

SHADOW - Kalender

Berechnung: Gesamtbelastung Schattenrezeptor: SR A - Müllmerg 1, 33178 Borchon
Annahmen für Schattenwurfberechnung

Die dargestellten Zeiten sind die astronomisch maximal mögliche Beschattungsdauer, berechnet unter folgenden Annahmen:

- Die Sonne scheint täglich von Sonnenauf- bis -untergang
- Die Rotorfläche steht immer senkrecht zur Sonneneinstrahlrichtung
- Die Windenergieanlage/n ist/sind immer in Betrieb

	July	August	September	Oktober	November	Dezember
1	05:11 21:47	05:47 21:15	06:36 20:14	07:25 19:05	07:18 17:00	08:08 16:20
2	05:12 21:46	05:49 21:14	06:38 20:12	07:26 19:03	42 07:19 16:58	42 15:05 (WEA 04) 14:16 (WEA 06)
3	05:13 21:46	05:50 21:12	06:40 20:10	07:28 19:01	54 07:21 16:56	36 15:04 (WEA 04) 14:39 (WEA 06)
4	05:13 21:46	05:52 21:10	06:41 20:07	07:30 18:58	60 07:23 16:54	26 15:05 (WEA 04) 14:40 (WEA 06)
5	05:14 21:45	05:53 21:09	06:43 20:05	07:31 18:56	62 07:25 16:53	24 15:04 (WEA 04) 14:41 (WEA 06)
6	05:15 21:45	05:55 21:07	06:44 20:03	07:33 18:54	65 07:27 16:51	24 15:05 (WEA 04) 14:41 (WEA 06)
7	05:16 21:44	05:56 21:05	06:46 20:01	07:35 18:52	67 07:28 16:49	24 15:05 (WEA 04) 14:42 (WEA 06)
8	05:17 21:43	05:58 21:03	06:48 19:58	07:36 18:49	68 07:30 16:48	22 15:04 (WEA 04) 14:44 (WEA 06)
9	05:18 21:43	06:00 21:02	06:49 19:56	07:38 18:47	11 17:12 (40557-22 (01)) 17:23 (40557-22 (01))	21 15:05 (WEA 04) 14:44 (WEA 06)
10	05:19 21:42	06:01 21:00	06:51 19:54	07:40 18:45	15 17:25 (40557-22 (01)) 17:08 (40557-22 (01))	21 15:05 (WEA 04) 14:45 (WEA 06)
11	05:20 21:41	06:03 20:58	06:52 19:51	07:41 18:43	19 17:27 (40557-22 (01)) 17:07 (40557-22 (01))	20 15:05 (WEA 04) 14:46 (WEA 06)
12	05:21 21:41	06:04 20:56	06:54 19:49	07:43 18:41	21 17:28 (40557-22 (01)) 17:05 (40557-22 (01))	19 15:05 (WEA 04) 14:46 (WEA 06)
13	05:22 21:40	06:06 20:54	06:56 19:47	07:45 18:38	22 17:27 (40557-22 (01)) 17:05 (40557-22 (01))	19 15:05 (WEA 04) 14:47 (WEA 06)
14	05:23 21:39	06:07 20:52	06:57 19:45	07:46 18:36	23 17:28 (40557-22 (01)) 17:05 (40557-22 (01))	18 15:05 (WEA 04) 14:48 (WEA 06)
15	05:24 21:38	06:09 20:50	06:59 19:42	07:48 18:34	23 17:28 (40557-22 (01)) 17:04 (40557-22 (01))	17 15:05 (WEA 04) 14:50 (WEA 06)
16	05:25 21:37	06:11 20:48	07:00 19:40	07:50 18:32	23 17:27 (40557-22 (01)) 17:04 (40557-22 (01))	16 15:05 (WEA 04) 14:51 (WEA 06)
17	05:27 21:36	06:12 20:46	07:02 19:38	07:51 18:30	22 17:26 (40557-22 (01)) 17:04 (40557-22 (01))	15 15:06 (WEA 04) 14:51 (WEA 06)
18	05:28 21:35	06:14 20:44	07:04 19:35	07:53 18:28	22 17:26 (40557-22 (01)) 17:04 (40557-22 (01))	14 15:05 (WEA 04) 14:52 (WEA 06)
19	05:29 21:34	06:15 20:42	07:05 19:33	07:55 18:26	20 17:25 (40557-22 (01)) 17:06 (40557-22 (01))	14 15:06 (WEA 04) 14:53 (WEA 06)
20	05:30 21:32	06:17 20:40	07:07 19:31	07:57 18:23	18 17:24 (40557-22 (01)) 17:08 (40557-22 (01))	13 15:06 (WEA 04) 14:53 (WEA 06)
21	05:32 21:31	06:19 20:38	07:08 19:28	07:58 18:21	14 17:22 (40557-22 (01)) 17:09 (40557-22 (01))	13 15:06 (WEA 04) 14:54 (WEA 06)
22	05:33 21:30	06:20 20:36	07:10 19:26	08:00 18:19	10 17:19 (40557-22 (01)) 17:09 (40557-22 (01))	13 15:07 (WEA 04) 14:54 (WEA 06)
23	05:34 21:29	06:22 20:34	07:12 19:24	08:02 18:17	8 15:13 (WEA 06) 15:21 (WEA 06)	13 15:07 (WEA 04) 14:54 (WEA 06)
24	05:36 21:27	06:23 20:32	07:13 19:21	08:04 18:15	18 15:26 (WEA 06) 14:05 (WEA 06)	14 15:08 (WEA 04) 14:55 (WEA 06)
25	05:37 21:26	06:25 20:29	07:15 19:19	08:05 18:13	24 14:29 (WEA 06) 14:03 (WEA 06)	14 15:09 (WEA 04) 14:55 (WEA 06)
26	05:38 21:25	06:27 20:27	07:16 19:17	08:07 18:11	28 14:31 (WEA 06) 14:01 (WEA 06)	14 15:09 (WEA 04) 14:55 (WEA 06)
27	05:40 21:23	06:28 20:25	07:18 19:14	08:09 18:09	31 14:32 (WEA 06) 13:59 (WEA 06)	15 15:10 (WEA 04) 14:55 (WEA 06)
28	05:41 21:22	06:30 20:23	07:20 19:12	08:11 18:07	35 14:34 (WEA 06) 14:09 (WEA 06)	16 15:11 (WEA 04) 14:55 (WEA 06)
29	05:43 21:20	06:31 20:21	07:21 19:10	08:12 18:05	37 14:35 (WEA 06) 14:11 (WEA 06)	16 15:11 (WEA 04) 14:55 (WEA 06)
30	05:44 21:19	06:33 20:19	07:23 19:08	08:13 18:03	39 14:36 (WEA 06) 14:11 (WEA 06)	17 15:12 (WEA 04) 14:55 (WEA 06)
31	05:46 21:17	06:35 20:16		08:14 18:02	41 14:36 (WEA 06)	18 15:13 (WEA 04)
Sonnenscheinstunden	500	453	381	332	267	245
astr.max.mogl.Beschattung		58	124	547	2067	583

Tabellen-Layout: Die Daten für jeden Tag sind in folgender Matrix wiedergegeben (Sommerzeit wie Bezugsjahr):

Tag im Monat	Sonnenaufgang (SS:MM)	Sonnenuntergang (SS:MM)	Minuten mit Schatten	Zeitpunkt (SS:MM) Schattenanfang	Zeitpunkt (SS:MM) Schattenende	(WEA mit erstem Schatten)	(WEA mit letztem Schatten)
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SHADOW - Kalender

Berechnung: Gesamtbelastung Schattenrezeptor: SR B - Westernstraße 59, 33178 Borcheln
Annahmen für Schattenwurfberechnung

Die dargestellten Zeiten sind die astronomisch maximal mögliche Beschattungsdauer, berechnet unter folgenden Annahmen:

- Die Sonne scheint täglich von Sonnenauf- bis -untergang
- Die Rotorfläche steht immer senkrecht zur Sonneneinstrahlung
- Die Windenergieanlage/n ist/sind immer in Betrieb

	Jul	August	September	Oktober	November	Dezember	
1	05:11 21:47	05:47 21:15	06:36 20:14	07:25 19:05	07:18 17:00	08:08 16:20	
2	05:12 21:46	05:49 21:14	06:38 20:12	07:26 19:03	07:20 16:58	08:10 16:19	
3	05:13 21:46	05:50 21:12	06:40 20:10	07:28 19:01	07:21 16:56	08:11 16:19	
4	05:13 21:46	05:52 21:10	06:41 20:07	07:30 18:58	07:23 16:54	08:12 16:18	
5	05:14 21:45	05:53 21:09	06:43 20:05	07:31 18:56	07:25 16:53	08:14 16:18	
6	05:15 21:45	05:55 21:07	06:44 20:03	07:33 18:54	07:27 16:51	08:15 16:17	
7	05:16 21:44	05:56 21:05	06:46 20:01	07:35 18:52	07:28 16:49	08:16 16:17	
8	05:17 21:44	05:58 21:03	06:48 19:58	07:36 18:49	07:30 16:48	08:17 16:17	
9	05:18 21:43	06:00 21:02	06:49 19:56	07:38 18:47	07:32 16:46	08:19 16:16	
10	05:19 21:42	06:01 21:00	06:51 19:54	07:40 18:45	07:34 16:44	08:20 16:16	
11	05:20 21:41	06:03 20:58	06:52 19:51	07:41 18:43	07:35 16:43	08:21 16:16	
12	05:21 21:41	06:04 20:56	06:54 19:49	07:43 18:41	07:37 16:41	08:22 16:16	
13	05:22 21:40	06:06 20:54	06:56 19:47	07:45 18:38	07:39 16:40	08:23 16:16	
14	05:23 21:39	06:07 20:52	06:57 19:45	07:46 18:36	07:41 16:38	08:24 16:16	
15	05:24 21:38	06:09 20:50	06:59 19:42	07:48 18:35	07:42 16:37	08:25 16:16	
16	05:25 21:37	06:11 20:48	07:00 19:40	07:50 18:32	07:44 16:36	08:25 16:16	
17	05:27 21:36	06:12 20:46	07:02 19:38	07:51 18:30	07:46 16:34	08:26 16:16	
18	05:28 21:35	06:14 20:44	07:04 19:35	07:53 18:28	07:48 16:33	08:27 16:16	
19	05:29 21:34	06:15 20:42	07:05 19:33	07:55 18:26	07:49 16:32	08:28 16:17	
20	05:30 21:32	06:17 20:40	07:07 19:31	07:57 18:23	07:51 16:30	08:28 16:17	
21	05:32 21:31	06:19 20:38	07:08 19:28	07:58 18:21	07:53 16:29	08:29 16:17	
22	05:33 21:30	06:20 20:36	07:10 19:26	08:00 18:19	07:54 16:28	08:29 16:18	
23	05:34 21:29	06:22 20:34	07:12 19:24	08:02 18:17	07:56 16:27	08:30 16:18	
24	05:36 21:27	06:23 20:32	07:13 19:21	08:04 18:15	07:57 16:26	08:30 16:19	
25	05:37 21:26	06:25 20:29	07:15 19:19	08:05 17:13	07:59 16:25	08:31 16:20	
26	05:38 21:25	06:27 20:27	07:16 19:17	08:07 17:11	08:01 16:24	08:31 16:20	
27	05:40 21:23	06:28 20:25	07:18 19:14	08:09 17:09	08:02 16:23	08:31 16:21	
28	05:41 21:22	06:30 20:23	07:20 19:12	08:11 17:07	08:04 16:22	08:32 16:22	
29	05:43 21:20	06:32 20:21	07:21 19:10	08:12 17:05	08:05 16:21	08:32 16:23	
30	05:44 21:19	06:33 20:19	07:23 19:08	08:14 17:04	08:07 16:21	08:32 16:24	
31	05:46 21:17	06:35 20:16		08:16 17:02	15:45 (40557-22 (02)) 15:54 (40557-22 (02))	08:32 16:25	
	Sonnenscheinstunden astr.max.mögl.Beschattung	500 453	381 208	467	332 219	267 446	245 1084

Tabellen-Layout: Die Daten für jeden Tag sind in folgender Matrix wiedergegeben (Sommerzeit wie Bezugsjahr):

Tag im Monat	Sonnenaufgang (SS:MM)	Sonnenuntergang (SS:MM)	Minuten mit Schatten	Zeitpunkt (SS:MM) Schattenanfang	Zeitpunkt (SS:MM) Schattende	(WEA mit erstem Schatten)	(WEA mit letztem Schatten)
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SHADOW - Kalender

Berechnung: Gesamtbelastung Schattenrezeptor: SR C - Bohmweg 23, 33178 Borcheln
Annahmen für Schattenwurfberechnung

Die dargestellten Zeiten sind die astronomisch maximal mögliche Beschattungsdauer, berechnet unter folgenden Annahmen:

- Die Sonne scheint täglich von Sonnenauf- bis -untergang
- Die Rotorfläche steht immer senkrecht zur Sonneneinstrahlung
- Die Windenergieanlage/n ist/sind immer in Betrieb

