-07:23/17	18:27		16:15		15:38	10:40-11:23/43
12	04:42	07:43-08:33/50	05:37	07:31-08:53/82	06:39	07:08-07:22/14	07:40		07:46		08:40	13:58-14:08/10
	22:00	05:19-05:37/18	21:04	06:38-07:21/43	19:45		18:24		16:13		15:38	10:41-11:24/43
13	04:43	07:43-08:35/52	05:39	07:31-08:53/82	06:41	07:10-07:21/11	07:42		07:48		08:42	13:58-14:09/11
	21:59	05:20-05:36/16	21:01	06:38-07:21/43	19:42		18:22		16:11		15:38	10:41-11:24/43
14	04:45	07:42-08:35/53	05:41	07:31-08:53/82	06:43	07:12-07:20/8	07:44		07:51		08:43	13:57-14:10/13
	21:58	05:21-05:36/15	20:59	06:38-07:21/43	19:39		18:19		16:09		15:38	10:42-11:24/42
15	04:46	07:41-08:36/55	05:43	07:31-08:53/82	06:45	07:14-07:18/4	07:46		07:53	10:46-10:59/13	08:44	13:58-14:10/12
	21:57	05:22-05:35/13	20:57	06:38-07:21/43	19:37		18:17		16:07		15:38	10:42-11:25/43
16	04:47	07:42-08:38/56	05:45	07:30-08:52/82	06:47		07:48		07:55	10:44-11:03/19	08:45	13:58-14:11/13
	21:55	05:24-05:35/11	20:54	06:38-07:20/42	19:34		18:14		16:06		15:38	10:42-11:25/43
17	04:49	07:41-08:38/57	05:47	07:30-08:52/82	06:49		07:50		07:57	10:42-11:05/23	08:46	13:58-14:12/14
	21:54	05:25-05:34/9	20:52	06:38-07:19/41	19:31		18:12		16:04		15:38	10:43-11:26/43
18	04:51	07:40-08:39/59	05:49	07:30-08:52/82	06:51		07:52		07:59	10:41-11:07/26	08:46	13:58-14:13/15
	21:52	05:27-05:34/7	20:49	06:38-07:19/41	19:28		18:09		16:02		15:38	10:44-11:26/42
19	04:52	07:40-08:40/60	05:51	07:30-08:51/81	06:53		07:54		08:01	10:40-11:08/28	08:47	13:59-14:13/14
	21:51	05:28-05:33/5	20:47	06:38-07:18/40	19:26		18:07		16:01		15:38	10:44-11:27/43
20	04:54	07:39-08:41/62	05:53	07:30-08:51/81	06:55		07:57		08:03	10:39-11:09/30	08:48	13:59-14:13/14
	21:49	05:30-05:32/2	20:45	06:37-07:17/40	19:23		18:04		15:59		15:38	10:44-11:27/43
21	04:55	07:39-08:42/63	05:55	07:31-08:51/80	06:57		07:59		08:05	10:38-11:10/32	08:48	14:00-14:14/14
	21:48		20:42	06:37-07:17/40	19:20		18:02		15:57		15:39	10:45-11:28/43
22	04:57	07:39-08:43/64	05:57	07:31-08:50/79	06:59		08:01		08:07	10:38-11:12/34	08:49	14:00-14:14/14
	21:46		20:40	06:36-07:16/40	19:18		17:59		15:56		15:39	10:45-11:28/43
23	04:59	07:38-08:43/65	05:59	07:31-08:50/79	07:01		08:03		08:09	10:37-11:13/36	08:50	14:01-14:15/14
	21:45		20:37	06:35-07:15/40	19:15		17:57		15:54		15:40	10:46-11:29/43
24	05:01	07:38-08:45/67	06:01	07:32-08:49/77	07:03	08:14-08:21/7	08:05		08:11	10:37-11:13/36	08:50	14:01-14:15/14
	21:43		20:35	06:35-07:13/38	19:12		17:54		15:53		15:40	10:46-11:29/43
25	05:02	07:36-08:45/69	06:03	07:31-08:48/77	07:05	08:10-08:24/14	07:07		08:13	10:36-11:14/38	08:50	14:01-14:16/15
	21:41		20:32	06:35-07:11/36	19:10		16:52		15:52		15:41	10:47-11:29/42
26	05:04	07:36-08:46/70	06:05	07:31-08:47/76	07:07	08:08-08:26/18	07:09		08:15	10:37-11:16/39	08:51	14:02-14:16/14
	21:39	06:55-07:05/10	20:29	06:35-07:09/34	19:07		16:50		15:50		15:42	10:47-11:29/42
27	05:06	07:36-08:47/71	06:07	07:32-08:46/74	07:09	08:07-08:29/22	07:12		08:17	10:37-11:16/39	08:51	14:02-14:16/14
	21:37	06:53-07:08/15	20:27	06:37-07:07/30	19:04		16:47		15:49		15:42	10:47-11:30/43
28	05:08	07:35-08:47/72	06:09	07:33-08:45/72	07:11	08:05-08:29/24	07:14		08:19	10:37-11:17/40	08:51	14:03-14:16/13
	21:36	06:50-07:10/20	20:24	06:39-07:04/25	19:01		16:45		15:48		15:43	10:48-11:30/42
29	05:10	07:35-08:48/73	06:11	07:33-08:44/71	07:13	08:04-08:30/26	07:16		08:21	10:37-11:17/40	08:51	14:04-14:16/12
	21:34	06:49-07:12/23	20:22	06:41-06:52/11	18:59		16:43		15:47		15:44	10:48-11:31/43
30	05:12	07:35-08:49/74	06:13	07:34-08:43/69	07:15	08:03-08:30/27	07:18		08:22	10:37-11:18/41	08:51	14:05-14:17/12
	21:32	06:48-07:13/25	20:19	06:43-06:51/8	18:56		16:40		15:46		15:45	10:49-11:32/43
31	05:13	07:34-08:49/75	06:15	07:35-08:41/66			07:20				08:51	14:07-14:17/10
	21:30	06:46-07:14/28	20:16	06:45-06:48/3			16:38				15:46	10:50-11:32/42
Potential sun hours	529		469		385		324		247		216	
Sum of minutes with flicker	2204		3524		784		263		514		1597	

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:

25/06/2024 18:19/4.0.540

## SHADOW - Calendar per WTG

WTG: E6 - Siemens Gamesa SG 7.0-170 7000 170.0 !OI hub: 165.0 m (TOT: 250.0 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
434	458	529	455	479	767	770	921	1,193	1,059	818	546	8,428