	Januar	Februar	März	April	Mai	Juni		
1	08:32	13:43 (WEA 06)	08:06	07:13	07:03	05:59	05:14	
	16:26	29 14:12 (WEA 06)	17:13	18:04	19:57	20:48	21:33	
2	08:32	13:43 (WEA 06)	08:04	07:11	07:01	05:57	05:13	
	16:27	29 14:12 (WEA 06)	17:15	18:06	19:59	20:49	21:34	
3	08:32	13:43 (WEA 06)	08:03	07:09	06:58	05:55	05:13	
	16:28	29 14:12 (WEA 06)	17:17	18:08	20:01	20:51	21:35	
4	08:32	13:45 (WEA 06)	08:01	07:06	06:56	05:53	05:12	
	16:29	27 14:12 (WEA 06)	17:19	18:09	20:02	20:53	21:36	
5	08:31	13:46 (WEA 06)	07:59	07:04	06:54	05:51	05:11	
	16:30	27 14:13 (WEA 06)	17:20	18:11	20:04	20:54	21:37	
6	08:31	13:46 (WEA 06)	07:58	07:02	06:52	05:50	05:11	
	16:32	26 14:12 (WEA 06)	17:22	18:13	20:06	20:56	21:38	
7	08:31	13:48 (WEA 06)	07:56	07:00	06:49	05:48	05:10	
	16:33	25 14:13 (WEA 06)	17:24	18:15	20:08	20:58	21:39	
8	08:30	13:48 (WEA 06)	07:54	06:58	06:47	05:46	05:09	
	16:34	24 14:12 (WEA 06)	17:26	18:16	20:09	20:59	21:40	
9	08:30	13:49 (WEA 06)	07:52	06:55	06:45	05:44	05:09	
	16:35	22 14:11 (WEA 06)	17:28	18:18	20:11	21:01	21:41	
10	08:29	13:51 (WEA 06)	07:51	06:53	06:43	05:43	05:09	
	16:37	21 14:12 (WEA 06)	17:30	18:20	20:13	21:02	21:41	
11	08:29	13:52 (WEA 06)	07:49	06:51	06:40	05:41	05:08	
	16:38	19 14:11 (WEA 06)	17:31	18:22	20:14	21:04	21:42	
12	08:28	13:53 (WEA 06)	07:47	06:49	06:38	05:39	05:08	
	16:40	17 14:10 (WEA 06)	17:33	18:23	20:16	21:05	21:43	
13	08:27	13:55 (WEA 06)	07:45	06:46	06:36	05:38	05:08	
	16:41	14 14:09 (WEA 06)	17:35	18:25	20:18	21:07	21:44	
14	08:27	13:57 (WEA 06)	07:43	06:44	06:34	05:36	05:07	
	16:43	10 14:07 (WEA 06)	17:37	18:27	20:19	21:09	21:44	
15	08:26		07:41	06:42	06:32	05:35	05:07	
	16:44		17:39	18:29	20:21	21:10	21:45	
16	08:25		07:40	06:40	06:29	05:33	05:07	
	16:46		17:41	6 08:28 (832-95)	18:30	20:23	21:12	21:45
17	08:24		07:38	08:21 (832-95)	06:37	06:27	05:32	05:07
	16:47		17:42	8 08:29 (832-95)	18:32	20:24	21:13	21:46
18	08:23		07:36	08:21 (832-95)	06:35	06:25	05:30	05:07
	16:49		17:44	9 08:30 (832-95)	18:34	20:26	21:15	21:46
19	08:22		07:34	08:21 (832-95)	06:33	06:23	05:29	05:07
	16:50		17:46	9 08:30 (832-95)	18:35	20:28	21:16	21:46
20	08:21		07:32	08:21 (832-95)	06:30	06:21	05:27	05:07
	16:52		17:48	8 08:29 (832-95)	18:37	20:29	21:17	21:47
21	08:20		07:30	08:21 (832-95)	06:28	06:19	05:26	05:07
	16:54		17:50	6 08:27 (832-95)	18:39	20:31	21:19	21:47
22	08:19		07:28		06:26	06:17	05:25	05:07
	16:55		17:52		18:41	20:33	21:20	21:47
23	08:18		07:25		06:24	06:15	05:24	05:08
	16:57		17:53		18:42	20:34	21:22	21:47
24	08:17		07:23		06:21	06:13	05:22	05:08
	16:59		17:55		18:44	20:36	21:23	21:47
25	08:15		07:21		06:19	06:11	05:21	05:08
	17:01		17:57		18:46	20:38	21:24	21:48
26	08:14		07:19		06:17	06:09	05:20	05:09
	17:02		17:59		18:47	20:39	21:26	21:48
27	08:13		07:17		06:14	06:07	05:19	05:09
	17:04		18:01		18:49	20:41	21:27	21:47
28	08:11		07:15		06:12	06:05	05:18	05:10
	17:06		18:02		18:51	20:43	21:28	21:47
29	08:10				07:10	06:03	05:17	05:10
	17:08				19:52	20:44	21:29	21:47
30	08:09				07:07	06:01	05:16	05:11
	17:10				19:54	20:46	21:31	21:47
31	08:07				07:05		05:15	
	17:11				19:56		21:32	
Sonnenscheinstunden	260		278		367	415	484	497
astr.max.mögl.Beschattung	319		46					

Tabellen-Layout: Die Daten für jeden Tag sind in folgender Matrix wiedergegeben (Sommerzeit wie Bezugsjahr):

Tag im Monat	Sonnenaufgang (SS:MM)	Sonnenuntergang (SS:MM)	Minuten mit Schatten	Zeitpunkt (SS:MM) Schattenanfang	Zeitpunkt (SS:MM) Schattenende	(WEA mit erstem Schatten)	(WEA mit letztem Schatten)
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SHADOW - Kalender

Berechnung: Gesamtbelastung Schattenrezeptor: SR C - Bohmweg 23, 33178 Borcheln
Annahmen für Schattenwurfberechnung

Die dargestellten Zeiten sind die astronomisch maximal mögliche Beschattungsdauer, berechnet unter folgenden Annahmen:

- Die Sonne scheint täglich von Sonnenauf- bis -untergang
- Die Rotorfläche steht immer senkrecht zur Sonneneinstrahlung
- Die Windenergieanlage/n ist/sind immer in Betrieb

	July	August	September	Oktober	November	Dezember	
1	05:11 21:47	05:47 21:15	06:36 20:14	07:25 19:05	07:18 17:00	08:08 16:20	13:34 (WEA 06) 13:53 (WEA 06)
2	05:12 21:46	05:49 21:14	06:38 20:12	07:26 19:03	07:20 16:58	08:10 16:19	13:33 (WEA 06) 13:54 (WEA 06)
3	05:13 21:46	05:50 21:12	06:40 20:10	07:28 19:01	07:21 16:56	08:11 16:19	13:33 (WEA 06) 13:56 (WEA 06)
4	05:13 21:46	05:52 21:10	06:41 20:07	07:30 18:58	07:23 16:54	08:12 16:18	13:32 (WEA 06) 13:56 (WEA 06)
5	05:14 21:45	05:53 21:09	06:43 20:05	07:31 18:56	07:25 16:53	08:14 16:18	13:33 (WEA 06) 13:58 (WEA 06)
6	05:15 21:45	05:55 21:07	06:44 20:03	07:33 18:54	07:27 16:51	08:15 16:17	13:32 (WEA 06) 13:58 (WEA 06)
7	05:16 21:44	05:56 21:05	06:46 20:01	07:35 18:52	07:28 16:49	08:16 16:17	13:32 (WEA 06) 13:59 (WEA 06)
8	05:17 21:44	05:58 21:03	06:48 19:58	07:36 18:49	07:30 16:48	08:17 16:17	13:33 (WEA 06) 14:00 (WEA 06)
9	05:18 21:43	06:00 21:02	06:49 19:56	07:38 18:47	07:32 16:46	08:18 16:16	13:33 (WEA 06) 14:01 (WEA 06)
10	05:19 21:42	06:01 21:00	06:51 19:54	07:40 18:45	07:34 16:44	08:20 16:16	13:33 (WEA 06) 14:01 (WEA 06)
11	05:20 21:41	06:03 20:58	06:52 19:51	07:41 18:43	07:35 16:43	08:21 16:16	13:33 (WEA 06) 14:02 (WEA 06)
12	05:21 21:41	06:04 20:56	06:54 19:49	07:43 18:41	07:37 16:41	08:22 16:16	13:33 (WEA 06) 14:02 (WEA 06)
13	05:22 21:40	06:06 20:54	06:56 19:47	07:45 18:38	07:39 16:40	08:23 16:16	13:33 (WEA 06) 14:03 (WEA 06)
14	05:23 21:39	06:07 20:52	06:57 19:45	07:46 18:36	07:41 16:38	08:24 16:16	13:33 (WEA 06) 14:04 (WEA 06)
15	05:24 21:38	06:09 20:50	06:59 19:42	07:48 18:34	07:42 16:37	08:25 16:16	13:34 (WEA 06) 14:04 (WEA 06)
16	05:25 21:37	06:11 20:48	07:00 19:40	07:50 18:32	07:44 16:36	08:25 16:16	13:34 (WEA 06) 14:05 (WEA 06)
17	05:27 21:36	06:12 20:46	07:02 19:38	07:51 18:30	07:46 16:34	08:26 16:16	13:35 (WEA 06) 14:06 (WEA 06)
18	05:28 21:35	06:14 20:44	07:04 19:35	07:53 18:28	07:48 16:33	08:27 16:16	13:35 (WEA 06) 14:06 (WEA 06)
19	05:29 21:34	06:15 20:42	07:05 19:33	07:55 18:26	07:49 16:32	08:28 16:17	13:35 (WEA 06) 14:06 (WEA 06)
20	05:30 21:32	06:17 20:40	07:07 19:31	07:57 18:23	07:51 16:30	08:28 16:17	13:36 (WEA 06) 14:07 (WEA 06)
21	05:32 21:31	06:19 20:38	07:08 19:28	07:58 18:21	07:53 16:29	08:29 16:17	13:36 (WEA 06) 14:07 (WEA 06)
22	05:33 21:30	06:20 20:36	07:10 19:26	08:00 18:19	07:54 16:28	08:29 16:18	13:37 (WEA 06) 14:08 (WEA 06)
23	05:34 21:29	06:22 20:34	07:12 19:24	08:02 18:17	07:56 16:27	08:30 16:18	13:37 (WEA 06) 14:08 (WEA 06)
24	05:36 21:27	06:23 20:32	07:13 19:21	08:04 18:15	07:57 16:26	08:30 16:19	13:37 (WEA 06) 14:08 (WEA 06)
25	05:37 21:26	06:25 20:29	07:15 19:19	08:05 18:13	07:59 16:25	08:31 16:20	13:38 (WEA 06) 14:10 (WEA 06)
26	05:38 21:25	06:27 20:27	07:16 19:17	08:07 18:11	08:01 16:24	08:31 16:20	13:39 (WEA 06) 14:10 (WEA 06)
27	05:40 21:23	06:28 20:25	07:18 19:14	08:09 18:09	08:02 16:23	08:31 16:21	13:39 (WEA 06) 14:10 (WEA 06)
28	05:41 21:22	06:30 20:23	07:20 19:12	08:11 18:07	08:04 16:22	08:32 16:22	13:40 (WEA 06) 14:10 (WEA 06)
29	05:43 21:20	06:31 20:21	07:21 19:10	08:12 18:05	08:05 16:21	08:32 16:23	13:40 (WEA 06) 14:11 (WEA 06)
30	05:44 21:19	06:33 20:19	07:23 19:08	08:14 18:04	08:07 16:21	08:32 16:24	13:41 (WEA 06) 14:11 (WEA 06)
31	05:46 21:17	06:35 20:16	07:25 19:06	08:16 18:02	08:09 16:20	08:33 16:25	13:42 (WEA 06) 14:11 (WEA 06)
Sonnenscheinstunden	500	453	381	332	267	245	
astr.max.mögl.Beschattung				47	41	890	

Tabellen-Layout: Die Daten für jeden Tag sind in folgender Matrix wiedergegeben (Sommerzeit wie Bezugsjahr):

Tag im Monat	Sonnenaufgang (SS:MM)	Sonnenuntergang (SS:MM)	Minuten mit Schatten	Zeitpunkt (SS:MM) Schattenanfang	Zeitpunkt (SS:MM) Schattenende	(WEA mit erstem Schatten)	(WEA mit letztem Schatten)
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SHADOW - Kalender

Berechnung: GesamtbelastungSchattenrezeptor: SR D - Kattenecke 19, 33178 Borchen
Annahmen für Schattenwurfberechnung

- Die dargestellten Zeiten sind die astronomisch maximal mögliche Beschattungsdauer, berechnet unter folgenden Annahmen:
Die Sonne scheint täglich von Sonnenauf- bis -untergang
Die Rotorfläche steht immer senkrecht zur Sonneneinstrahlung
Die Windenergieanlage/n ist/sind immer in Betrieb

Table with 6 columns (Januar to Juni) and multiple rows of time data (e.g., 08:32, 13:58, 08:06) and solar radiation values (e.g., 260, 278, 367, 415, 484, 497, 845).

Tabellen-Layout: Die Daten für jeden Tag sind in folgender Matrix wiedergegeben (Sommerzeit wie Bezugsjahr):

Table with 4 columns: Tag im Monat, Sonnenaufgang (SS:MM), Sonnenuntergang (SS:MM), Minuten mit Schatten, Zeitpunkt (SS:MM) Schattenanfang, Zeitpunkt (SS:MM) Schattende, (WEA mit erstem Schatten), (WEA mit letztem Schatten)



SHADOW - Kalender

Berechnung: GesamtbelastungSchattenrezeptor: SR D - Kattenecke 19, 33178 Borchen
Annahmen für Schattenwurfberechnung

Die dargestellten Zeiten sind die astronomisch maximal mögliche Beschattungsdauer, berechnet unter folgenden Annahmen:

- Die Sonne scheint täglich von Sonnenauf- bis -untergang
Die Rotorfläche steht immer senkrecht zur Sonneneinfallrichtung
Die Windenergieanlage/n ist/sind immer in Betrieb

Table with columns for months (Juli, August, September, Oktober, November, Dezember) and rows for days, showing solar shadow times and durations.

Tabellen-Layout: Die Daten für jeden Tag sind in folgender Matrix wiedergegeben (Sommerzeit wie Bezugsjahr):

Tag im Monat Sonnenaufgang (SS:MM) Sonnenuntergang (SS:MM) Minuten mit Schatten Zeitpunkt (SS:MM) Schattenanfang (WEA mit erstem Schatten) Zeitpunkt (SS:MM) Schattenende (WEA mit letztem Schatten)



SHADOW - Kalender

Berechnung: Gesamtbelastung Schattenrezeptor: SR E - Kattenecke 14, 33178 Borchon
Annahmen für Schattenwurfberechnung

Die dargestellten Zeiten sind die astronomisch maximal mögliche Beschattungsdauer, berechnet unter folgenden Annahmen:

- Die Sonne scheint täglich von Sonnenauf- bis -untergang
- Die Rotorfläche steht immer senkrecht zur Sonneneinstrahlungsrichtung
- Die Windenergieanlage/n ist/sind immer in Betrieb

	Januar	Februar	März	April	Mai	Juni
1	08:32 16:26	13:53 (WEA 06) 14:49 (WEA 04)	08:06 17:13	07:13 18:04	07:49 (42110-22) 08:03 (42110-22)	07:03 19:57
2	08:32 16:27	13:54 (WEA 06) 14:50 (WEA 04)	08:04 17:15	07:11 18:06	07:48 (42110-22) 08:03 (42110-22)	07:01 19:59
3	08:32 16:28	13:53 (WEA 06) 14:49 (WEA 04)	08:03 17:15	07:09 18:08	07:48 (42110-22) 08:03 (42110-22)	06:58 20:01
4	08:32 16:29	13:54 (WEA 06) 14:49 (WEA 04)	08:01 17:19	07:06 18:09	07:47 (42110-22) 08:02 (42110-22)	06:56 20:02
5	08:31 16:30	13:55 (WEA 06) 14:49 (WEA 04)	07:59 17:20	07:04 18:11	07:48 (42110-22) 08:02 (42110-22)	06:54 20:04
6	08:31 16:32	13:55 (WEA 06) 14:49 (WEA 04)	07:58 17:22	07:02 18:13	07:49 (42110-22) 08:01 (42110-22)	06:52 20:06
7	08:31 16:33	13:57 (WEA 06) 14:49 (WEA 04)	07:56 17:24	07:00 18:15	07:50 (42110-22) 08:00 (42110-22)	06:49 20:08
8	08:30 16:34	13:57 (WEA 06) 14:47 (WEA 04)	07:54 17:26	06:58 18:16	07:52 (42110-22) 07:55 (42110-22)	06:47 20:09
9	08:30 16:35	13:57 (WEA 06) 14:45 (WEA 04)	07:52 17:28	06:55 18:18	07:55 (42110-22) 07:55 (42110-22)	06:45 20:11
10	08:29 16:37	13:59 (WEA 06) 14:27 (WEA 06)	07:51 17:30	06:53 18:20	07:55 (42110-22) 18:20	06:43 20:13
11	08:29 16:38	13:59 (WEA 06) 14:27 (WEA 06)	07:49 17:31	06:51 18:22	07:55 (42110-22) 18:22	06:41 20:14
12	08:28 16:40	14:00 (WEA 06) 14:27 (WEA 06)	07:47 17:33	06:49 18:23	07:49 (42110-22) 18:23	06:38 20:16
13	08:27 16:41	14:01 (WEA 06) 14:27 (WEA 06)	07:45 17:35	06:46 18:25	07:49 (42110-22) 18:25	06:36 20:18
14	08:27 16:43	14:01 (WEA 06) 14:26 (WEA 06)	07:43 17:37	06:44 18:27	07:49 (42110-22) 18:27	06:34 20:19
15	08:26 16:44	14:03 (WEA 06) 14:26 (WEA 06)	07:41 17:39	06:42 18:28	07:49 (42110-22) 18:28	06:32 20:21
16	08:25 16:46	14:04 (WEA 06) 14:25 (WEA 06)	07:40 17:41	06:40 18:30	07:49 (42110-22) 18:30	06:29 20:23
17	08:24 16:47	14:05 (WEA 06) 14:25 (WEA 06)	07:38 17:42	06:37 18:32	07:49 (42110-22) 18:32	06:27 20:24
18	08:23 16:49	14:07 (WEA 06) 14:24 (WEA 06)	07:36 17:44	06:35 18:34	07:49 (42110-22) 18:34	06:25 20:26
19	08:22 16:50	14:09 (WEA 06) 14:23 (WEA 06)	07:34 17:46	06:33 18:35	07:49 (42110-22) 18:35	06:23 20:28
20	08:21 16:52	14:13 (WEA 06) 14:20 (WEA 06)	07:32 17:48	06:30 18:37	07:49 (42110-22) 18:37	06:21 20:29
21	08:20 16:54	14:15 (WEA 06) 14:20 (WEA 06)	07:30 17:50	06:28 18:39	07:49 (42110-22) 18:39	06:19 20:31
22	08:19 16:55	14:16 (WEA 06) 14:20 (WEA 06)	07:28 17:52	06:26 18:41	07:49 (42110-22) 18:41	06:17 20:33
23	08:18 16:57	14:17 (WEA 06) 14:20 (WEA 06)	07:25 17:53	06:24 18:42	07:49 (42110-22) 18:42	06:15 20:34
24	08:17 16:59	14:18 (WEA 06) 14:20 (WEA 06)	07:23 17:55	06:21 18:44	07:49 (42110-22) 18:44	06:13 20:36
25	08:15 17:01	14:19 (WEA 06) 14:20 (WEA 06)	07:21 17:57	06:19 18:46	07:49 (42110-22) 18:46	06:11 20:38
26	08:14 17:02	14:20 (WEA 06) 14:20 (WEA 06)	07:19 17:59	06:17 18:47	07:49 (42110-22) 18:47	06:09 20:39
27	08:13 17:04	14:21 (WEA 06) 14:20 (WEA 06)	07:17 18:01	06:14 18:49	07:49 (42110-22) 18:49	06:07 20:41
28	08:11 17:06	14:22 (WEA 06) 14:20 (WEA 06)	07:15 18:02	06:12 18:51	07:49 (42110-22) 18:51	06:05 20:43
29	08:10 17:08	14:23 (WEA 06) 14:20 (WEA 06)	07:13 18:03	06:10 18:52	07:49 (42110-22) 18:52	06:03 20:44
30	08:09 17:10	14:24 (WEA 06) 14:20 (WEA 06)	07:11 18:04	06:08 18:53	07:49 (42110-22) 18:53	06:01 20:46
31	08:07 17:11	14:25 (WEA 06) 14:20 (WEA 06)	07:09 18:05	06:06 18:54	07:49 (42110-22) 18:54	05:59 20:48
Sonnenscheinstunden	260	278	367	415	484	497
astr.max.mögl.Beschattung	630	75	98	20	284	575

Tabellen-Layout: Die Daten für jeden Tag sind in folgender Matrix wiedergegeben (Sommerzeit wie Bezugsjahr):

Tag im Monat	Sonnenaufgang (SS:MM)	Sonnenuntergang (SS:MM)	Minuten mit Schatten	Zeitpunkt (SS:MM) Schattenanfang	Zeitpunkt (SS:MM) Schattende	(WEA mit erstem Schatten)	(WEA mit letztem Schatten)
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SHADOW - Kalender

Berechnung: Gesamtbelastung Schattenrezeptor: SR F - Kattenecke 17, 33178 Borchon
Annahmen für Schattenwurfberechnung

Die dargestellten Zeiten sind die astronomisch maximal mögliche Beschattungsdauer, berechnet unter folgenden Annahmen:

- Die Sonne scheint täglich von Sonnenauf- bis -untergang
Die Rotorfläche steht immer senkrecht zur Sonneneinstrahlung
Die Windenergieanlage/n ist/sind immer in Betrieb

Table with columns for months (Januar to Juni) and rows for each day of the year, showing solar shadows and shading durations for various locations (WEA 06, etc.).

Tabellen-Layout: Die Daten für jeden Tag sind in folgender Matrix wiedergegeben (Sommerzeit wie Bezugsjahr):

Table with columns: Tag im Monat, Sonnenaufgang (SS:MM), Sonnenuntergang (SS:MM), Minuten mit Schatten, Zeitpunkt (SS:MM) Schattenanfang, Zeitpunkt (SS:MM) Schattende, (WEA mit erstem Schatten), (WEA mit letztem Schatten)

SHADOW - Kalender

Berechnung: Gesamtbelastung Schattenrezeptor: SR F - Kattenecke 17, 33178 Borchen
Annahmen für Schattenwurfberechnung

Die dargestellten Zeiten sind die astronomisch maximal mögliche Beschattungsdauer, berechnet unter folgenden Annahmen:

- Die Sonne scheint täglich von Sonnenauf- bis -untergang
- Die Rotorfläche steht immer senkrecht zur Sonneneinstrahlung
- Die Windenergieanlage/n ist/sind immer in Betrieb

	Jul	August	September	Oktober	November	Dezember
1	05:11 21:47	05:57 (40180-22 (WEA 02)) 06:13 (40180-22 (WEA 02))	05:47 21:15	06:41 (40180-22 (WEA01)) 07:01 (40180-22 (WEA01))	06:36 20:14	07:25 19:05
2	05:12 21:46	05:57 (40180-22 (WEA 02)) 06:12 (40180-22 (WEA 02))	05:49 21:14	06:40 (40180-22 (WEA01)) 07:01 (40180-22 (WEA01))	06:38 20:12	07:26 19:03
3	05:13 21:46	05:57 (40180-22 (WEA 02)) 06:12 (40180-22 (WEA 02))	05:50 21:12	06:41 (40180-22 (WEA01)) 07:02 (40180-22 (WEA01))	06:40 20:10	07:28 19:01
4	05:13 21:46	05:58 (40180-22 (WEA 02)) 06:13 (40180-22 (WEA 02))	05:52 21:10	06:40 (40180-22 (WEA01)) 07:01 (40180-22 (WEA01))	06:41 20:07	07:30 18:58
5	05:14 21:45	05:58 (40180-22 (WEA 02)) 06:11 (40180-22 (WEA 02))	05:53 21:09	06:40 (40180-22 (WEA01)) 07:00 (40180-22 (WEA01))	06:43 20:05	07:31 18:56
6	05:15 21:45	05:59 (40180-22 (WEA 02)) 06:11 (40180-22 (WEA 02))	05:55 21:07	06:41 (40180-22 (WEA01)) 07:01 (40180-22 (WEA01))	06:44 20:03	07:33 18:54
7	05:16 21:44	06:00 (40180-22 (WEA 02)) 06:11 (40180-22 (WEA 02))	05:56 21:05	06:41 (40180-22 (WEA01)) 07:00 (40180-22 (WEA01))	06:46 20:01	07:35 18:52
8	05:17 21:43	06:01 (40180-22 (WEA 02)) 06:10 (40180-22 (WEA 02))	05:58 21:03	06:41 (40180-22 (WEA01)) 07:00 (40180-22 (WEA01))	06:48 19:58	07:36 18:49
9	05:18 21:43	06:03 (40180-22 (WEA 02)) 06:09 (40180-22 (WEA 02))	06:00 21:02	06:42 (40180-22 (WEA01)) 06:43 (40180-22 (WEA01))	06:49 19:56	07:38 18:47
10	05:19 21:42	06:09 (40180-22 (WEA 02)) 21:00	06:01 21:00	06:43 (40180-22 (WEA01)) 06:58 (40180-22 (WEA01))	06:51 19:54	07:40 18:45
11	05:20 21:41	06:03 20:58	06:03 20:58	06:44 (40180-22 (WEA01)) 06:55 (40180-22 (WEA01))	06:52 19:51	07:41 18:43
12	05:21 21:41	06:04 20:56	06:04 20:56	06:47 (40180-22 (WEA01)) 06:53 (40180-22 (WEA01))	06:54 19:49	07:43 18:41
13	05:22 21:40	06:06 20:54	06:06 20:54	06:53 (40180-22 (WEA01)) 20:54	06:56 19:47	07:45 18:38
14	05:23 21:39	06:07 20:52	06:07 20:52	06:57 20:52	19:47	18:38 18:36
15	05:24 21:38	06:09 20:50	06:09 20:50	06:59 20:50	19:42	18:32 18:33
16	05:25 21:37	06:11 20:48	06:11 20:48	07:00 19:40	19:42	18:32 18:32
17	05:27 21:36	06:12 20:46	06:12 20:46	07:02 19:38	19:40	18:32 18:30
18	05:28 21:35	06:14 20:44	06:14 20:44	07:04 19:35	19:38	18:32 18:28
19	05:29 21:34	06:15 20:42	06:15 20:42	07:05 19:33	19:35	18:32 18:25
20	05:30 21:32	06:17 20:40	06:17 20:40	07:07 19:31	19:33	18:32 18:23
21	05:32 21:31	06:19 20:38	06:19 20:38	07:08 19:28	19:31	18:32 18:21
22	05:33 21:30	06:20 20:36	06:20 20:36	07:10 19:26	19:28	18:32 18:19
23	05:34 21:29	06:22 20:34	06:22 20:34	07:12 19:24	19:26	18:32 18:17
24	05:36 21:27	06:23 20:32	06:23 20:32	07:13 19:21	19:24	18:32 18:15
25	05:37 21:26	06:25 20:29	06:25 20:29	07:15 19:19	19:21	18:32 18:13
26	05:38 21:25	06:27 20:27	06:27 20:27	07:16 19:17	19:19	18:32 18:11
27	05:40 21:23	06:28 20:25	06:28 20:25	07:18 19:14	19:17	18:32 18:09
28	05:41 21:22	06:30 20:23	06:30 20:23	07:20 19:12	19:14	18:32 18:07
29	05:43 21:20	06:31 20:21	06:31 20:21	07:21 19:10	19:12	18:32 18:05
30	05:44 21:19	06:33 20:19	06:33 20:19	07:23 19:08	19:10	18:32 18:03
31	05:46 21:17	06:35 20:16	06:35 20:16	07:25 19:06	19:08	18:32 18:01
Sonnenscheinstunden	500	453	381	332	267	245
astr.max.mögl.Beschattung	213	209	215	208	495	1620

Tabellen-Layout: Die Daten für jeden Tag sind in folgender Matrix wiedergegeben (Sommerzeit wie Bezugsjahr):

Tag im Monat	Sonnenaufgang (SS:MM)	Sonnenuntergang (SS:MM)	Minuten mit Schatten	Zeitpunkt (SS:MM) Schattenanfang	Zeitpunkt (SS:MM) Schattenende	(WEA mit erstem Schatten)	(WEA mit letztem Schatten)
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SHADOW - Kalender

Berechnung: Gesamtbelastung Schattenrezeptor: SR G - Kattenecke 13, 33178 Borchen
Annahmen für Schattenwurfberechnung

Die dargestellten Zeiten sind die astronomisch maximal mögliche Beschattungsdauer, berechnet unter folgenden Annahmen:

- Die Sonne scheint täglich von Sonnenauf- bis -untergang
- Die Rotorfläche steht immer senkrecht zur Sonneneinstrahlung
- Die Windenergieanlage/n ist/sind immer in Betrieb