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

	January	February	March	April	May	June
1	08:51 15:48	08:15 09:11-09:40/29 16:45	07:11 17:47	06:49 19:53	05:32 20:55	04:36 05:10-05:15/5 21:52
2	08:50 15:49	08:13 09:12-09:40/28 16:47	07:08 17:49	06:46 19:55	05:30 20:57	04:34 05:09-05:16/7 21:54
3	08:50 15:50	08:11 09:13-09:40/27 16:49	07:05 17:52	06:43 19:57	05:28 20:59	04:33 05:08-05:16/8 21:55
4	08:50 15:52	08:09 09:14-09:39/25 16:52	07:03 17:54	06:41 19:59	05:25 21:01	04:32 05:07-05:17/10 21:56
5	08:49 15:53	08:07 09:15-09:39/24 16:54	07:00 17:56	06:38 20:01	05:23 21:03	04:31 05:07-05:18/11 21:58
6	08:49 15:55	08:05 09:15-09:37/22 16:56	06:58 17:58	06:35 20:03	05:21 21:06	04:31 05:06-05:18/12 21:59
7	08:48 15:56	08:02 09:17-09:36/19 16:58	06:55 18:00	06:33 20:05	05:19 21:08	04:30 05:05-05:18/13 22:00
8	08:47 15:58	08:00 09:19-09:35/16 17:01	06:53 18:02	06:30 20:07	05:17 21:10	04:29 05:05-05:19/14 22:01
9	08:47 15:59	07:58 09:21-09:32/11 17:03	06:50 18:05	06:27 20:09	05:14 21:12	04:28 05:04-05:19/15 22:02
10	08:46 16:01	07:56 17:05	06:47 18:07	06:25 20:12	05:12 21:14	04:28 05:04-05:20/16 22:03
11	08:45 16:03	07:54 08:23-08:25/2 17:07	06:45 18:09	06:22 20:14	05:10 21:16	04:27 05:03-05:20/17 22:04
12	08:44 16:04	07:52 08:20-08:27/7 17:10	06:42 18:11	06:19 20:16	05:08 21:18	04:27 05:03-05:20/17 22:05
13	08:43 16:06	07:49 08:18-08:30/12 17:12	06:39 18:13	06:17 20:18	05:06 21:20	04:26 05:03-05:21/18 22:06
14	08:42 09:19-09:23/4 16:08	07:47 08:15-08:30/15 17:14	06:37 18:15	06:14 20:20	05:04 21:21	04:26 05:02-05:21/19 22:07
15	08:41 09:17-09:27/10 16:10	07:45 08:13-08:32/19 17:16	06:34 18:17	06:12 20:22	05:02 21:23	04:25 05:02-05:21/19 22:07
16	08:40 09:15-09:29/14 16:12	07:42 08:10-08:32/22 17:19	06:31 18:19	06:09 20:24	05:00 21:25	04:25 05:02-05:21/19 22:08
17	08:39 09:14-09:31/17 16:13	07:40 08:09-08:33/24 17:21	06:29 18:22	06:07 20:26	04:58 21:27	04:25 05:02-05:22/20 22:08
18	08:37 09:13-09:32/19 16:15	07:38 08:08-08:33/25 17:23	06:26 18:24	06:04 20:28	04:57 21:29	04:25 05:02-05:22/20 22:09
19	08:36 09:12-09:33/21 16:17	07:35 08:09-08:33/24 17:25	06:23 18:26	06:01 20:30	04:55 21:31	04:25 05:02-05:22/20 22:09
20	08:35 09:12-09:35/23 16:19	07:33 08:08-08:33/25 17:28	06:21 18:28	05:59 20:32	04:53 21:33	04:25 05:02-05:22/20 22:10
21	08:33 09:12-09:35/23 16:21	07:31 08:09-08:33/24 17:30	06:18 18:30	05:56 20:34	04:51 21:35	04:25 05:03-05:23/20 22:10
22	08:32 09:11-09:36/25 16:23	07:28 08:09-08:32/23 17:32	06:15 18:32	05:54 20:37	04:50 21:36	04:25 05:03-05:23/20 22:10
23	08:30 09:11-09:37/26 16:26	07:26 08:10-08:32/22 17:34	06:13 18:34	05:51 20:39	04:48 21:38	04:25 05:03-05:23/20 22:10
24	08:29 09:11-09:38/27 16:28	07:23 08:10-08:30/20 17:36	06:10 18:36	05:49 20:41	04:46 21:40	04:26 05:03-05:23/20 22:10
25	08:27 09:11-09:39/28 16:30	07:21 08:11-08:28/17 17:39	06:07 18:38	05:47 20:43	04:45 21:42	04:26 05:04-05:24/20 22:10
26	08:25 09:11-09:39/28 16:32	07:18 08:13-08:27/14 17:41	06:05 18:40	05:44 20:45	04:43 21:43	04:27 05:04-05:24/20 22:10
27	08:24 09:11-09:40/29 16:34	07:16 08:16-08:24/8 17:43	06:02 18:42	05:42 20:47	04:42 21:45	04:27 05:05-05:24/19 22:10
28	08:22 09:11-09:40/29 16:36	07:13 17:45	05:59 18:44	05:39 20:49	04:41 21:46	04:28 05:05-05:24/19 22:10
29	08:20 09:11-09:40/29 16:38		06:57 19:47	05:37 20:51	04:39 21:48	04:28 05:06-05:24/18 22:10
30	08:18 09:12-09:41/29 16:41		06:54 19:49	05:35 20:53	04:38 21:50	04:29 05:07-05:25/18 22:09
31	08:16 09:12-09:41/29 16:43		06:51 19:51		04:37 05:11-05:14/3 21:51	
Potential sun hours	235	266	366	426	508	529
Sum of minutes with flicker	410	504	0	0	3	494

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: E6 - Siemens Gamesa SG 7.0-170 7000 170.0 !OI hub: 165.0 m (TOT: 250.0 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
434	458	529	455	479	767	770	921	1,193	1,059	818	546	8,428