	Jul	August	September	Oktober	November	Dezember
1	05:11 21:47	05:59 (40180-22 (WEA 02)) 21:15	06:44 (40180-22 (WEA01)) 20:14	19:01 (40102-18) 19:05	08:09 (40614-20) 17:00	08:39 (832-95) 16:20
2	05:12 21:46	05:59 (40180-22 (WEA 02)) 21:14	06:43 (40180-22 (WEA01)) 20:12	19:01 (40102-18) 19:03	08:12 (40614-20) 17:19	08:39 (832-95) 16:19
3	05:13 21:46	06:12 (40180-22 (WEA 02)) 21:12	06:43 (40180-22 (WEA01)) 20:10	19:01 (40102-18) 19:01	08:16 (40614-20) 17:58	08:40 (832-95) 16:19
4	05:13 21:46	06:00 (40180-22 (WEA 02)) 21:12	06:43 (40180-22 (WEA01)) 20:09	19:01 (40102-18) 19:01	08:16 (40614-20) 17:58	08:40 (832-95) 16:19
5	05:14 21:46	06:12 (40180-22 (WEA 02)) 21:10	06:43 (40180-22 (WEA01)) 20:07	19:18 (40102-18) 18:58	08:16 (40614-20) 17:58	08:40 (832-95) 16:18
6	05:15 21:45	06:03 (40180-22 (WEA 02)) 21:07	06:43 (40180-22 (WEA01)) 20:03	19:03 (40102-18) 18:54	08:16 (40614-20) 17:58	08:40 (832-95) 16:18
7	05:16 21:44	06:05 (40180-22 (WEA 02)) 21:05	06:43 (40180-22 (WEA01)) 20:01	19:05 (40102-18) 18:52	08:16 (40614-20) 17:58	08:40 (832-95) 16:17
8	05:17 21:43	06:08 (40180-22 (WEA 02)) 21:03	06:44 (40180-22 (WEA01)) 19:58	19:11 (40102-18) 18:52	08:35 (42110-22) 17:30	08:39 (832-95) 16:17
9	05:18 21:43	06:00 (40180-22 (WEA 02)) 21:02	06:44 (40180-22 (WEA01)) 19:58	19:49 18:47	08:44 (42110-22) 17:30	15:30 (40557-22 (01)) 16:17
10	05:19 21:42	06:01 (40180-22 (WEA 02)) 21:00	06:44 (40180-22 (WEA01)) 19:54	19:49 18:45	08:44 (42110-22) 17:30	15:30 (40557-22 (01)) 16:17
11	05:20 21:41	06:03 (40180-22 (WEA 02)) 20:58	06:46 (40180-22 (WEA01)) 19:51	19:49 18:43	08:45 (42110-22) 17:30	15:30 (40557-22 (01)) 16:16
12	05:21 21:41	06:04 (40180-22 (WEA 02)) 20:56	06:49 (40180-22 (WEA01)) 19:49	19:49 18:41	08:45 (42110-22) 17:30	15:33 (40557-22 (01)) 16:16
13	05:22 21:40	06:06 (40180-22 (WEA 02)) 20:54	06:57 (40180-22 (WEA01)) 19:47	19:49 18:38	08:45 (42110-22) 17:30	15:35 (40557-22 (01)) 16:16
14	05:23 21:39	06:07 (40180-22 (WEA 02)) 20:52	06:57 (40180-22 (WEA01)) 19:44	19:49 18:36	08:46 (42110-22) 17:30	15:41 (40557-22 (01)) 16:16
15	05:24 21:38	06:09 (40180-22 (WEA 02)) 20:50	06:59 (40180-22 (WEA01)) 19:42	19:49 18:34	08:46 (42110-22) 17:30	15:41 (40557-22 (01)) 16:16
16	05:25 21:37	06:11 (40180-22 (WEA 02)) 20:48	07:00 (40180-22 (WEA01)) 19:40	19:49 18:32	08:46 (42110-22) 17:30	15:41 (40557-22 (01)) 16:16
17	05:27 21:36	06:12 (40180-22 (WEA 02)) 20:46	07:02 (40180-22 (WEA01)) 19:38	19:49 18:30	08:44 (42110-22) 17:30	15:41 (40557-22 (01)) 16:16
18	05:28 21:35	06:14 (40180-22 (WEA 02)) 20:44	07:04 (40180-22 (WEA01)) 19:35	19:49 18:28	08:42 (42110-22) 17:30	15:41 (40557-22 (01)) 16:16
19	05:29 21:34	06:15 (40180-22 (WEA 02)) 20:42	07:05 (40180-22 (WEA01)) 19:33	19:49 18:26	08:38 (42110-22) 17:30	14:05 (WEA 06) 16:17
20	05:30 21:32	06:17 (40180-22 (WEA 02)) 20:40	07:07 (40180-22 (WEA01)) 19:31	19:49 18:24	08:38 (42110-22) 17:30	14:05 (WEA 06) 16:17
21	05:32 21:31	06:19 (40180-22 (WEA 02)) 20:38	07:08 (40180-22 (WEA01)) 19:28	19:49 18:22	08:38 (42110-22) 17:30	14:05 (WEA 06) 16:17
22	05:33 21:30	06:20 (40180-22 (WEA 02)) 20:36	07:10 (40180-22 (WEA01)) 19:26	19:49 18:20	08:38 (42110-22) 17:30	14:05 (WEA 06) 16:17
23	05:34 21:29	06:22 (40180-22 (WEA 02)) 20:34	07:12 (40180-22 (WEA01)) 19:24	19:49 18:18	08:38 (42110-22) 17:30	14:05 (WEA 06) 16:18
24	05:36 21:27	06:23 (40180-22 (WEA 02)) 20:32	07:13 (40180-22 (WEA01)) 19:21	19:49 18:15	08:38 (42110-22) 17:30	14:05 (WEA 06) 16:19
25	05:37 21:26	06:25 (40180-22 (WEA 02)) 20:29	07:15 (40180-22 (WEA01)) 19:19	19:49 18:13	08:38 (42110-22) 17:30	14:05 (WEA 06) 16:20
26	05:38 21:25	06:27 (40180-22 (WEA 02)) 20:27	07:16 (40180-22 (WEA01)) 19:17	19:49 18:11	08:38 (42110-22) 17:30	14:05 (WEA 06) 16:20
27	05:40 21:23	06:28 (40180-22 (WEA 02)) 20:25	07:18 (40180-22 (WEA01)) 19:14	19:49 18:09	08:38 (42110-22) 17:30	14:05 (WEA 06) 16:21
28	05:41 21:22	06:29 (40180-22 (WEA 02)) 20:23	07:20 (40180-22 (WEA01)) 19:12	19:49 18:07	08:42 (832-95) 16:22	14:05 (WEA 06) 16:22
29	05:43 21:20	06:31 (40180-22 (WEA 02)) 20:21	07:21 (40180-22 (WEA01)) 19:10	19:49 18:06	08:48 (832-95) 16:22	14:05 (WEA 06) 16:22
30	05:44 21:19	06:33 (40180-22 (WEA 02)) 20:18	07:23 (40180-22 (WEA01)) 19:08	19:49 18:05	08:48 (832-95) 16:22	14:05 (WEA 06) 16:23
31	05:46 21:17	06:35 (40180-22 (WEA 02)) 20:16	07:25 (40180-22 (WEA01)) 19:06	19:49 18:04	08:48 (832-95) 16:22	14:05 (WEA 06) 16:24
Sonnenscheinstunden	500	453	381	332	267	245
astr.max.mögl.Beschattung	190	303	323	199	502	930

Tabellen-Layout: Die Daten für jeden Tag sind in folgender Matrix wiedergegeben (Sommerzeit wie Bezugsjahr):

Tag im Monat	Sonnenaufgang (SS:MM)	Sonnenuntergang (SS:MM)	Minuten mit Schatten	Zeitpunkt (SS:MM) Schattenanfang	Zeitpunkt (SS:MM) Schattenende	(WEA mit erstem Schatten)	(WEA mit letztem Schatten)
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SHADOW - Kalender

Berechnung: Gesamtbelastung Schattenrezeptor: SR H - Kattenecke 15a, 33178 Borchen
Annahmen für Schattenwurfberechnung

Die dargestellten Zeiten sind die astronomisch maximal mögliche Beschattungsdauer, berechnet unter folgenden Annahmen:

- Die Sonne scheint täglich von Sonnenauf- bis -untergang
- Die Rotorfläche steht immer senkrecht zur Sonneneinstrahlung
- Die Windenergieanlage/n ist/sind immer in Betrieb

	Januar	Februar	März	April	Mai	Juni	
1	08:32 16:26	14:24 (WEA 06) 17:13	08:06	07:13 18:04	07:03 19:57	05:14 21:33	
2	08:32 16:27	14:24 (WEA 06) 17:15	08:04 8	07:11 18:06	07:01 19:59	05:13 21:34	
3	08:32 16:28	14:24 (WEA 06) 17:17	08:02 11	07:09 18:08	06:58 20:01	05:13 21:35	
4	08:31 16:29	14:25 (WEA 06) 17:19	08:01 14	07:06 18:09	06:56 20:02	05:12 21:36	
5	08:31 16:30	14:25 (WEA 06) 17:20	07:59 15	07:04 18:11	06:54 20:04	05:11 21:37	
6	08:31 16:32	14:25 (WEA 06) 17:22	07:58 17	07:02 18:13	06:52 20:06	05:10 21:38	
7	08:31 16:33	14:26 (WEA 06) 17:24	07:56 17	07:00 18:15	06:49 20:08	05:10 21:39	
8	08:30 16:34	14:26 (WEA 06) 17:26	07:54 18	06:58 18:16	06:47 20:09	05:09 21:40	
9	08:30 16:35	14:26 (WEA 06) 17:28	07:52 22	06:55 18:18	06:45 20:11	05:09 21:41	
10	08:29 16:37	14:27 (WEA 06) 17:30	07:51 26	06:53 18:20	06:43 20:13	05:08 21:41	
11	08:29 16:38	14:27 (WEA 06) 17:31	07:49 27	06:51 18:22	06:40 20:14	05:08 21:42	
12	08:28 16:40	14:27 (WEA 06) 17:33	07:47 27	06:49 18:23	06:38 20:16	05:08 21:43	
13	08:27 16:41	14:28 (WEA 06) 17:35	07:45 26	06:46 18:25	06:36 20:18	05:08 21:43	
14	08:27 16:43	14:28 (WEA 06) 17:37	07:43 22	06:44 18:27	06:34 20:19	05:07 21:44	
15	08:26 16:44	14:28 (WEA 06) 17:39	07:41 11	06:42 18:29	06:32 20:21	05:07 21:45	
16	08:25 16:46	14:29 (WEA 06) 17:41	07:39 10	06:39 18:30	06:29 20:23	05:07 21:45	
17	08:24 16:47	14:29 (WEA 06) 17:42	07:38 7	06:37 18:32	06:27 20:24	05:07 21:46	
18	08:23 16:49	14:30 (WEA 06) 17:44	07:36 29	06:35 22	06:25 20:26	05:07 21:46	
19	08:22 16:50	14:31 (WEA 06) 17:46	07:34 28	06:33 22	06:23 20:28	05:07 21:46	
20	08:21 16:52	14:32 (WEA 06) 17:48	07:32 27	06:30 22	06:21 20:29	05:07 21:47	
21	08:20 16:54	14:33 (WEA 06) 17:50	07:30 26	06:28 22	06:19 20:31	05:07 21:47	
22	08:19 16:55	14:33 (WEA 06) 17:52	07:28 25	06:26 22	06:17 20:33	05:07 21:47	
23	08:18 16:57	14:35 (WEA 06) 17:53	07:25 23	06:23 20	06:15 20:34	05:08 21:47	
24	08:17 16:59	14:36 (WEA 06) 17:55	07:23 22	06:21 19	06:13 20:36	05:08 21:47	
25	08:15 17:01	14:37 (WEA 06) 17:57	07:21 19	06:19 17	06:11 20:38	05:08 21:47	
26	08:14 17:02	14:40 (WEA 06) 17:59	07:19 9	06:17 13	06:09 20:39	05:09 21:47	
27	08:13 17:04	14:42 (WEA 06) 18:01	07:17 13	06:14 7	06:07 20:41	05:09 21:47	
28	08:11 17:06	14:53 (WEA 06) 18:02	07:15 15	06:12 18:51	06:05 20:43	05:10 21:47	
29	08:10 17:08		07:10	19:52	06:03	05:10 21:47	
30	08:09 17:09		07:07	19:54	06:01	05:11 21:47	
31	08:07 17:11		07:05	19:56	06:00	05:11 21:47	
	Sonnenscheinstunden astr.max.mögl.Beschattung	260 730	278 315	367 352	415 170	484 390	497

Tabellen-Layout: Die Daten für jeden Tag sind in folgender Matrix wiedergegeben (Sommerzeit wie Bezugsjahr):

Tag im Monat	Sonnenaufgang (SS:MM)	Sonnenuntergang (SS:MM)	Minuten mit Schatten	Zeitpunkt (SS:MM) Schattenanfang	Zeitpunkt (SS:MM) Schattende	(WEA mit erstem Schatten)	(WEA mit letztem Schatten)
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SHADOW - Kalender

Berechnung: Gesamtbelastung Schattenrezeptor: SR I - Strothe 4a, 33178 Borchen
Annahmen für Schattenwurfberechnung

Die dargestellten Zeiten sind die astronomisch maximal mögliche Beschattungsdauer, berechnet unter folgenden Annahmen:

- Die Sonne scheint täglich von Sonnenauf- bis -untergang
Die Rotorfläche steht immer senkrecht zur Sonneneinstrahlung
Die Windenergieanlage/n ist/sind immer in Betrieb

Table with columns for months (Juli, August, September, Oktober, November, Dezember) and rows for days, showing solar times and shadow durations.

Tabellen-Layout: Die Daten für jeden Tag sind in folgender Matrix wiedergegeben (Sommerzeit wie Bezugsjahr):

Table with 4 columns: Tag im Monat, Sonnenaufgang (SS:MM), Sonnenuntergang (SS:MM), Minuten mit Schatten, Zeitpunkt (SS:MM) Schattenanfang, Zeitpunkt (SS:MM) Schattenende, (WEA mit erstem Schatten), (WEA mit letztem Schatten)

SHADOW - Kalender

Berechnung: Gesamtbelastung Schattenrezeptor: SR K - Strothe 6, 33178 Borcheln
Annahmen für Schattenwurfberechnung

Die dargestellten Zeiten sind die astronomisch maximal mögliche Beschattungsdauer, berechnet unter folgenden Annahmen:

- Die Sonne scheint täglich von Sonnenauf- bis -untergang
- Die Rotorfläche steht immer senkrecht zur Sonneneinstrahlung
- Die Windenergieanlage/n ist/sind immer in Betrieb