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

	July	August	September	October	November	December
1	04:30 05:07-05:24/17 22:09	05:15 21:28	06:17 20:14	07:17 18:53	07:22 16:36	08:24 15:45
2	04:31 05:08-05:24/16 22:08	05:17 21:26	06:19 20:11	07:19 18:51	07:25 08:50-09:02/12 16:34	08:26 15:44
3	04:31 05:09-05:25/16 22:08	05:19 21:24	06:21 20:09	07:21 18:48	07:27 08:49-09:05/16 16:31	08:27 15:43
4	04:32 05:10-05:25/15 22:07	05:21 21:21	06:23 20:06	07:23 18:45	07:29 08:47-09:06/19 16:29	08:29 15:42
5	04:33 05:11-05:25/14 22:07	05:23 21:19	06:25 20:03	07:25 18:43	07:31 08:45-09:07/22 16:27	08:31 15:41
6	04:34 05:12-05:25/13 22:06	05:25 21:17	06:27 20:01	07:27 18:40	07:33 08:45-09:09/24 16:25	08:32 15:41
7	04:35 05:13-05:25/12 22:05	05:27 21:15	06:29 19:58	07:29 18:37	07:35 08:44-09:09/25 16:23	08:34 15:40
8	04:37 05:14-05:24/10 22:04	05:29 21:13	06:31 19:55	07:31 18:35	07:38 08:44-09:11/27 16:21	08:35 15:39
9	04:38 05:15-05:24/9 22:03	05:31 21:11	06:33 19:53	07:33 18:32	07:40 08:43-09:11/28 16:19	08:36 15:39
10	04:39 05:16-05:23/7 22:02	05:33 21:08	06:35 19:50	07:36 18:30	07:42 08:42-09:11/29 16:17	08:38 15:39
11	04:40 05:17-05:23/6 22:01	05:35 21:06	06:37 19:47	07:38 18:27	07:44 08:43-09:12/29 16:15	08:39 15:38
12	04:42 05:19-05:23/4 22:00	05:37 21:04	06:39 19:45	07:40 18:24	07:46 08:42-09:12/30 16:13	08:40 15:38
13	04:43 05:20-05:22/2 21:59	05:39 21:01	06:41 19:42	07:42 18:22	07:48 08:43-09:12/29 16:11	08:41 15:38
14	04:45 21:58	05:41 20:59	06:43 19:39	07:44 18:19	07:51 08:43-09:12/29 16:09	08:43 15:38
15	04:46 21:56	05:43 20:57	06:45 19:36	07:46 08:47-08:58/11 18:17	07:53 08:43-09:12/29 16:07	08:44 15:38
16	04:47 21:55	05:45 20:54	06:47 19:34	07:48 08:44-09:00/16 18:14	07:55 08:44-09:12/28 16:06	08:45 15:38
17	04:49 21:54	05:47 20:52	06:49 19:31	07:50 08:43-09:01/18 18:12	07:57 08:44-09:12/28 16:04	08:45 15:38
18	04:51 21:52	05:49 20:49	06:51 19:28	07:52 08:41-09:02/21 18:09	07:59 08:45-09:12/27 16:02	08:46 15:38
19	04:52 21:51	05:51 20:47	06:53 19:26	07:54 08:41-09:03/22 18:07	08:01 08:46-09:12/26 16:01	08:47 15:38
20	04:54 21:49	05:53 20:44	06:55 19:23	07:57 08:40-09:03/23 18:04	08:03 08:46-09:11/25 15:59	08:48 15:38
21	04:56 21:48	05:55 20:42	06:57 19:20	07:59 08:39-09:03/24 18:02	08:05 08:47-09:10/23 15:57	08:48 15:39
22	04:57 21:46	05:57 20:39	06:59 19:18	08:01 08:38-09:03/25 17:59	08:07 08:48-09:11/23 15:56	08:49 15:39
23	04:59 21:44	05:59 20:37	07:01 19:15	08:03 08:39-09:03/24 17:57	08:09 08:49-09:10/21 15:54	08:49 15:40
24	05:01 21:43	06:01 20:34	07:03 19:12	08:05 08:39-09:03/24 17:54	08:11 08:50-09:09/19 15:53	08:50 15:40
25	05:02 21:41	06:03 20:32	07:05 19:10	07:07 07:39-08:02/23 16:52	08:13 08:51-09:08/17 15:52	08:50 15:41
26	05:04 21:39	06:05 20:29	07:07 19:07	07:09 07:41-08:02/21 16:50	08:15 08:53-09:07/14 15:50	08:50 15:42
27	05:06 21:37	06:07 20:27	07:09 19:04	07:12 07:43-08:01/18 16:47	08:17 08:56-09:06/10 15:49	08:51 15:42
28	05:08 21:36	06:09 20:24	07:11 19:01	07:14 07:45-07:59/14 16:45	08:19 08:59-09:04/5 15:48	08:51 15:43
29	05:10 21:34	06:11 20:22	07:13 18:59	07:16 07:48-07:59/11 16:43	08:21 15:47	08:51 15:44
30	05:12 21:32	06:13 20:19	07:15 18:56	07:18 07:50-07:56/6 16:40	08:22 15:46	08:51 15:45
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	141	0	0	301	614	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:

25/06/2024 18:19/4.0.540

## SHADOW - Calendar per WTG

WTG: E7 - Siemens Gamesa SG 7.0-170 7000 170.0 !O! hub: 165.0 m (TOT: 250.0 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
434	458	529	455	479	767	770	921	1,193	1,059	818	546	8,428