	Januar	Februar	März	April	Mai	Juni
1	08:32	14:55 (WEA 06)	08:06	09:56 (832-95)	07:13	07:03
	16:26	15:15 (WEA 06)	17:13	10:13 (832-95)	08:04	19:57
2	08:32	14:55 (WEA 06)	08:04	09:56 (832-95)	07:11	07:01
	16:27	15:16 (WEA 06)	17:15	10:12 (832-95)	08:06	19:59
3	08:32	14:55 (WEA 06)	08:02	09:57 (832-95)	07:08	08:00 (42110-22)
	16:28	15:16 (WEA 06)	17:17	10:11 (832-95)	08:08	06:58
4	08:31	14:55 (WEA 06)	08:01	09:57 (832-95)	07:06	08:00 (42110-22)
	16:29	15:17 (WEA 06)	17:19	10:10 (832-95)	08:09	06:56
5	08:31	14:56 (WEA 06)	07:59	09:59 (832-95)	07:04	08:01 (42110-22)
	16:30	15:18 (WEA 06)	17:20	10:10 (832-95)	08:11	06:54
6	08:31	14:55 (WEA 06)	07:58	10:01 (832-95)	07:02	08:04 (42110-22)
	16:31	15:19 (WEA 06)	17:22	15 16:36 (40557-22 (01))	18:13	08:12 (42110-22)
7	08:31	14:56 (WEA 06)	07:56	16:26 (40557-22 (01))	07:00	06:49
	16:33	15:20 (WEA 06)	17:24	16:38 (40557-22 (01))	18:15	07:24 (42118-15, 40502-19(1))
8	08:30	14:55 (WEA 06)	07:54	16:25 (40557-22 (01))	06:58	07:22 (42118-15, 40502-19(1))
	16:34	15:20 (WEA 06)	17:26	16:39 (40557-22 (01))	18:16	08:40
9	08:30	14:55 (WEA 06)	07:52	16:24 (40557-22 (01))	06:55	07:20 (42118-15, 40502-19(1))
	16:35	15:21 (WEA 06)	17:28	16:39 (40557-22 (01))	18:18	07:33 (42118-15, 40502-19(1))
10	08:29	14:56 (WEA 06)	07:51	16:24 (40557-22 (01))	06:53	07:20 (42118-15, 40502-19(1))
	16:37	15:22 (WEA 06)	17:30	16:40 (40557-22 (01))	18:20	07:33 (42118-15, 40502-19(1))
11	08:29	14:56 (WEA 06)	07:49	16:24 (40557-22 (01))	06:51	07:20 (42118-15, 40502-19(1))
	16:38	15:22 (WEA 06)	17:31	16:41 (40557-22 (01))	18:22	07:33 (42118-15, 40502-19(1))
12	08:28	14:56 (WEA 06)	07:47	16:24 (40557-22 (01))	06:49	07:20 (42118-15, 40502-19(1))
	16:40	15:23 (WEA 06)	17:33	16:41 (40557-22 (01))	18:23	07:33 (42118-15, 40502-19(1))
13	08:27	14:56 (WEA 06)	07:45	16:25 (40557-22 (01))	06:46	07:21 (42118-15, 40502-19(1))
	16:41	15:23 (WEA 06)	17:35	16:41 (40557-22 (01))	18:25	07:32 (42118-15, 40502-19(1))
14	08:27	14:56 (WEA 06)	07:43	16:25 (40557-22 (01))	06:44	07:22 (42118-15, 40502-19(1))
	16:43	15:24 (WEA 06)	17:37	16:40 (40557-22 (01))	18:27	07:30 (42118-15, 40502-19(1))
15	08:26	14:56 (WEA 06)	07:41	16:26 (40557-22 (01))	06:42	07:30 (42118-15, 40502-19(1))
	16:44	15:24 (WEA 06)	17:39	16:39 (40557-22 (01))	18:29	07:43 (40614-20)
16	08:25	14:56 (WEA 06)	07:39	16:27 (40557-22 (01))	06:39	07:24 (40614-20)
	16:46	15:25 (WEA 06)	17:41	16:38 (40557-22 (01))	18:30	07:45 (40614-20)
17	08:24	14:57 (WEA 06)	07:38	16:30 (40557-22 (01))	06:37	07:23 (40614-20)
	16:47	15:25 (WEA 06)	17:42	16:35 (40557-22 (01))	18:32	07:45 (40614-20)
18	08:23	14:57 (WEA 06)	07:36	16:35 (40557-22 (01))	06:35	07:21 (40614-20)
	16:49	15:26 (WEA 06)	17:44	18:34	24	07:45 (40614-20)
19	08:22	14:57 (WEA 06)	07:34	16:33 (40557-22 (01))	06:33	07:21 (40614-20)
	16:50	15:26 (WEA 06)	17:46	18:35	24	07:45 (40614-20)
20	08:21	14:58 (WEA 06)	07:32	16:30 (40557-22 (01))	06:30	07:21 (40614-20)
	16:52	15:26 (WEA 06)	17:48	18:37	24	07:45 (40614-20)
21	08:20	14:59 (WEA 06)	07:30	16:28 (40557-22 (01))	06:28	07:21 (40614-20)
	16:54	15:27 (WEA 06)	17:50	18:39	24	07:45 (40614-20)
22	08:19	14:59 (WEA 06)	07:28	16:26 (40557-22 (01))	06:26	07:20 (40614-20)
	16:55	15:26 (WEA 06)	17:52	18:41	24	07:44 (40614-20)
23	08:18	15:00 (WEA 06)	07:25	16:23 (40557-22 (01))	06:23	07:20 (40614-20)
	16:57	15:26 (WEA 06)	17:53	18:42	24	07:44 (40614-20)
24	08:17	09:59 (832-95)	07:23	16:03 (42110-22)	06:21	07:21 (40614-20)
	16:59	15:27 (WEA 06)	17:55	18:44	22	07:43 (40614-20)
25	08:15	09:57 (832-95)	07:21	16:02 (42110-22)	06:19	07:21 (40614-20)
	17:01	15:26 (WEA 06)	17:57	18:47	20	07:41 (40614-20)
26	08:14	09:57 (832-95)	07:19	16:01 (42110-22)	06:17	07:22 (40614-20)
	17:02	15:26 (WEA 06)	17:59	18:48	17	07:39 (40614-20)
27	08:13	09:55 (832-95)	07:17	16:00 (42110-22)	06:14	07:24 (40614-20)
	17:04	15:25 (WEA 06)	18:01	18:49	13	07:37 (40614-20)
28	08:11	09:56 (832-95)	07:15	16:02 (42110-22)	06:12	07:28 (40614-20)
	17:06	15:24 (WEA 06)	18:02	18:51	4	07:32 (40614-20)
29	08:10	09:55 (832-95)	07:13	16:01 (42110-22)	06:10	07:30 (40614-20)
	17:08	15:23 (WEA 06)	18:03	19:52	06:03	07:30 (40614-20)
30	08:09	09:55 (832-95)	07:11	16:00 (42110-22)	06:01	07:30 (40614-20)
	17:09	15:22 (WEA 06)	18:05	19:54	20:46	
31	08:07	09:55 (832-95)	07:09	16:00 (42110-22)	06:00	
	17:11	15:19 (WEA 06)	18:07	19:56	21:32	
Sonnenscheinstunden	260	278	326	367	415	484
astr.max.mögl.Beschattung	856	326	396	415	90	462

Tabellen-Layout: Die Daten für jeden Tag sind in folgender Matrix wiedergegeben (Sommerzeit wie Bezugsjahr):

Tag im Monat	Sonnenaufgang (SS:MM)	Sonnenuntergang (SS:MM)	Minuten mit Schatten	Zeitpunkt (SS:MM) Schattenanfang	Zeitpunkt (SS:MM) Schattenende	(WEA mit erstem Schatten)	(WEA mit letztem Schatten)
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SHADOW - Kalender

Berechnung: Gesamtbelastung Schattenrezeptor: SR K - Strothe 6, 33178 Borcheln
Annahmen für Schattenwurfberechnung

Die dargestellten Zeiten sind die astronomisch maximal mögliche Beschattungsdauer, berechnet unter folgenden Annahmen:

- Die Sonne scheint täglich von Sonnenauf- bis -untergang
- Die Rotorfläche steht immer senkrecht zur Sonneneinstrahlung
- Die Windenergieanlage/n ist/sind immer in Betrieb

Juli		August		September		Oktober		November		Dezember	
1	05:11 21:47										
2	05:12 21:46										
3	05:13 21:46	06:34 (40180-22 (WEA01))	05:50								
4	05:13 21:46	06:34 (40180-22 (WEA01))	05:52								
5	05:14 21:45	06:32 (40180-22 (WEA01))	05:53								
6	05:15 21:45	06:32 (40180-22 (WEA01))	05:55								
7	05:16 21:44	06:31 (40180-22 (WEA01))	05:56								
8	05:17 21:43	06:31 (40180-22 (WEA01))	05:58								
9	05:18 21:43	06:31 (40180-22 (WEA01))	06:00								
10	05:19 21:42	06:30 (40180-22 (WEA01))	06:01								
11	05:20 21:41	06:30 (40180-22 (WEA01))	06:03								
12	05:21 21:41	06:30 (40180-22 (WEA01))	06:04								
13	05:21 21:41	06:29 (40180-22 (WEA01))	06:06								
14	05:22 21:40	06:29 (40180-22 (WEA01))	06:07								
15	05:24 21:39	06:29 (40180-22 (WEA01))	06:09								
16	05:25 21:37	06:28 (40180-22 (WEA01))	06:11								
17	05:27 21:36	06:28 (40180-22 (WEA01))	06:12								
18	05:28 21:35	06:28 (40180-22 (WEA01))	06:14								
19	05:29 21:34	06:28 (40180-22 (WEA01))	06:15								
20	05:30 21:32	06:28 (40180-22 (WEA01))	06:17								
21	05:32 21:31	06:28 (40180-22 (WEA01))	06:19								
22	05:33 21:30	06:28 (40180-22 (WEA01))	06:20								
23	05:34 21:29	06:28 (40180-22 (WEA01))	06:22								
24	05:36 21:27	06:28 (40180-22 (WEA01))	06:23								
25	05:37 21:26	06:28 (40180-22 (WEA01))	06:25								
26	05:38 21:25	06:29 (40180-22 (WEA01))	06:27								
27	05:40 21:23	06:29 (40180-22 (WEA01))	06:28								
28	05:41 21:22	06:29 (40180-22 (WEA01))	06:30								
29	05:43 21:20	06:30 (40180-22 (WEA01))	06:31								
30	05:44 21:19	06:30 (40180-22 (WEA01))	06:33								
31	05:46 21:17	06:31 (40180-22 (WEA01))	06:35								
Sonnenscheinstunden		500									
astr.max.mögl.Beschattung		557									

Tabellen-Layout: Die Daten für jeden Tag sind in folgender Matrix wiedergegeben (Sommerzeit wie Bezugsjahr):

Tag im Monat	Sonnenaufgang (SS:MM)	Sonnenuntergang (SS:MM)	Minuten mit Schatten	Zeitpunkt (SS:MM) Schattenanfang	Zeitpunkt (SS:MM) Schattenende	(WEA mit erstem Schatten)	(WEA mit letztem Schatten)
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SHADOW - Kalender

Berechnung: Gesamtbelastung Schattenrezeptor: SR L - Strothe 1, 33178 Borchon
Annahmen für Schattenwurfberechnung

- Die dargestellten Zeiten sind die astronomisch maximal mögliche Beschattungsdauer, berechnet unter folgenden Annahmen:
- Die Sonne scheint täglich von Sonnenauf- bis -untergang
- Die Rotorfläche steht immer senkrecht zur Sonneneinstrahlung
- Die Windenergieanlage/n ist/sind immer in Betrieb

	Jul	August	September	Oktober	November	Dezember	
1	05:11 21:47	06:03 (40180-22 (WEA01)) 06:29 (40180-22 (WEA01))	05:47 21:15	06:36 20:14	07:25 19:05	08:08 16:20	
2	05:12 21:46	06:03 (40180-22 (WEA01)) 06:28 (40180-22 (WEA01))	05:49 21:14	06:38 20:12	07:26 19:03	08:10 16:19	
3	05:13 21:46	06:03 (40180-22 (WEA01)) 06:29 (40180-22 (WEA01))	05:50 21:12	06:39 20:10	07:28 19:01	08:11 16:19	
4	05:13 21:46	06:04 (40180-22 (WEA01)) 06:29 (40180-22 (WEA01))	05:52 21:10	06:41 20:07	07:30 18:58	08:12 16:18	
5	05:14 21:45	06:03 (40180-22 (WEA01)) 06:28 (40180-22 (WEA01))	05:53 21:09	06:43 20:05	07:31 18:56	08:14 16:18	
6	05:15 21:45	06:04 (40180-22 (WEA01)) 06:29 (40180-22 (WEA01))	05:55 21:07	06:44 20:03	07:33 18:54	08:15 16:17	
7	05:16 21:44	06:05 (40180-22 (WEA01)) 06:29 (40180-22 (WEA01))	05:56 21:05	06:46 20:01	07:35 18:52	08:16 16:17	
8	05:17 21:43	06:05 (40180-22 (WEA01)) 06:29 (40180-22 (WEA01))	05:58 21:03	06:47 19:58	07:36 18:49	08:17 16:17	
9	05:18 21:43	06:05 (40180-22 (WEA01)) 06:29 (40180-22 (WEA01))	06:00 21:02	06:49 19:56	07:38 18:47	08:18 16:16	
10	05:19 21:42	06:06 (40180-22 (WEA01)) 06:29 (40180-22 (WEA01))	06:01 21:00	06:51 19:54	07:40 18:45	08:20 16:16	
11	05:20 21:41	06:06 (40180-22 (WEA01)) 06:29 (40180-22 (WEA01))	06:03 20:58	06:52 19:51	07:41 18:43	08:21 16:16	
12	05:21 21:41	06:07 (40180-22 (WEA01)) 06:29 (40180-22 (WEA01))	06:04 20:56	06:54 19:49	07:43 18:41	08:22 16:16	
13	05:22 21:40	06:08 (40180-22 (WEA01)) 06:28 (40180-22 (WEA01))	06:06 20:54	06:55 19:47	07:45 18:38	08:23 16:16	
14	05:23 21:39	06:08 (40180-22 (WEA01)) 06:28 (40180-22 (WEA01))	06:07 20:52	06:57 19:44	07:46 18:36	08:24 16:16	
15	05:24 21:38	06:09 (40180-22 (WEA01)) 06:27 (40180-22 (WEA01))	06:09 20:50	06:59 19:42	07:48 18:34	08:25 16:16	
16	05:25 21:37	06:09 (40180-22 (WEA01)) 06:27 (40180-22 (WEA01))	06:11 20:48	07:00 19:40	07:50 18:32	08:26 16:16	
17	05:27 21:36	06:10 (40180-22 (WEA01)) 06:26 (40180-22 (WEA01))	06:12 20:46	07:02 19:38	07:51 18:30	08:27 16:16	
18	05:28 21:35	06:11 (40180-22 (WEA01)) 06:24 (40180-22 (WEA01))	06:14 20:44	07:04 19:35	07:53 18:28	08:28 16:16	
19	05:29 21:34	06:14 (40180-22 (WEA01)) 06:24 (40180-22 (WEA01))	06:15 20:42	07:05 19:33	07:55 18:25	08:29 16:17	
20	05:30 21:32	06:17 (40180-22 (WEA01)) 06:21 (40180-22 (WEA01))	06:17 20:40	07:07 19:31	07:57 18:23	08:28 16:17	
21	05:32 21:31	06:19 07:11 (42118-15, 40502-19(1))	06:19 07:08	07:08 19:28	07:58 18:21	08:29 16:17	
22	05:33 21:30	06:20 07:20 (42118-15, 40502-19(1))	06:20 07:10	07:10 19:26	08:00 18:19	08:29 16:18	
23	05:34 21:29	06:22 07:21 (42118-15, 40502-19(1))	06:22 07:08	07:12 19:24	08:02 18:17	08:30 16:18	
24	05:36 21:27	06:23 07:21 (42118-15, 40502-19(1))	06:23 07:13	07:13 19:21	08:04 18:15	08:30 16:19	
25	05:37 21:26	06:25 07:21 (42118-15, 40502-19(1))	06:25 07:15	07:15 19:19	08:05 18:13	08:31 16:20	
26	05:38 21:25	06:27 07:21 (42118-15, 40502-19(1))	06:27 07:16	07:16 19:17	08:07 18:11	08:31 16:20	
27	05:40 21:23	06:28 07:21 (42118-15, 40502-19(1))	06:28 07:17	07:17 19:14	08:09 18:09	08:31 16:21	
28	05:41 21:22	06:30 07:21 (42118-15, 40502-19(1))	06:30 07:20	07:20 19:12	08:11 18:07	08:32 16:22	
29	05:43 21:20	06:31 07:21 (42118-15, 40502-19(1))	06:31 07:21	07:21 19:10	08:12 18:05	08:32 16:23	
30	05:44 21:19	06:33 07:21 (42118-15, 40502-19(1))	06:33 07:23	07:23 19:08	08:14 18:03	08:32 16:24	
31	05:46 21:17	06:35 20:16	06:35 20:16	07:25 19:06	08:16 18:01	08:32 16:25	
	Sonnenscheinstunden astr.max.mögl.Beschattung	500 411	453 113	381 395	332 517	267 919	245

Tabellen-Layout: Die Daten für jeden Tag sind in folgender Matrix wiedergegeben (Sommerzeit wie Bezugsjahr):

Tag im Monat	Sonnenaufgang (SS:MM)	Zeitpunkt (SS:MM) Schattenanfang (WEA mit erstem Schatten)	Minuten mit Schatten	Zeitpunkt (SS:MM) Schattende (WEA mit letztem Schatten)
	Sonnenuntergang (SS:MM)			

SHADOW - Kalender

Berechnung: Gesamtbelastung Schattenrezeptor: SR M - Vienenburg 2, 33165 Lichtenau
Annahmen für Schattenwurfberechnung

Die dargestellten Zeiten sind die astronomisch maximal mögliche Beschattungsdauer, berechnet unter folgenden Annahmen:

- Die Sonne scheint täglich von Sonnenauf- bis -untergang
- Die Rotorfläche steht immer senkrecht zur Sonneneinfallrichtung
- Die Windenergieanlage/n ist/sind immer in Betrieb

	Januar	Februar	März	April	Mai		Juni	
1	08:32 16:26	08:06 17:13	07:13 18:04	07:03 19:57	05:59 20:48		05:14 21:33	26 19:43 (WEA 04) 20:09 (WEA 04)
2	08:32 16:27	08:04 17:15	07:11 18:06	07:01 19:59	05:57 20:49		05:13 21:34	25 19:44 (WEA 04) 20:09 (WEA 04)
3	08:32 16:28	08:02 17:17	07:08 18:08	06:58 20:01	05:55 20:51		05:12 21:35	25 19:44 (WEA 04) 20:09 (WEA 04)
4	08:31 16:29	08:01 17:19	07:06 18:09	06:56 20:02	05:53 20:53		05:11 21:36	24 19:45 (WEA 04) 20:09 (WEA 04)
5	08:31 16:30	07:59 17:20	07:04 18:11	06:54 20:04	05:51 20:54		05:11 21:37	24 19:45 (WEA 04) 20:09 (WEA 04)
6	08:31 16:32	07:58 17:22	07:02 18:13	06:52 20:06	05:50 20:56	7	19:51 (WEA 04) 19:58 (WEA 04)	22 19:46 (WEA 04) 20:08 (WEA 04)
7	08:30 16:33	07:56 17:24	07:00 18:15	06:49 20:07	05:48 20:57	13	19:49 (WEA 04) 20:02 (WEA 04)	21 19:47 (WEA 04) 20:08 (WEA 04)
8	08:30 16:34	07:54 17:26	06:57 18:16	06:47 20:09	05:46 20:59	18	19:46 (WEA 04) 20:04 (WEA 04)	25 19:48 (WEA 04) 20:51 (40557-22 (01))
9	08:30 16:35	07:52 17:28	06:55 18:18	06:45 20:11	05:44 21:01	21	19:44 (WEA 04) 20:05 (WEA 04)	26 19:48 (WEA 04) 20:52 (40557-22 (01))
10	08:29 16:37	07:51 17:30	06:53 18:20	06:43 20:13	05:43 21:02	22	19:44 (WEA 04) 20:06 (WEA 04)	27 19:49 (WEA 04) 20:53 (40557-22 (01))
11	08:29 16:38	07:49 17:31	06:51 18:22	06:40 20:14	05:41 21:04	25	19:42 (WEA 04) 20:07 (WEA 04)	28 19:50 (WEA 04) 20:54 (40557-22 (01))
12	08:28 16:40	07:47 17:33	06:49 18:23	06:38 20:16	05:39 21:05	26	19:42 (WEA 04) 20:08 (WEA 04)	28 19:50 (WEA 04) 20:54 (40557-22 (01))
13	08:27 16:41	07:45 17:35	06:46 18:25	06:36 20:18	05:38 21:07	27	19:41 (WEA 04) 20:08 (WEA 04)	29 19:50 (WEA 04) 20:55 (40557-22 (01))
14	08:26 16:43	07:43 17:37	06:44 18:27	06:34 20:19	05:36 21:08	28	19:41 (WEA 04) 20:09 (WEA 04)	27 19:51 (WEA 04) 20:55 (40557-22 (01))
15	08:26 16:44	07:41 17:39	06:42 18:29	06:32 20:21	05:35 21:10	29	19:41 (WEA 04) 20:10 (WEA 04)	27 19:52 (WEA 04) 20:56 (40557-22 (01))
16	08:25 16:46	07:39 17:41	06:39 18:30	06:29 20:23	05:33 21:11	30	19:40 (WEA 04) 20:10 (WEA 04)	27 19:52 (WEA 04) 20:56 (40557-22 (01))
17	08:24 16:47	07:38 17:43	06:37 18:32	06:27 20:24	05:32 21:13	30	19:40 (WEA 04) 20:10 (WEA 04)	26 19:53 (WEA 04) 20:57 (40557-22 (01))
18	08:23 16:49	07:36 17:44	06:35 18:34	06:25 20:26	05:30 21:14	31	19:40 (WEA 04) 20:11 (WEA 04)	26 19:53 (WEA 04) 20:57 (40557-22 (01))
19	08:22 16:51	07:34 17:46	06:33 18:35	06:23 20:28	05:29 21:16	31	19:39 (WEA 04) 20:10 (WEA 04)	25 19:54 (WEA 04) 20:57 (40557-22 (01))
20	08:21 16:52	07:32 17:48	06:30 18:37	06:21 20:29	05:27 21:17	31	19:39 (WEA 04) 20:10 (WEA 04)	25 19:54 (WEA 04) 20:57 (40557-22 (01))
21	08:20 16:54	07:30 17:50	06:28 18:39	06:19 20:31	05:26 21:19	31	19:40 (WEA 04) 20:11 (WEA 04)	25 19:54 (WEA 04) 20:57 (40557-22 (01))
22	08:19 16:56	07:28 17:52	06:26 18:41	06:17 20:33	05:25 21:20	31	19:40 (WEA 04) 20:11 (WEA 04)	25 19:55 (WEA 04) 20:58 (40557-22 (01))
23	08:18 16:57	07:25 17:53	06:23 18:42	06:15 20:34	05:24 21:22	31	19:40 (WEA 04) 20:11 (WEA 04)	25 19:55 (WEA 04) 20:58 (40557-22 (01))
24	08:17 16:59	07:23 17:55	06:21 18:44	06:13 20:36	05:22 21:23	31	19:40 (WEA 04) 20:11 (WEA 04)	26 19:54 (WEA 04) 20:58 (40557-22 (01))
25	08:15 17:01	07:21 17:57	06:19 18:46	06:11 20:38	05:21 21:24	30	19:41 (WEA 04) 20:11 (WEA 04)	26 19:55 (WEA 04) 20:59 (40557-22 (01))
26	08:14 17:02	07:19 17:59	06:17 18:47	06:09 20:39	05:20 21:26	30	19:41 (WEA 04) 20:11 (WEA 04)	26 19:55 (WEA 04) 20:59 (40557-22 (01))
27	08:13 17:04	07:17 18:01	06:14 18:49	06:07 20:41	05:19 21:27	30	19:41 (WEA 04) 20:11 (WEA 04)	27 19:54 (WEA 04) 20:58 (40557-22 (01))
28	08:11 17:06	07:15 18:02	06:12 18:51	06:05 20:43	05:18 21:28	29	19:42 (WEA 04) 20:11 (WEA 04)	27 19:54 (WEA 04) 20:58 (40557-22 (01))
29	08:10 17:08		07:10 19:52	06:03 20:44	05:17 21:29	28	19:42 (WEA 04) 20:10 (WEA 04)	27 19:54 (WEA 04) 20:58 (40557-22 (01))
30	08:08 17:10		07:07 19:54	06:01 20:46	05:16 21:30	28	19:42 (WEA 04) 20:10 (WEA 04)	27 19:54 (WEA 04) 20:58 (40557-22 (01))
31	08:07 17:11		07:05 19:56		05:15 21:32	27	19:42 (WEA 04) 20:09 (WEA 04)	28 19:54 (WEA 04) 20:58 (40557-22 (01))
Sonnenscheinstunden	260	278	367	415	484		497	
astr.max.mögl.Beschattung						695		775

Tabellen-Layout: Die Daten für jeden Tag sind in folgender Matrix wiedergegeben (Sommerzeit wie Bezugsjahr):

Tag im Monat	Sonnenaufgang (SS:MM)	Sonnenuntergang (SS:MM)	Minuten mit Schatten	Zeitpunkt (SS:MM) Schattenanfang	Zeitpunkt (SS:MM) Schattenende	Schattenanfang (WEA mit erstem Schatten)	Schattenende (WEA mit letztem Schatten)
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SHADOW - Kalender

Berechnung: Gesamtbelastung Schattenrezeptor: SR M - Vienenburg 2, 33165 Lichtenau
Annahmen für Schattenwurfberechnung

Die dargestellten Zeiten sind die astronomisch maximal mögliche Beschattungsdauer, berechnet unter folgenden Annahmen:

- Die Sonne scheint täglich von Sonnenauf- bis -untergang
- Die Rotorfläche steht immer senkrecht zur Sonneneinstrahlung
- Die Windenergieanlage/n ist/sind immer in Betrieb

Juli		August		September		Oktober		November		Dezember	
1	05:11	19:54 (WEA 04)	05:47	19:52 (WEA 04)	06:36	07:25	07:18	08:08			
	21:47	20:58 (40557-22 (01))	21:15	20:18 (WEA 04)	20:14	19:05	17:00	16:20			
2	05:12	19:53 (WEA 04)	05:49	19:53 (WEA 04)	06:38	07:26	07:19	08:09			
	21:46	20:57 (40557-22 (01))	21:14	20:17 (WEA 04)	20:12	19:03	16:58	16:19			
3	05:13	19:53 (WEA 04)	05:50	19:54 (WEA 04)	06:40	07:28	07:21	08:11			
	21:46	20:57 (40557-22 (01))	21:12	20:16 (WEA 04)	20:10	19:01	16:56	16:19			
4	05:13	19:53 (WEA 04)	05:52	19:55 (WEA 04)	06:41	07:30	07:23	08:12			
	21:46	20:57 (40557-22 (01))	21:10	20:15 (WEA 04)	20:07	18:58	16:54	16:18			
5	05:14	19:53 (WEA 04)	05:53	19:57 (WEA 04)	06:43	07:31	07:25	08:13			
	21:45	20:55 (40557-22 (01))	21:09	20:13 (WEA 04)	20:05	18:56	16:53	16:18			
6	05:15	19:52 (WEA 04)	05:55	19:59 (WEA 04)	06:44	07:33	07:27	08:15			
	21:45	20:14 (WEA 04)	21:07	20:11 (WEA 04)	20:03	18:54	16:51	16:17			
7	05:16	19:52 (WEA 04)	05:56		06:46	07:35	07:28	08:16			
	21:44	20:15 (WEA 04)	21:05		20:01	18:52	16:49	16:17			
8	05:17	19:52 (WEA 04)	05:58		06:48	07:36	07:30	08:17			
	21:43	20:15 (WEA 04)	21:03		19:58	18:49	16:48	16:17			
9	05:18	19:52 (WEA 04)	06:00		06:49	07:38	07:32	08:18			
	21:43	20:16 (WEA 04)	21:01		19:56	18:47	16:46	16:16			
10	05:19	19:51 (WEA 04)	06:01		06:51	07:40	07:34	08:19			
	21:42	20:17 (WEA 04)	21:00		19:54	18:45	16:44	16:16			
11	05:20	19:51 (WEA 04)	06:03		06:52	07:41	07:35	08:21			
	21:41	20:17 (WEA 04)	20:58		19:51	18:43	16:43	16:16			
12	05:21	19:51 (WEA 04)	06:04		06:54	07:43	07:37	08:22			
	21:40	20:18 (WEA 04)	20:56		19:49	18:41	16:41	16:16			
13	05:22	19:51 (WEA 04)	06:06		06:56	07:45	07:39	08:23			
	21:40	20:18 (WEA 04)	20:54		19:47	18:38	16:40	16:16			
14	05:23	19:50 (WEA 04)	06:08		06:57	07:46	07:41	08:24			
	21:39	20:19 (WEA 04)	20:52		19:44	18:36	16:38	16:16			
15	05:24	19:50 (WEA 04)	06:09		06:59	07:48	07:42	08:24			
	21:38	20:19 (WEA 04)	20:50		19:42	18:34	16:37	16:16			
16	05:25	19:50 (WEA 04)	06:11		07:00	07:50	07:44	08:25			
	21:37	20:19 (WEA 04)	20:48		19:40	18:32	16:36	16:16			
17	05:27	19:50 (WEA 04)	06:12		07:02	07:51	07:46	08:26			
	21:36	20:19 (WEA 04)	20:46		19:38	18:30	16:34	16:16			
18	05:28	19:49 (WEA 04)	06:14		07:04	07:53	07:47	08:27			
	21:35	20:19 (WEA 04)	20:44		19:35	18:28	16:33	16:16			
19	05:29	19:50 (WEA 04)	06:15		07:05	07:55	07:49	08:28			
	21:33	20:21 (WEA 04)	20:42		19:33	18:26	16:32	16:17			
20	05:30	19:50 (WEA 04)	06:17		07:07	07:57	07:51	08:28			
	21:32	20:21 (WEA 04)	20:40		19:31	18:23	16:30	16:17			
21	05:32	19:49 (WEA 04)	06:19		07:08	07:58	07:52	08:29			
	21:31	20:20 (WEA 04)	20:38		19:28	18:21	16:29	16:18			
22	05:33	19:49 (WEA 04)	06:20		07:10	08:00	07:54	08:29			
	21:30	20:20 (WEA 04)	20:36		19:26	18:19	16:28	16:18			
23	05:34	19:50 (WEA 04)	06:22		07:12	08:02	07:56	08:30			
	21:29	20:21 (WEA 04)	20:34		19:24	18:17	16:27	16:19			
24	05:36	19:50 (WEA 04)	06:23		07:13	08:04	07:57	08:30			
	21:27	20:21 (WEA 04)	20:31		19:21	18:15	16:26	16:19			
25	05:37	19:50 (WEA 04)	06:25		07:15	07:05	07:59	08:31			
	21:26	20:20 (WEA 04)	20:29		19:19	17:13	16:25	16:20			
26	05:39	19:50 (WEA 04)	06:27		07:16	07:07	08:01	08:31			
	21:24	20:21 (WEA 04)	20:27		19:17	17:11	16:24	16:20			
27	05:40	19:50 (WEA 04)	06:28		07:18	07:09	08:02	08:31			
	21:23	20:20 (WEA 04)	20:25		19:14	17:09	16:23	16:21			
28	05:41	19:50 (WEA 04)	06:30		07:20	07:11	08:04	08:31			
	21:22	20:20 (WEA 04)	20:23		19:12	17:07	16:22	16:22			
29	05:43	19:51 (WEA 04)	06:31		07:21	07:12	08:05	08:32			
	21:20	20:20 (WEA 04)	20:21		19:10	17:05	16:22	16:23			
30	05:44	19:51 (WEA 04)	06:33		07:23	07:14	08:07	08:32			
	21:19	20:19 (WEA 04)	20:18		19:08	17:04	16:21	16:24			
31	05:46	19:51 (WEA 04)	06:35			07:16		08:32			
	21:17	20:18 (WEA 04)	20:16			17:02		16:25			
Sonnenscheinstunden		500	453		381	332	267	245			
astr.max.mögl.Beschattung		866	120								

Tabellen-Layout: Die Daten für jeden Tag sind in folgender Matrix wiedergegeben (Sommerzeit wie Bezugsjahr):

Tag im Monat	Sonnenaufgang (SS:MM)	Sonnenuntergang (SS:MM)	Minuten mit Schatten	Zeitpunkt (SS:MM) Schattenanfang	Zeitpunkt (SS:MM) Schattende	(WEA mit erstem Schatten)	(WEA mit letztem Schatten)
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SHADOW - Kalender

Berechnung: Gesamtbelastung Schattenrezeptor: SR O - Zum Menthal 1, 33165 Lichtenau
Annahmen für Schattenwurfberechnung

- Die dargestellten Zeiten sind die astronomisch maximal mögliche Beschattungsdauer, berechnet unter folgenden Annahmen:
Die Sonne scheint täglich von Sonnenauf- bis -untergang
Die Rotorfläche steht immer senkrecht zur Sonneneinstrahlung
Die Windenergieanlage/n ist/sind immer in Betrieb

Table with 12 columns for months (Januar to Dezember) and rows for each day of the year, showing start and end times of shadowing and total hours of shadowing.