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

	January	February	March	April	May	June
1	08:51 12:35-13:07/32 15:48 10:15-11:17/62	08:15 16:45	07:11 08:05-08:31/26 17:47 07:37-07:54/17	06:49 19:53	05:32 06:00-06:07/7 20:55 06:19-07:18/59	04:36 21:52
2	08:50 12:36-13:08/32 15:49 10:16-11:18/62	08:13 08:43-08:44/1 16:47	07:08 07:34-07:55/21 17:50 08:15-08:27/12	06:46 19:55	05:30 05:58-06:08/10 20:57 06:20-07:17/57	04:35 21:54
3	08:50 12:36-13:08/32 15:50 10:17-11:18/61	08:11 08:41-08:47/6 16:50	07:06 07:33-07:56/23 17:52	06:43 07:20-07:32/12 19:57	05:28 05:56-06:09/13 20:59 06:22-07:17/55	04:33 21:55
4	08:50 12:37-13:08/31 15:52 10:17-11:19/62	08:09 08:39-08:49/10 16:52	07:03 07:32-07:56/24 17:54	06:41 07:16-07:36/20 19:59	05:25 05:54-06:10/16 21:02 06:24-07:16/52	04:32 21:57
5	08:49 12:38-13:08/30 15:53 10:19-11:20/61	08:07 08:37-08:50/13 16:54	07:00 07:31-07:55/24 17:56	06:38 07:12-07:37/25 20:01	05:23 05:52-06:10/18 21:04 06:25-07:15/50	04:32 21:58
6	08:49 12:39-13:08/29 15:55 10:20-11:20/60	08:05 08:34-08:51/17 16:56	06:58 07:32-07:56/24 17:58	06:35 07:10-07:40/30 20:03	05:21 05:50-06:10/20 21:06 06:25-07:14/49	04:31 21:59
7	08:48 12:40-13:08/28 10:36-11:20/44 15:56 10:21-10:35/14	08:03 08:32-08:52/20 16:58	06:55 07:31-07:55/24 18:00	06:33 07:08-07:40/32 20:05	05:19 05:48-06:11/23 21:08 06:25-07:13/48	04:30 22:00
8	08:47 12:41-13:08/27 10:36-11:21/45 15:58 10:22-10:35/13	08:00 08:30-08:53/23 17:01	06:53 07:31-07:54/23 18:03	06:30 07:06-07:41/35 20:07	05:17 05:46-06:10/24 21:10 06:25-07:12/47	04:29 22:01
9	08:47 12:42-13:08/26 10:37-11:21/44 15:59 10:24-10:34/10	07:58 08:30-08:52/22 17:03	06:50 07:32-07:54/22 18:05	06:27 07:05-07:42/37 20:10	05:15 05:44-06:10/26 21:12 06:26-07:11/45	04:28 22:02
10	08:46 12:43-13:07/24 10:37-11:21/44 16:01 10:26-10:33/7	07:56 08:30-08:53/23 17:05	06:47 07:33-07:52/19 18:07	06:25 07:04-07:42/38 20:12	05:12 05:42-06:10/28 21:14 06:26-07:09/43	04:28 22:03
11	08:45 12:44-13:07/23 16:03 10:38-11:22/44	07:54 08:30-08:53/23 17:07	06:45 07:33-07:51/18 18:09	06:22 07:03-07:43/40 20:14	05:10 05:41-06:09/28 21:16 06:27-07:07/40	04:27 22:04
12	08:44 12:46-13:07/21 16:04 10:39-11:22/43	07:52 08:20-08:28/8 17:10 08:30-08:53/23	06:42 07:36-07:49/13 18:11	06:20 06:58-07:43/45 20:16	05:08 05:40-06:09/29 21:18 06:27-07:04/37	04:27 22:05
13	08:43 12:47-13:05/18 16:06 10:39-11:22/43	07:49 08:18-08:53/35 17:12	06:39 07:39-07:45/6 18:13	06:17 06:54-07:43/49 20:18	05:06 05:40-06:08/28 21:20 06:28-07:00/32	04:26 22:06
14	08:42 12:49-13:04/15 16:08 10:39-11:22/43	07:47 08:15-08:52/37 17:14	06:37 18:15	06:14 06:51-07:43/52 20:20	05:04 05:41-06:08/27 21:22 06:30-06:56/26	04:26 22:07
15	08:41 12:52-13:03/11 16:10 10:40-11:23/43	07:45 08:13-08:51/38 17:16	06:34 18:17	06:12 06:44-07:43/59 20:22	05:02 05:41-06:07/26 21:23 06:31-06:54/23	04:25 22:07
16	08:40 10:41-11:22/41 16:12	07:42 08:10-08:50/40 17:19	06:31 18:19	06:09 06:40-07:42/62 20:24	05:00 05:41-06:06/25 21:25 06:32-06:52/20	04:25 22:08
17	08:39 10:42-11:23/41 16:14	07:40 08:08-08:49/41 17:21	06:29 18:22	06:07 06:38-07:42/64 20:26	04:59 05:42-06:06/24 21:27 06:34-06:51/17	04:25 22:08
18	08:37 10:42-11:22/40 16:15	07:38 08:05-08:46/41 17:23	06:26 18:24	06:04 06:36-07:41/65 20:28 06:30-06:35/5	04:57 05:43-06:04/21 21:29 06:36-06:49/13	04:25 22:09
19	08:36 10:42-11:22/40 16:17	07:35 08:03-08:37/34 17:25	06:23 18:26	06:02 06:28-07:41/73 20:30	04:55 05:43-06:02/19 21:31 06:39-06:45/6	04:25 22:09
20	08:35 10:44-11:22/38 16:19	07:33 08:00-08:37/37 17:28	06:21 18:28	05:59 06:25-07:40/75 20:32	04:53 05:45-05:59/14 21:33	04:25 22:10
21	08:33 10:44-11:22/38 16:22	07:31 07:59-08:38/39 17:30	06:18 18:30	05:57 06:23-07:39/76 20:35	04:51 05:45-05:56/11 21:35	04:25 22:10
22	08:32 10:45-11:21/36 16:24	07:28 07:59-08:37/38 17:32	06:15 18:32	05:54 06:21-07:39/78 20:37	04:50 05:48-05:55/7 21:36	04:25 22:10
23	08:30 10:46-11:21/35 16:26	07:26 07:59-08:37/38 17:34	06:13 18:34	05:52 06:18-07:37/79 20:39	04:48 21:38	04:26 22:10
24	08:29 10:48-11:21/33 16:28	07:23 07:59-08:37/38 17:36	06:10 18:36	05:49 06:18-07:36/78 20:41	04:47 21:40	04:26 22:10
25	08:27 10:49-11:20/31 16:30	07:21 08:00-08:36/36 17:39	06:07 18:38	05:47 06:18-07:35/77 20:43	04:45 21:42	04:26 22:10
26	08:25 10:50-11:19/29 16:32	07:18 08:00-08:35/35 17:41 07:45-07:49/4	06:05 18:40	05:44 06:17-07:33/76 20:45	04:44 21:43	04:27 22:10
27	08:24 10:52-11:17/25 16:34	07:16 08:01-08:34/33 17:43 07:42-07:51/9	06:02 18:42	05:42 06:17-07:31/74 20:47	04:42 21:45	04:27 22:10
28	08:22 10:54-11:16/22 16:36	07:13 08:03-08:33/30 17:45 07:40-07:54/14	05:59 18:45	05:39 06:18-07:29/71 20:49	04:41 21:46	04:28 22:10
29	08:20 10:57-11:14/17 16:38		06:57 19:47	05:37 06:18-07:27/69 20:51	04:39 21:48	04:28 22:10
30	08:18 11:01-11:10/9 16:41		06:54 19:49	05:35 06:18-07:20/62 20:53 06:02-06:04/2	04:38 21:50	04:29 22:09
31	08:17 16:43		06:51 19:51		04:37 21:51	
Potential sun hours	235	266	366	426	508	529
Sum of minutes with flicker	1659	806	296	1560	1163	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:

25/06/2024 18:19/4.0.540

## SHADOW - Calendar per WTG

WTG: E7 - Siemens Gamesa SG 7.0-170 7000 170.0 !O! hub: 165.0 m (TOT: 250.0 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
434	458	529	455	479	767	770	921	1,193	1,059	818	546	8,428

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

	July	August	September	October	November	December
1	04:30 22:09	05:15 05:51-06:19/28 21:28 06:37-07:16/39	06:17 07:02-07:42/40 20:14	07:17 08:16-08:27/11 18:53	07:22 07:59-08:22/23 16:36	08:24 12:27-12:49/22 15:45 10:20-11:04/44
2	04:31 22:08	05:17 05:51-06:20/29 21:26 06:37-07:18/41	06:19 07:03-07:41/38 20:11	07:19 08:13-08:29/16 18:51	07:25 07:59-08:22/23 16:34	08:26 12:26-12:51/25 10:20-11:04/44 15:44 10:09-10:15/6
3	04:31 22:08	05:19 05:53-06:20/27 21:24 06:36-07:20/44	06:21 07:03-07:40/37 20:09	07:21 08:11-08:30/19 18:48	07:27 08:00-08:22/22 16:31	08:27 12:25-12:51/26 10:21-11:05/44 15:43 10:08-10:18/10
4	04:32 22:07	05:21 05:55-06:21/26 21:22 06:36-07:21/45	06:23 07:04-07:39/35 20:06	07:23 08:10-08:31/21 18:45	07:29 08:02-08:21/19 16:29	08:29 12:25-12:52/27 10:20-11:05/45 15:42 10:06-10:19/13
5	04:33 22:07	05:23 05:56-06:20/24 21:19 06:35-07:22/47	06:25 07:04-07:36/32 20:03	07:25 08:09-08:31/22 18:43	07:31 08:05-08:21/16 16:27	08:31 12:25-12:53/28 10:21-11:05/44 15:41 10:06-10:20/14
6	04:34 22:06	05:25 05:58-06:20/22 21:17 06:34-07:23/49	06:27 07:05-07:35/30 20:01	07:27 08:08-08:31/23 18:40	07:33 08:07-08:20/13 16:25	08:32 12:25-12:54/29 15:41 10:06-11:06/60
7	04:36 22:05	05:27 06:00-06:20/20 21:15 06:34-07:24/50	06:29 07:07-07:33/26 19:58	07:29 08:07-08:31/24 18:38	07:36 08:09-08:18/9 16:23	08:34 12:24-12:54/30 15:40 10:05-11:06/61
8	04:37 22:04	05:29 06:02-06:19/17 21:13 06:34-07:25/51	06:31 07:10-07:30/20 19:55	07:31 08:06-08:31/25 18:35	07:38 08:12-08:18/6 16:21	08:35 12:25-12:56/31 15:40 10:05-11:07/62
9	04:38 22:03	05:31 06:04-06:19/15 21:11 06:33-07:26/53	06:33 07:14-07:27/13 19:53	07:34 08:07-08:31/24 18:32	07:40 08:14-08:15/1 16:19	08:37 12:25-12:56/31 15:39 10:06-11:08/62
10	04:39 22:02	05:33 06:06-06:18/12 21:08 06:31-07:25/54	06:35 19:50	07:36 08:07-08:31/24 18:30	07:42 16:17	08:38 12:25-12:57/32 15:39 10:06-11:08/62
11	04:40 22:01	05:35 06:07-06:16/9 21:06 06:28-07:26/58	06:37 19:47	07:38 08:07-08:30/23 18:27 08:52-08:59/7	07:44 16:15	08:39 12:25-12:57/32 15:38 10:05-11:08/63
12	04:42 22:00	05:37 06:09-06:15/6 21:04 06:27-07:26/59	06:39 19:45	07:40 08:09-08:28/19 18:25 08:48-09:03/15	07:46 10:31-10:41/10 16:13	08:40 12:26-12:59/33 15:38 10:06-11:09/63
13	04:43 21:59	05:39 06:26-07:31/65 21:01 06:11-06:12/1	06:41 19:42	07:42 08:37-09:04/27 18:22 08:11-08:27/16	07:48 10:28-10:46/18 16:11	08:41 12:26-12:59/33 15:38 10:06-11:09/63
14	04:45 21:58	05:41 06:26-07:35/69 20:59	06:43 19:39	07:44 08:34-09:05/31 18:19 08:13-08:25/12	07:51 10:26-10:48/22 16:09	08:43 12:26-13:00/34 15:38 10:06-11:09/63
15	04:46 21:57	05:43 06:25-07:38/73 20:57	06:45 19:37	07:46 08:33-09:07/34 18:17 08:16-08:24/8	07:53 10:24-10:49/25 16:07	08:44 12:26-13:00/34 15:38 10:07-11:09/62
16	04:48 21:55	05:45 06:25-07:39/74 20:54	06:47 19:34	07:48 08:32-09:08/36 18:14	07:55 10:23-10:52/29 16:06	08:45 12:27-13:01/34 15:38 10:07-11:10/63
17	04:49 21:54	05:47 06:25-07:40/75 20:52	06:49 19:31	07:50 08:31-09:08/37 18:12	07:57 10:22-10:53/31 16:04	08:45 12:27-13:01/34 15:38 10:07-11:10/63
18	04:51 21:52	05:49 06:24-07:41/77 20:49	06:51 19:28	07:52 08:30-09:08/38 18:09	07:59 10:22-10:55/33 16:02	08:46 12:28-13:02/34 15:38 10:08-11:11/63
19	04:52 21:51	05:51 06:23-07:42/79 20:47	06:53 19:26	07:54 08:30-09:09/39 18:07	08:01 10:21-10:56/35 16:01	08:47 12:28-13:03/35 15:38 10:09-11:12/63
20	04:54 21:49	05:53 06:24-07:43/79 20:45	06:55 19:23	07:57 08:30-09:08/38 18:04	08:03 10:20-10:56/36 15:59	08:48 12:28-13:03/35 15:38 10:08-11:12/64
21	04:56 06:00-06:02/2 21:48	05:55 06:26-07:44/78 20:42	06:57 19:20	07:59 08:30-09:08/38 18:02	08:05 10:19-10:57/38 15:57	08:48 12:29-13:04/35 15:39 10:09-11:12/63
22	04:57 05:57-06:06/9 21:46	05:57 06:28-07:44/76 20:40	06:59 19:18	08:01 08:31-09:07/36 17:59	08:07 10:20-10:58/38 15:56	08:49 12:29-13:04/35 15:39 10:09-11:12/63
23	04:59 05:55-06:07/12 21:45	05:59 06:30-07:45/75 20:37	07:01 19:15	08:03 08:34-09:08/34 17:57	08:09 10:19-10:59/40 15:55	08:49 12:30-13:05/35 15:40 10:10-11:13/63
24	05:01 05:55-06:12/17 21:43	06:01 06:32-07:45/73 20:35	07:03 19:12	08:05 08:36-09:17/41 17:54	08:11 10:19-10:59/40 15:53	08:50 12:30-13:05/35 15:40 10:10-11:14/64
25	05:03 05:54-06:14/20 21:41	06:03 06:39-07:45/66 20:32 06:34-06:38/4	07:05 19:10	07:07 07:38-08:18/40 16:52	08:13 10:19-11:00/41 15:52	08:50 12:31-13:05/34 15:41 10:11-11:14/63
26	05:04 05:53-06:15/22 21:39	06:05 06:40-07:44/64 20:29	07:07 19:07	07:09 07:41-08:20/39 16:50	08:15 10:20-11:01/41 15:50	08:51 12:31-13:05/34 15:42 10:11-11:14/63
27	05:06 05:53-06:17/24 21:37	06:07 06:42-07:44/62 20:27	07:09 19:04	07:12 07:43-08:21/38 16:47	08:17 12:32-12:42/10 15:49 10:20-11:02/42	08:51 12:31-13:06/35 15:43 10:12-11:15/63
28	05:08 05:51-06:17/26 21:36	06:09 06:46-07:44/58 20:24	07:11 19:02	07:14 07:45-08:21/36 16:45	08:19 12:30-12:44/14 15:48 10:20-11:02/42	08:51 12:32-13:06/34 15:43 10:12-11:15/63
29	05:10 05:51-06:18/27 21:34	06:11 06:52-07:44/52 20:22	07:13 18:59	07:16 07:48-08:22/34 16:43	08:21 12:28-12:46/18 15:47 10:20-11:03/43	08:51 12:33-13:06/33 15:44 10:13-11:16/63
30	05:12 05:51-06:19/28 21:32	06:13 06:54-07:43/49 20:19	07:15 18:56	07:18 07:50-07:57/7 16:40 07:59-08:22/23	08:22 12:27-12:48/21 15:46 10:20-11:03/43	08:51 12:34-13:07/33 15:45 10:14-11:17/63
31	05:14 05:52-06:20/28 21:30	06:15 06:59-07:43/44 20:16	07:15 18:56	07:20 08:00-08:23/23 16:38	15:46 10:20-11:03/43	08:51 12:35-13:08/33 15:46 10:15-11:17/62
Potential sun hours	529	469	385	324	247	216
Sum of minutes with flicker	364	2118	271	978	842	2889

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:

25/06/2024 18:19/4.0.540

## SHADOW - Calendar per WTG

WTG: E8 - Siemens Gamesa SG 7.0-170 7000 170.0 !O! hub: 165.0 m (TOT: 250.0 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
434	458	529	455	479	767	770	921	1,193	1,059	818	546	8,428