Tabellen-Layout: Die Daten für jeden Tag sind in folgender Matrix wiedergegeben (Sommerzeit wie Bezugsjahr):

Table with 4 columns: Tag im Monat, Sonnenaufgang (SS:MM), Sonnenuntergang (SS:MM), Minuten mit Schatten, Zeitpunkt (SS:MM) Schattenanfang, Zeitpunkt (SS:MM) Schattenende, (WEA mit erstem Schatten), (WEA mit letztem Schatten)

SHADOW - Kalender

Berechnung: Gesamtbelastung Schattenrezeptor: SR P - Zum Menthal 4, 33165 Lichtenau
Annahmen für Schattenwurfberechnung

Die dargestellten Zeiten sind die astronomisch maximal mögliche Beschattungsdauer, berechnet unter folgenden Annahmen:

- Die Sonne scheint täglich von Sonnenauf- bis -untergang
- Die Rotorfläche steht immer senkrecht zur Sonneneinstrahlung
- Die Windenergieanlage/n ist/sind immer in Betrieb

	Januar	Februar	März	April	Mai	Juni	Juli	August	September	Oktober	November	Dezember
1	08:32 16:26	08:06 17:13	07:13 18:04	07:03 19:57	05:59 20:48	05:14 21:33	05:11 21:47	05:47 21:15	06:36 20:14	07:25 19:05	07:18 17:00	08:08 16:20
2	08:32 16:27	08:04 17:15	07:11 18:06	07:01 19:59	05:57 20:49	05:13 21:34	05:12 21:46	05:49 21:14	06:38 20:12	07:26 19:03	07:19 16:58	08:09 16:19
3	08:32 16:28	08:02 17:17	07:08 18:08	06:58 20:01	05:55 20:51	05:13 21:35	05:13 21:46	05:50 21:12	06:40 20:10	07:28 19:01	07:21 16:56	08:11 16:19
4	08:31 16:29	08:01 17:19	07:06 18:09	06:56 20:02	05:53 20:53	05:12 21:36	05:13 21:46	05:52 21:10	06:41 20:07	07:30 18:58	07:23 16:54	08:12 16:18
5	08:31 16:30	07:59 17:20	07:04 18:11	06:54 20:04	05:51 20:54	05:11 21:37	05:14 21:45	05:53 21:09	06:43 20:05	07:31 18:56	07:25 16:53	08:13 16:18
6	08:31 16:32	07:58 17:22	07:02 18:13	06:52 20:06	05:50 20:56	05:11 21:38	05:15 21:45	05:55 21:07	06:44 20:03	07:33 18:54	07:27 16:51	08:15 16:17
7	08:30 16:33	07:56 17:24	07:00 18:15	06:49 20:07	05:48 20:57	05:10 21:39	05:16 21:44	05:56 21:05	06:46 20:01	07:35 18:52	07:28 16:49	08:16 16:17
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Sonnenscheinstunden astr.max.mögl.Beschattung	260	278	367	415	484	497	500	453	381	332	267	245

Tabellen-Layout: Die Daten für jeden Tag sind in folgender Matrix wiedergegeben (Sommerzeit wie Bezugsjahr):

Tag im Monat	Sonnenaufgang (SS:MM)	Sonnenuntergang (SS:MM)	Minuten mit Schatten	Zeitpunkt (SS:MM) Schattenanfang	Zeitpunkt (SS:MM) Schattende	(WEA mit erstem Schatten)	(WEA mit letztem Schatten)
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SHADOW - Kalender

Berechnung: Gesamtbelastung Schattenrezeptor: SR Q - Zum Menthal 7, 33165 Lichtenau
Annahmen für Schattenwurfberechnung

- Die dargestellten Zeiten sind die astronomisch maximal mögliche Beschattungsdauer, berechnet unter folgenden Annahmen:
Die Sonne scheint täglich von Sonnenauf- bis -untergang
Die Rotorfläche steht immer senkrecht zur Sonneneinstrahlung
Die Windenergieanlage/n ist/sind immer in Betrieb

Table with 12 columns (Januar to Dezember) and 12 rows (1 to 12), containing solar radiation and shadow data for each day.

Tabellen-Layout: Die Daten für jeden Tag sind in folgender Matrix wiedergegeben (Sommerzeit wie Bezugsjahr):

Table with 4 columns: Tag im Monat, Sonnenaufgang (SS:MM), Sonnenuntergang (SS:MM), and Zeitpunkte für Schattenanfang und -ende.



SHADOW - Kalender

Berechnung: Gesamtbelastung Schattenrezeptor: SR R - An d. Lieth 41, 33165 Lichtenau
Annahmen für Schattenwurfberechnung

Die dargestellten Zeiten sind die astronomisch maximal mögliche Beschattungsdauer, berechnet unter folgenden Annahmen:

- Die Sonne scheint täglich von Sonnenauf- bis -untergang
- Die Rotorfläche steht immer senkrecht zur Sonneneinstrahlung
- Die Windenergieanlage/n ist/sind immer in Betrieb

	Januar	Februar	März	April	Mai	Juni	Juli	August	September	Oktober	November	Dezember
1	08:32 16:26	08:06 17:13	07:13 18:04	07:03 19:57	05:59 20:48	05:14 21:33	05:11 21:47	05:47 21:15	06:36 20:14	07:25 19:05	07:18 17:00	08:08 16:20
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3	08:32 16:28	08:02 17:17	07:08 18:08	06:58 20:01	05:55 20:51	05:13 21:35	05:13 21:46	05:50 21:12	06:40 20:10	07:28 19:01	07:21 16:56	08:11 16:19
4	08:31 16:29	08:01 17:19	07:06 18:09	06:56 20:02	05:53 20:53	05:12 21:36	05:13 21:46	05:52 21:10	06:41 20:07	07:30 18:58	07:23 16:54	08:12 16:18
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Sonnenscheinstunden	260	278	367	415	484	497	500	453	381	332	267	245
astr.max.mögl.Beschattung												

Tabellen-Layout: Die Daten für jeden Tag sind in folgender Matrix wiedergegeben (Sommerzeit wie Bezugsjahr):

Tag im Monat	Sonnenaufgang (SS:MM)	Sonnenuntergang (SS:MM)	Minuten mit Schatten	Zeitpunkt (SS:MM) Schattenanfang	Zeitpunkt (SS:MM) Schattende	(WEA mit erstem Schatten)	(WEA mit letztem Schatten)
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SHADOW - Kalender

Berechnung: Gesamtbelastung Schattenrezeptor: SR S - An d. Lieth 22, 33165 Lichtenau
Annahmen für Schattenwurfberechnung

Die dargestellten Zeiten sind die astronomisch maximal mögliche Beschattungsdauer, berechnet unter folgenden Annahmen:

- Die Sonne scheint täglich von Sonnenauf- bis -untergang
- Die Rotorfläche steht immer senkrecht zur Sonneneinstrahlung
- Die Windenergieanlage/n ist/sind immer in Betrieb

	Januar	Februar	März	April	Mai	Juni	Juli	August	September	Oktober	November	Dezember
1	08:32 16:26	08:05 17:13	07:13 18:04	07:03 19:57	05:59 20:48	05:14 21:33	05:11 21:47	05:47 21:15	06:36 20:14	07:25 19:05	07:18 17:00	08:08 16:20
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25	08:15 17:01	07:21 17:57	06:19 18:46	06:11 20:38	05:21 21:24	05:08 21:47	05:37 21:26	06:25 20:29	07:15 19:19	07:05 17:13	07:59 16:25	08:31 16:20
26	08:14 17:02	07:19 17:59	06:17 18:47	06:09 20:39	05:20 21:25	05:09 21:47	05:39 21:24	06:27 20:27	07:16 19:17	07:07 17:11	08:00 16:24	08:31 16:20
27	08:13 17:04	07:17 18:01	06:14 18:49	06:07 20:41	05:19 21:27	05:09 21:47	05:40 21:23	06:28 20:25	07:18 19:14	07:09 17:09	08:02 16:23	08:31 16:21
28	08:11 17:06	07:15 18:02	06:12 18:51	06:05 20:43	05:18 21:28	05:10 21:47	05:41 21:22	06:30 20:23	07:20 19:12	07:11 17:07	08:04 16:22	08:31 16:22
29	08:10 17:08		07:10 19:52	06:03 20:44	05:17 21:29	05:10 21:47	05:43 21:20	06:31 20:21	07:21 19:10	07:12 17:05	08:05 16:22	08:32 16:23
30	08:08 17:10		07:07 19:54	06:01 20:46	05:16 21:30	05:11 21:47	05:44 21:18	06:33 20:18	07:23 19:08	07:14 17:04	08:07 16:21	08:32 16:24
31	08:07 17:11		07:05 19:56		05:15 21:32		05:46 21:17	06:35 20:16		07:16 17:02		08:32 16:25
Sonnenscheinstunden astr.max.mögl.Beschattung	260	278	367	415	484	497	500	453	381	332	267	245

Tabellen-Layout: Die Daten für jeden Tag sind in folgender Matrix wiedergegeben (Sommerzeit wie Bezugsjahr):

Tag im Monat	Sonnenaufgang (SS:MM)	Sonnenuntergang (SS:MM)	Minuten mit Schatten	Zeitpunkt (SS:MM) Schattenanfang	Zeitpunkt (SS:MM) Schattende	(WEA mit erstem Schatten)	(WEA mit letztem Schatten)
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SHADOW - Kalender

Berechnung: Gesamtbelastung Schattenrezeptor: SR U - Hellweg 54, 33165 Lichtenau
Annahmen für Schattenwurfberechnung

Die dargestellten Zeiten sind die astronomisch maximal mögliche Beschattungsdauer, berechnet unter folgenden Annahmen:

- Die Sonne scheint täglich von Sonnenauf- bis -untergang
- Die Rotorfläche steht immer senkrecht zur Sonneneinstrahlung
- Die Windenergieanlage/n ist/sind immer in Betrieb

	Januar	Februar	März	April	Mai		Juni
1	08:32 16:26	08:05 17:13	07:13 18:04	07:03 19:57	05:59 20:48		05:14 21:33
2	08:32 16:27	08:04 17:15	07:11 18:06	07:01 19:59	05:57 20:49		20 06:12 (41884-22 (04)) 05:13 21:34
3	08:32 16:28	08:02 17:17	07:08 18:08	06:58 20:01	05:55 20:51		22 06:12 (41884-22 (04)) 05:13 21:35
4	08:31 16:29	08:01 17:19	07:06 18:09	06:56 20:02	05:53 20:53		22 06:12 (41884-22 (04)) 05:12 21:36
5	08:31 16:30	07:59 17:20	07:04 18:11	06:54 20:04	05:51 20:54		23 06:12 (41884-22 (04)) 05:11 21:37
6	08:31 16:32	07:58 17:22	07:02 18:13	06:52 20:06	05:50 20:56		23 06:11 (41884-22 (04)) 05:11 21:38
7	08:30 16:33	07:56 17:24	07:00 18:15	06:49 20:07	05:48 20:57		23 06:12 (41884-22 (04)) 05:10 21:39
8	08:30 16:34	07:54 17:26	06:57 18:16	06:47 20:09	05:46 20:59		24 06:12 (41884-22 (04)) 05:09 21:40
9	08:30 16:35	07:52 17:28	06:55 18:18	06:45 20:11	05:44 21:01		23 06:12 (41884-22 (04)) 05:09 21:40
10	08:29 16:37	07:51 17:30	06:53 18:20	06:43 20:13	05:43 21:02		24 06:12 (41884-22 (04)) 05:09 21:41
11	08:28 16:38	07:49 17:31	06:51 18:22	06:40 20:14	05:41 21:04		24 06:13 (41884-22 (04)) 05:08 21:42
12	08:28 16:40	07:47 17:33	06:49 18:23	06:38 20:16	05:39 21:05		24 06:12 (41884-22 (04)) 05:08 21:43
13	08:27 16:41	07:45 17:35	06:46 18:25	06:36 20:18	05:38 21:07		24 06:12 (41884-22 (04)) 05:08 21:43
14	08:26 16:43	07:43 17:37	06:44 18:27	06:34 20:19	05:36 21:08		24 06:13 (41884-22 (04)) 05:07 21:44
15	08:26 16:44	07:41 17:39	06:42 18:29	06:32 20:21	05:35 21:10		24 06:13 (41884-22 (04)) 05:07 21:44
16	08:25 16:46	07:39 17:41	06:39 18:30	06:29 20:23	05:33 21:11		24 06:13 (41884-22 (04)) 05:07 21:45
17	08:24 16:47	07:37 17:42	06:37 18:32	06:27 20:24	05:32 21:13		25 06:13 (41884-22 (04)) 05:07 21:45
18	08:23 16:49	07:36 17:44	06:35 18:34	06:25 20:26	05:30 21:14		24 06:14 (41884-22 (04)) 05:07 21:46
19	08:22 16:51	07:34 17:46	06:33 18:35	06:23 20:28	05:29 21:16		24 06:14 (41884-22 (04)) 05:07 21:46
20	08:21 16:52	07:32 17:48	06:30 18:37	06:21 20:29	05:27 21:17		24 06:14 (41884-22 (04)) 05:07 21:47
21	08:20 16:54	07:29 17:50	06:28 18:39	06:19 20:31	05:26 21:19		24 06:14 (41884-22 (04)) 05:07 21:47
22	08:19 16:56	07:27 17:52	06:26 18:40	06:17 20:33	05:25 21:20		24 06:15 (41884-22 (04)) 05:07 21:47
23	08:18 16:57	07:25 17:53	06:23 18:42	06:15 20:34	05:24 21:22		24 06:15 (41884-22 (04)) 05:08 21:47
24	08:16 16:59	07:23 17:55	06:21 18:44	06:13 20:36	05:22 21:23	5	06:20 (41884-22 (04)) 06:25 (41884-22 (04)) 21:47
25	08:15 17:01	07:21 17:57	06:19 18:46	06:11 20:38	05:21 21:24	10	06:16 (41884-22 (04)) 06:26 (41884-22 (04)) 21:47
26	08:14 17:02	07:19 17:59	06:17 18:47	06:09 20:39	05:20 21:25	13	06:15 (41884-22 (04)) 06:28 (41884-22 (04)) 21:47
27	08:13 17:04	07:17 18:01	06:14 18:49	06:07 20:41	05:19 21:27	15	06:15 (41884-22 (04)) 06:30 (41884-22 (04)) 21:47
28	08:11 17:06	07:15 18:02	06:12 18:51	06:05 20:43	05:18 21:28	17	06:14 (41884-22 (04)) 06:31 (41884-22 (04)) 21:47
29	08:10 17:08		07:10 19:52	06:03 20:44	05:17 21:29	18	06:13 (41884-22 (04)) 06:31 (41884-22 (04)) 21:47
30	08:08 17:10		07:07 19:54	06:01 20:46	05:16 21:30	19	06:13 (41884-22 (04)) 06:32 (41884-22 (04)) 21:47
31	08:07 17:11		07:05 19:56		05:15 21:32	20	06:12 (41884-22 (04)) 06:32 (41884-22 (04)) 21:47
Sonnenscheinstunden	260	278	367	415	484		497
astr.max.mögl.Beschattung					117		709