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

	January			February			March			April			May			June		
1	08:51	09:30-09:44/14	15:48	08:15	07:11	16:45	07:47	17:47	19:53	05:32	20:55	21:52	04:36	05:29-06:06/37				
2	08:50	09:30-09:45/15	15:49	08:13	07:08	16:47	07:50	17:50	19:55	05:30	20:57	21:54	04:35	05:29-06:05/36				
3	08:50	09:29-09:45/16	15:50	08:11	07:05	16:49	07:52	17:52	19:57	05:28	20:59	21:55	04:33	05:29-06:05/36				
4	08:50	09:28-09:45/17	15:52	08:09	07:03	16:52	07:54	17:54	19:59	05:25	21:01	21:56	04:32	05:29-06:06/37				
5	08:49	09:28-09:47/19	15:53	08:07	07:00	16:54	07:56	17:56	20:01	05:23	21:03	21:58	04:31	05:29-06:07/38				
6	08:49	09:27-09:47/20	15:55	08:05	06:58	16:56	07:58	17:58	20:03	05:21	21:06	21:59	04:31	05:28-06:08/40				
7	08:48	09:26-09:48/22	15:56	08:02	06:55	16:58	07:59	18:00	20:05	05:19	21:08	22:00	04:30	05:28-06:08/40				
8	08:47	09:26-09:48/22	15:58	08:00	06:53	17:01	07:59	18:02	20:07	05:17	21:10	22:01	04:29	05:28-06:09/41				
9	08:47	09:26-09:49/23	15:59	07:58	06:50	17:03	07:59	18:05	20:09	05:15	21:12	22:02	04:28	05:27-06:09/42				
10	08:46	09:27-09:50/23	16:01	07:56	06:47	17:05	07:59	18:07	20:12	05:12	21:14	22:03	04:28	05:27-06:10/43				
11	08:45	09:27-09:50/23	16:03	07:54	06:45	17:07	07:59	18:09	20:14	05:10	21:16	22:04	04:27	05:27-06:10/43				
12	08:44	09:28-09:51/23	16:04	07:52	06:42	17:10	07:59	18:11	20:16	05:08	21:18	22:05	04:27	05:27-06:11/44				
13	08:43	09:27-09:51/24	16:06	07:49	06:39	17:12	07:59	18:13	20:18	05:06	21:20	22:06	04:26	05:27-06:11/44				
14	08:42	09:28-09:51/23	16:08	07:47	06:37	17:14	07:59	18:15	20:20	05:04	21:21	22:06	04:26	05:26-06:11/45				
15	08:41	09:29-09:52/23	16:10	07:45	06:34	17:16	07:59	18:17	20:22	05:02	21:23	22:07	04:25	05:27-06:11/44				
16	08:40	09:29-09:52/23	16:12	07:42	06:31	17:19	07:59	18:19	20:24	05:00	21:25	22:08	04:25	05:27-06:12/45				
17	08:39	09:30-09:52/22	16:14	07:40	06:29	17:21	07:59	18:22	20:26	04:59	21:27	22:08	04:25	05:27-06:12/45				
18	08:37	09:30-09:52/22	16:15	07:38	06:26	17:23	07:59	18:24	20:28	04:57	21:29	22:09	04:25	05:27-06:12/45				
19	08:36	09:30-09:52/22	16:17	07:35	06:23	17:25	07:59	18:26	20:30	04:55	21:31	22:09	04:25	05:27-06:13/46				
20	08:35	09:31-09:52/21	16:19	07:33	06:21	17:28	07:59	18:28	20:32	04:53	21:33	22:10	04:25	05:27-06:13/46				
21	08:33	09:32-09:52/20	16:21	07:31	06:18	17:30	07:59	18:30	20:34	04:51	21:35	22:10	04:25	05:27-06:13/46				
22	08:32	09:33-09:51/18	16:24	07:28	06:15	17:32	07:59	18:32	20:37	04:50	21:36	22:10	04:25	05:28-06:14/46				
23	08:30	09:34-09:50/16	16:26	07:26	06:13	17:34	07:59	18:34	20:39	04:48	21:38	22:10	04:25	05:28-06:14/46				
24	08:29	09:36-09:50/14	16:28	07:23	06:10	17:36	07:59	18:36	20:41	04:47	21:40	22:10	04:26	05:28-06:14/46				
25	08:27	09:38-09:49/11	16:30	07:21	06:07	17:39	07:59	18:38	20:43	04:45	21:42	22:10	04:26	05:29-06:14/45				
26	08:25	09:41-09:46/5	16:32	07:18	06:05	17:41	07:59	18:40	20:45	04:44	21:43	22:10	04:27	05:29-06:14/45				
27	08:24		16:34	07:16	06:02	17:43	07:59	18:42	20:47	04:42	21:45	22:10	04:27	05:30-06:15/45				
28	08:22		16:36	07:13	05:59	17:45	07:59	18:45	20:49	04:41	21:46	22:10	04:28	05:30-06:14/44				
29	08:20		16:38		06:57		07:59	19:47	20:51	04:39	21:48	22:10	04:28	05:30-06:14/44				
30	08:18		16:41		06:54		07:59	19:49	20:53	04:38	21:49	22:09	04:29	05:31-06:15/44				
31	08:16		16:43		06:51		07:59	19:51		04:37	21:51							
Potential sun hours	235			266			366			426			508			529		
Sum of minutes with flicker	501			0			528			509			760			1288		

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:

25/06/2024 18:19/4.0.540

## SHADOW - Calendar per WTG

WTG: E8 - Siemens Gamesa SG 7.0-170 7000 170.0 !O! hub: 165.0 m (TOT: 250.0 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
434	458	529	455	479	767	770	921	1,193	1,059	818	546	8,428

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

	July	August	September	October	November	December
1	04:30 05:31-06:14/43 22:09	05:15 05:51-06:14/23 21:28	06:17 06:47-07:09/22 20:14	07:17 07:46-08:14/28 18:53	07:22 16:36	08:24 09:09-09:32/23 15:45
2	04:31 05:32-06:14/42 22:08	05:17 05:52-06:13/21 21:26	06:19 06:49-07:08/19 20:11	07:19 07:48-08:14/26 18:51	07:25 16:34	08:26 09:10-09:33/23 15:44
3	04:31 05:32-06:14/42 22:08	05:19 05:54-06:12/18 21:24	06:21 06:51-07:06/15 20:09	07:21 07:50-08:13/23 18:48	07:27 16:31	08:27 09:10-09:33/23 15:43
4	04:32 05:33-06:14/41 22:07	05:21 05:56-06:11/15 21:21	06:23 06:53-07:04/11 20:06	07:23 07:52-08:13/21 18:45	07:29 16:29	08:29 09:10-09:33/23 15:42
5	04:33 05:34-06:14/40 22:07	05:23 05:57-06:08/11 21:19	06:25 06:54-07:01/7 20:03	07:25 07:54-08:12/18 18:43	07:31 16:27	08:31 09:11-09:33/22 15:41
6	04:34 05:34-06:14/40 22:06	05:25 21:17	06:27 20:01	07:27 07:56-08:10/14 18:40	07:33 16:25	08:32 09:13-09:33/20 15:41
7	04:36 05:35-06:14/39 22:05	05:27 21:15	06:29 19:58	07:29 07:58-08:08/10 18:38	07:35 16:23	08:34 09:14-09:33/19 15:40
8	04:37 05:36-06:14/38 22:04	05:29 21:13	06:31 19:55	07:31 08:00-08:06/6 18:35	07:38 16:21	08:35 09:16-09:34/18 15:40
9	04:38 05:37-06:13/36 22:03	05:31 21:11	06:33 19:53	07:33 18:32	07:40 16:19	08:36 09:18-09:34/16 15:39
10	04:39 05:37-06:13/36 22:02	05:33 21:08	06:35 19:50	07:36 18:30	07:42 16:17	08:38 09:19-09:34/15 15:39
11	04:40 05:37-06:13/36 22:01	05:35 21:06	06:37 19:47	07:38 18:27	07:44 16:15	08:39 09:20-09:34/14 15:38
12	04:42 05:38-06:14/36 22:00	05:37 21:04	06:39 19:45	07:40 18:24	07:46 16:13	08:40 09:22-09:35/13 15:38
13	04:43 05:38-06:15/37 21:59	05:39 21:01	06:41 19:42	07:42 18:22	07:48 16:11	08:41 09:23-09:35/12 15:38
14	04:45 05:38-06:15/37 21:58	05:41 20:59	06:43 19:39	07:44 18:19	07:51 16:09	08:43 10:34-10:37/3 15:38
15	04:46 05:37-06:15/38 21:56	05:43 06:48-06:54/6 20:57	06:45 19:36	07:46 18:17	07:53 16:07	08:44 10:33-10:38/5 15:38
16	04:48 05:38-06:16/38 21:55	05:45 06:45-06:58/13 20:54	06:47 19:34	07:48 18:14	07:55 09:14-09:19/5 16:06	08:45 10:33-10:40/7 15:38
17	04:49 05:38-06:16/38 21:54	05:47 06:42-06:59/17 20:52	06:49 07:41-07:52/11 19:31	07:50 18:12	07:57 09:11-09:22/11 16:04	08:45 10:33-10:41/8 15:38
18	04:51 05:39-06:17/38 21:52	05:49 06:40-07:01/21 20:49	06:51 07:38-07:55/17 19:28	07:52 18:09	07:59 09:10-09:24/14 16:02	08:46 10:33-10:42/9 15:38
19	04:52 05:39-06:17/38 21:51	05:51 06:39-07:02/23 20:47	06:53 07:36-07:56/20 19:26	07:54 18:07	08:01 09:09-09:25/16 16:01	08:47 10:33-10:43/10 15:38
20	04:54 05:40-06:17/37 21:49	05:53 06:39-07:02/23 20:44	06:55 07:35-07:57/22 19:23	07:57 18:04	08:03 09:08-09:26/18 15:59	08:48 10:33-10:43/10 15:38
21	04:56 05:40-06:17/37 21:48	05:55 06:38-07:06/28 20:42	06:57 07:34-08:02/28 19:20	07:59 18:02	08:05 09:07-09:27/20 15:57	08:48 10:34-10:44/10 15:39
22	04:57 05:41-06:18/37 21:46	05:57 06:37-07:08/31 20:39	06:59 07:33-08:03/30 19:18	08:01 17:59	08:07 09:08-09:28/20 15:56	08:49 10:34-10:44/10 15:39
23	04:59 05:41-06:17/36 21:44	05:59 06:37-07:10/33 20:37	07:01 07:31-08:04/33 19:15	08:03 17:57	08:09 09:07-09:29/22 15:54	08:49 10:35-10:45/10 15:40
24	05:01 05:42-06:18/36 21:43	06:01 06:37-07:10/33 20:34	07:03 07:31-08:05/34 19:12	08:05 17:54	08:11 09:07-09:29/22 15:53	08:50 10:35-10:45/10 15:40
25	05:02 05:42-06:17/35 21:41	06:03 06:37-07:11/34 20:32	07:05 07:33-08:07/34 19:10	07:07 16:52	08:13 09:07-09:30/23 15:52	08:50 10:36-10:45/9 15:41
26	05:04 05:43-06:17/34 21:39	06:05 06:36-07:10/34 20:29	07:07 07:36-08:11/35 19:07	07:09 16:50	08:15 09:08-09:31/23 15:50	08:50 10:36-10:45/9 15:42
27	05:06 05:45-06:17/32 21:37	06:07 06:37-07:11/34 20:27	07:09 07:38-08:13/35 19:04	07:12 16:47	08:17 09:08-09:31/23 15:49	08:51 10:37-10:45/8 15:43
28	05:08 05:45-06:16/31 21:36	06:09 06:39-07:11/32 20:24	07:11 07:40-08:14/34 19:01	07:14 16:45	08:19 09:08-09:32/24 15:48	08:51 10:38-10:45/7 15:43
29	05:10 05:48-06:16/28 21:34	06:11 06:41-07:10/29 20:22	07:13 07:42-08:14/32 18:59	07:16 16:43	08:20 09:08-09:32/24 15:47	08:51 10:40-10:44/4 15:44
30	05:12 05:50-06:16/26 21:32	06:13 06:43-07:10/27 20:19	07:15 07:44-08:14/30 18:56	07:18 16:40	08:22 09:09-09:32/23 15:46	08:51 09:31-09:42/11 15:45
31	05:14 05:51-06:16/25 21:30	06:15 06:45-07:10/25 20:16		07:20 16:38		08:51 09:31-09:43/12 15:46
Potential sun hours	529	469	385	324	247	216
Sum of minutes with flicker	1127	531	469	146	288	527

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:

25/06/2024 18:19/4.0.540

## SHADOW - Calendar per WTG

WTG: E9 - Siemens Gamesa SG 7.0-170 7000 170.0 !O! hub: 165.0 m (TOT: 250.0 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
434	458	529	455	479	767	770	921	1,193	1,059	818	546	8,428

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	05:32 20:55	06:23-07:14/51 21:52
2	08:50 15:49	08:13 16:47	07:08 17:49	06:46 19:55	05:30 20:57	06:23-07:14/51 21:54
3	08:50 15:50	08:11 16:49	07:05 17:52	06:43 19:57	05:28 20:59	06:23-07:14/51 21:55
4	08:50 15:52	08:09 16:52	07:03 17:54	06:41 19:59	05:25 21:01	06:23-07:14/51 21:56
5	08:49 15:53	08:07 16:54	07:00 17:56	06:38 20:01	05:23 21:03	06:22-07:14/52 21:58
6	08:49 15:55	08:04 16:56	06:58 17:58	06:35 20:03	05:21 21:05	06:22-07:14/52 21:59
7	08:48 15:56	08:02 16:58	06:55 18:00	06:33 20:05	05:19 21:07	06:22-07:13/51 22:00
8	08:47 15:58	08:00 17:01	06:52 18:02	06:30 20:07	05:17 21:10	06:23-07:13/50 22:01
9	08:47 15:59	07:58 17:03	06:50 18:05	06:27 20:09	05:14 21:12	06:23-07:12/49 22:02
10	08:46 16:01	07:56 17:05	06:47 18:07	06:25 20:11	05:12 21:14	06:23-07:12/49 22:03
11	08:45 16:03	07:54 17:07	06:45 18:09	06:22 20:14	05:10 21:16	06:23-07:11/48 22:04
12	08:44 16:04	07:52 17:10	06:42 18:11	06:19 20:16	05:08 21:17	06:23-07:10/47 22:05
13	08:43 16:06	07:49 17:12	06:39 18:13	06:17 20:18	05:06 21:19	06:23-07:09/46 22:06
14	08:42 16:08	07:47 17:14	06:37 18:15	06:14 20:20	05:04 21:21	06:25-07:09/44 22:06
15	08:41 16:10	07:45 17:16	06:34 18:17	06:12 20:22	05:02 21:23	06:25-07:08/43 22:07
16	08:40 16:12	07:42 17:19	06:31 18:19	06:09 20:24	05:00 21:25	06:25-07:07/42 22:08
17	08:39 16:14	07:40 17:21	06:29 18:22	06:07 20:26	04:59 21:27	06:26-07:06/40 22:08
18	08:37 16:15	07:38 17:23	06:26 18:24	06:04 20:28	04:57 21:29	06:27-07:05/38 22:09
19	08:36 16:17	07:35 17:25	06:23 18:26	06:02 20:30	04:55 21:31	06:28-07:04/36 22:09
20	08:35 16:19	07:33 17:28	06:21 18:28	05:59 20:32	04:53 21:33	06:29-07:03/34 22:09
21	08:33 16:21	07:30 17:30	06:18 18:30	05:56 20:34	04:51 21:34	06:30-07:01/31 22:10
22	08:32 16:24	07:28 17:32	06:15 18:32	05:54 20:36	04:50 21:36	06:31-06:59/28 22:10
23	08:30 16:26	07:26 17:34	06:13 18:34	05:52 20:39	04:48 21:38	06:32-06:57/25 22:10
24	08:29 16:28	07:23 17:36	06:10 18:36	05:49 20:41	04:47 21:40	06:34-06:53/19 22:10
25	08:27 16:30	07:21 17:39	06:07 18:38	05:47 20:43	04:45 21:41	06:37-06:49/12 22:10
26	08:25 16:32	07:18 17:41	06:05 18:40	05:44 20:45	04:44 21:43	06:40-06:45/5 22:10
27	08:24 16:34	07:16 17:43	06:02 18:42	05:42 20:47	04:42 21:45	06:26-07:14/48 22:10
28	08:22 16:36	07:13 17:45	05:59 18:44	05:39 20:49	04:41 21:46	06:25-07:15/50 22:10
29	08:20 16:38		06:57 19:47	05:37 20:51	04:39 21:48	06:24-07:14/50 22:09
30	08:18 16:41		06:54 19:49	05:35 20:53	04:38 21:49	06:23-07:14/51 22:09
31	08:16 16:43		06:51 19:51		04:37 21:51	07:45-07:46/1 22:09
Potential sun hours	235	266	366	426	508	529
Sum of minutes with flicker	0	0	537	559	1045	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:

25/06/2024 18:19/4.0.540

## SHADOW - Calendar per WTG

WTG: E9 - Siemens Gamesa SG 7.0-170 7000 170.0 !OI hub: 165.0 m (TOT: 250.0 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
434	458	529	455	479	767	770	921	1,193	1,059	818	546	8,428

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

	July	August	September	October	November	December
1	04:30 22:09	05:15 06:33-07:21/48 21:28	06:17 20:14	07:17 07:52-08:17/25 18:53	07:22 16:36	08:24 15:45
2	04:31 22:08	05:17 06:33-07:21/48 21:26	06:19 20:11	07:19 07:52-08:16/24 18:51	07:25 16:34	08:26 15:44
3	04:31 22:08	05:19 06:33-07:22/49 21:24	06:21 20:09	07:21 07:52-08:15/23 18:48	07:27 16:31	08:27 15:43
4	04:32 22:07	05:21 06:33-07:23/50 21:21	06:23 20:06	07:23 07:53-08:14/21 18:45	07:29 16:29	08:29 15:42
5	04:33 22:06	05:23 06:32-07:22/50 21:19	06:25 20:03	07:25 07:54-08:12/18 18:43	07:31 16:27	08:31 15:41
6	04:34 22:06	05:25 06:32-07:23/51 21:17	06:27 20:01	07:27 07:56-08:10/14 18:40	07:33 16:25	08:32 15:41
7	04:36 22:05	05:27 06:32-07:23/51 21:15	06:29 19:58	07:29 07:59-08:06/7 18:37	07:35 16:23	08:34 15:40
8	04:37 22:04	05:29 06:32-07:23/51 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 06:32-07:24/52 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 06:31-07:23/52 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 06:31-07:23/52 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 06:32-07:23/51 21:04	06:39 19:45	07:40 18:24	07:46 16:13	08:40 15:38
13	04:43 21:59	05:39 06:32-07:23/51 21:01	06:41 07:32-07:43/11 19:42	07:42 18:22	07:48 16:11	08:41 15:38
14	04:45 21:58	05:41 06:32-07:22/50 20:59	06:43 07:30-07:44/14 19:39	07:44 18:19	07:50 16:09	08:42 15:38
15	04:46 21:56	05:43 06:33-07:22/49 20:57	06:45 07:28-07:45/17 19:36	07:46 18:17	07:53 16:07	08:43 15:38
16	04:48 21:55	05:45 06:33-07:21/48 20:54	06:47 07:27-07:46/19 19:34	07:48 18:14	07:55 16:06	08:44 15:38
17	04:49 21:54	05:47 06:33-07:20/47 20:52	06:49 07:26-07:46/20 19:31	07:50 18:12	07:57 16:04	08:45 15:38
18	04:51 06:48-06:57/9 21:52	05:49 06:34-07:19/45 20:49	06:51 07:26-07:46/20 19:28	07:52 18:09	07:59 16:02	08:46 15:38
19	04:52 06:45-07:00/15 21:51	05:51 06:35-07:18/43 20:47	06:53 07:25-07:46/21 19:26	07:54 18:07	08:01 16:01	08:47 15:38
20	04:54 06:44-07:06/22 21:49	05:53 06:36-07:17/41 20:44	06:55 07:24-07:44/20 19:23	07:56 18:04	08:03 15:59	08:48 15:38
21	04:56 06:42-07:08/26 21:48	05:55 06:38-07:16/38 20:42	06:57 07:25-07:44/19 19:20	07:59 08:02-08:12/10 18:02	08:05 15:57	08:48 15:39
22	04:57 06:41-07:11/30 21:46	05:57 06:39-07:15/36 20:39	06:59 07:27-07:43/16 19:18	08:01 07:59-08:14/15 17:59	08:07 15:56	08:49 15:39
23	04:59 06:39-07:12/33 21:44	05:59 06:42-07:13/31 20:37	07:01 07:29-07:41/12 19:15	08:03 07:57-08:16/19 17:57	08:09 15:54	08:49 15:40
24	05:01 06:39-07:14/35 21:43	06:01 06:45-07:12/27 20:34	07:03 07:31-07:39/8 19:12	08:05 07:55-08:17/22 17:54	08:11 15:53	08:50 15:40
25	05:02 06:37-07:14/37 21:41	06:03 06:46-07:08/22 20:32	07:05 07:33-07:36/3 19:09	07:07 07:54-08:17/23 16:52	08:13 15:52	08:50 15:41
26	05:04 06:37-07:16/39 21:39	06:05 06:49-07:05/16 20:29	07:07 07:53-08:18/25 19:07	07:09 16:50	08:15 15:50	08:50 15:42
27	05:06 06:37-07:17/40 21:37	06:07 06:56-06:58/2 20:27	07:09 07:52-08:18/26 19:04	07:11 16:47	08:17 15:49	08:51 15:43
28	05:08 06:35-07:18/43 21:35	06:09 20:24	07:11 07:52-08:18/26 19:01	07:14 16:45	08:19 15:48	08:51 15:43
29	05:10 06:35-07:19/44 21:34	06:11 20:22	07:13 07:52-08:19/27 18:59	07:16 16:43	08:20 15:47	08:51 15:44
30	05:12 06:35-07:20/45 21:32	06:13 20:19	07:15 07:52-08:18/26 18:56	07:18 16:40	08:22 15:46	08:51 15:45
31	05:14 06:34-07:20/46 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	464	1151	419	132	0	0

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

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