Tabellen-Layout: Die Daten für jeden Tag sind in folgender Matrix wiedergegeben (Sommerzeit wie Bezugsjahr):

Tag im Monat	Sonnenaufgang (SS:MM)	Sonnenuntergang (SS:MM)	Minuten mit Schatten	Zeitpunkt (SS:MM) Schattenanfang	Zeitpunkt (SS:MM) Schattende	(WEA mit erstem Schatten)	(WEA mit letztem Schatten)
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SHADOW - Kalender

Berechnung: Gesamtbelastung Schattenrezeptor: SR U - Hellweg 54, 33165 Lichtenau
 Annahmen für Schattenwurfberechnung

Die dargestellten Zeiten sind die astronomisch maximal mögliche Beschattungsdauer, berechnet unter folgenden Annahmen:

- Die Sonne scheint täglich von Sonnenauf- bis -untergang
- Die Rotorfläche steht immer senkrecht zur Sonneneinstrahlung
- Die Windenergieanlage/n ist/sind immer in Betrieb

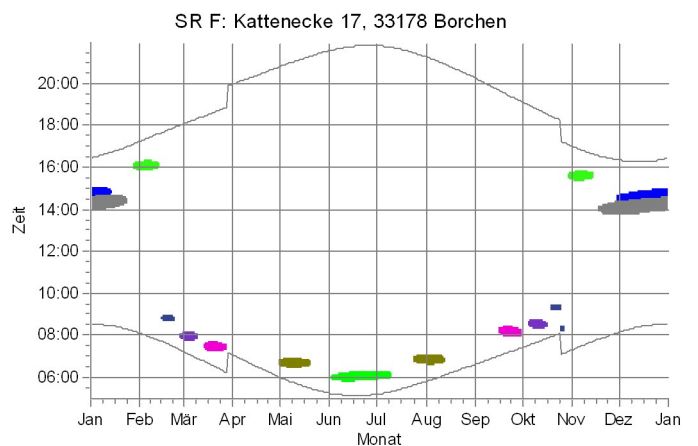
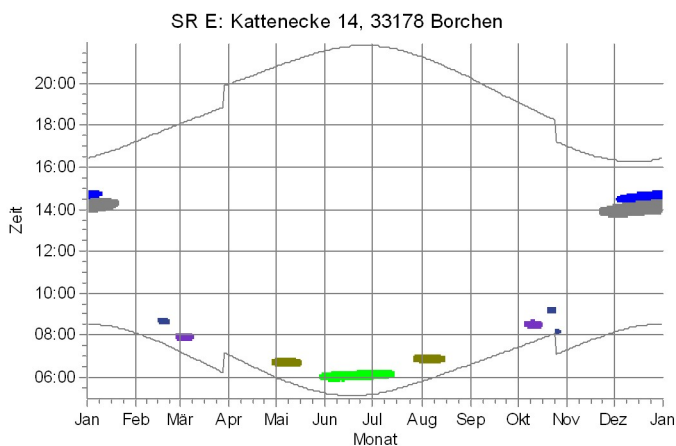
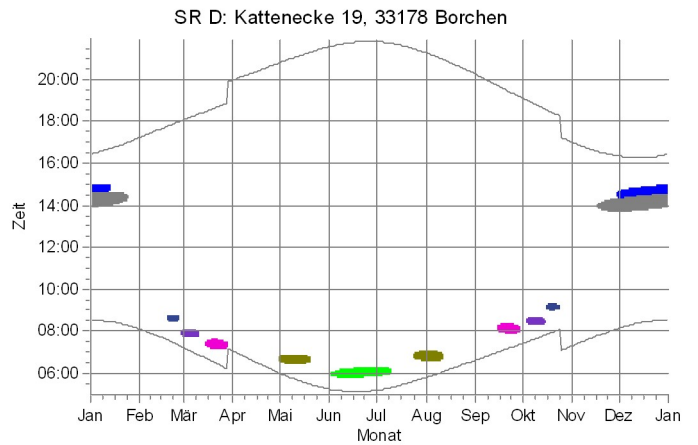
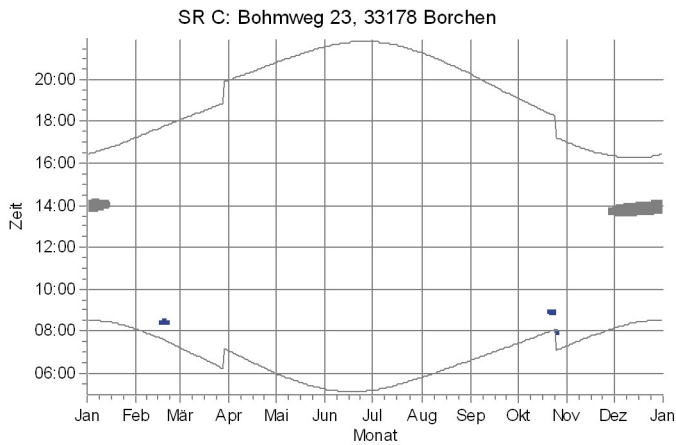
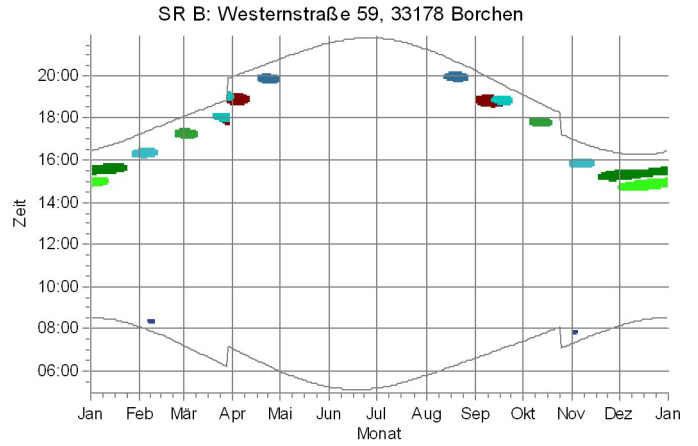
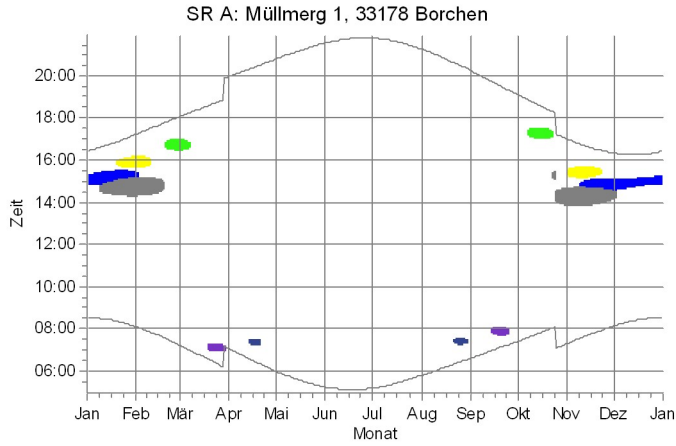
	Juli		August		September		Oktober		November		Dezember	
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	21:47	24	06:41 (41884-22 (04))	21:15	20:14	19:05	17:00	16:20				
2	05:12		06:16 (41884-22 (04))	05:49	06:38	07:26	07:19	08:09				
	21:46	24	06:40 (41884-22 (04))	21:14	20:12	19:03	16:58	16:19				
3	05:13		06:17 (41884-22 (04))	05:50	06:39	07:28	07:21	08:11				
	21:46	24	06:41 (41884-22 (04))	21:12	20:10	19:01	16:56	16:19				
4	05:13		06:17 (41884-22 (04))	05:52	06:41	07:30	07:23	08:12				
	21:46	24	06:41 (41884-22 (04))	21:10	20:07	18:58	16:54	16:18				
5	05:14		06:18 (41884-22 (04))	05:53	06:43	07:31	07:25	08:13				
	21:45	23	06:41 (41884-22 (04))	21:09	20:05	18:56	16:53	16:18				
6	05:15		06:18 (41884-22 (04))	05:55	06:44	07:33	07:26	08:15				
	21:45	23	06:41 (41884-22 (04))	21:07	20:03	18:54	16:51	16:17				
7	05:16		06:18 (41884-22 (04))	05:56	06:46	07:34	07:28	08:16				
	21:44	23	06:41 (41884-22 (04))	21:05	20:00	18:52	16:49	16:17				
8	05:17		06:18 (41884-22 (04))	05:58	06:47	07:36	07:30	08:17				
	21:43	23	06:41 (41884-22 (04))	21:03	19:58	18:49	16:48	16:17				
9	05:18		06:19 (41884-22 (04))	06:00	06:49	07:38	07:32	08:18				
	21:43	22	06:41 (41884-22 (04))	21:01	19:56	18:47	16:46	16:16				
10	05:19		06:19 (41884-22 (04))	06:01	06:51	07:40	07:34	08:19				
	21:42	22	06:41 (41884-22 (04))	21:00	19:54	18:45	16:44	16:16				
11	05:20		06:20 (41884-22 (04))	06:03	06:52	07:41	07:35	08:21				
	21:41	21	06:41 (41884-22 (04))	20:58	19:51	18:43	16:43	16:16				
12	05:21		06:20 (41884-22 (04))	06:04	06:54	07:43	07:37	08:22				
	21:40	21	06:41 (41884-22 (04))	20:56	19:49	18:41	16:41	16:16				
13	05:22		06:21 (41884-22 (04))	06:06	06:55	07:45	07:39	08:23				
	21:40	19	06:40 (41884-22 (04))	20:54	19:47	18:38	16:40	16:16				
14	05:23		06:22 (41884-22 (04))	06:07	06:57	07:46	07:41	08:24				
	21:39	18	06:40 (41884-22 (04))	20:52	19:44	18:36	16:38	16:16				
15	05:24		06:22 (41884-22 (04))	06:09	06:59	07:48	07:42	08:24				
	21:38	17	06:39 (41884-22 (04))	20:50	19:42	18:34	16:37	16:16				
16	05:25		06:23 (41884-22 (04))	06:11	07:00	07:50	07:44	08:25				
	21:37	16	06:39 (41884-22 (04))	20:48	19:40	18:32	16:36	16:16				
17	05:27		06:24 (41884-22 (04))	06:12	07:02	07:51	07:46	08:26				
	21:36	14	06:38 (41884-22 (04))	20:46	19:38	18:30	16:34	16:16				
18	05:28		06:25 (41884-22 (04))	06:14	07:03	07:53	07:47	08:27				
	21:35	11	06:36 (41884-22 (04))	20:44	19:35	18:28	16:33	16:16				
19	05:29		06:28 (41884-22 (04))	06:15	07:05	07:55	07:49	08:28				
	21:33	8	06:36 (41884-22 (04))	20:42	19:33	18:25	16:32	16:17				
20	05:30			06:17	07:07	07:57	07:51	08:28				
	21:32			20:40	19:31	18:23	16:30	16:17				
21	05:32			06:19	07:08	07:58	07:52	08:29				
	21:31			20:38	19:28	18:21	16:29	16:18				
22	05:33			06:20	07:10	08:00	07:54	08:29				
	21:30			20:36	19:26	18:19	16:28	16:18				
23	05:34			06:22	07:12	08:02	07:56	08:30				
	21:29			20:34	19:24	18:17	16:27	16:18				
24	05:36			06:23	07:13	08:04	07:57	08:30				
	21:27			20:31	19:21	18:15	16:26	16:19				
25	05:37			06:25	07:15	07:05	07:59	08:31				
	21:26			20:29	19:19	17:13	16:25	16:20				
26	05:38			06:27	07:16	07:07	08:00	08:31				
	21:24			20:27	19:17	17:11	16:24	16:20				
27	05:40			06:28	07:18	07:09	08:02	08:31				
	21:23			20:25	19:14	17:09	16:23	16:21				
28	05:41			06:30	07:20	07:11	08:04	08:31				
	21:22			20:23	19:12	17:07	16:22	16:22				
29	05:43			06:31	07:21	07:12	08:05	08:32				
	21:20			20:21	19:10	17:05	16:22	16:23				
30	05:44			06:33	07:23	07:14	08:07	08:32				
	21:18			20:18	19:07	17:04	16:21	16:24				
31	05:46			06:35		07:16		08:32				
	21:17			20:16		17:02		16:25				
Sonnenscheinstunden	500			453	381	332	267	245				
astr.max.mögl.Beschattung		377										

Tabellen-Layout: Die Daten für jeden Tag sind in folgender Matrix wiedergegeben (Sommerzeit wie Bezugsjahr):

Tag im Monat	Sonnenaufgang (SS:MM)	Sonnenuntergang (SS:MM)	Minuten mit Schatten	Zeitpunkt (SS:MM) Schattenanfang	Zeitpunkt (SS:MM) Schattende	(WEA mit erstem Schatten)	(WEA mit letztem Schatten)
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SHADOW - Grafischer Kalender

Berechnung: Gesamtbelastung

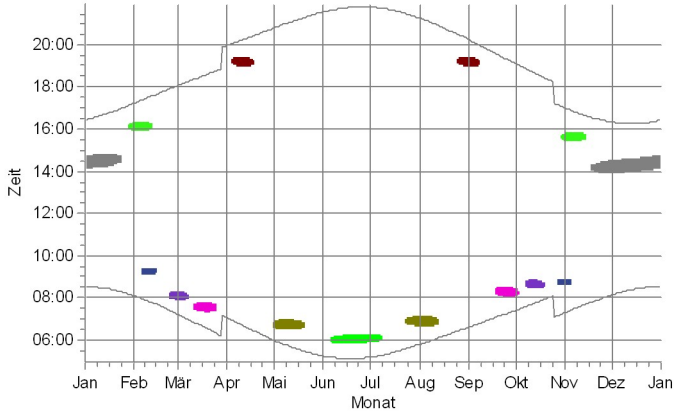


WEA	40100-18: VESTAS V126-3.6 HTlg 3600 126.0 KOI NH: 149.0 m (Ges:212.0 m) (12)	40557-22 (02): VENSYS 126-3800 126.2 KOI NH: 136.9 m (Ges:200.0 m) (11)	40614-20: ENERCON E-160 EPS E3 5560 160.0 KOI NH: 166.6 m (Ges:246.6 m) (22)
V-150: VESTAS V150	40180-22 (WEA 02): Siemens Gamesa SG 6.6-170 6600 170.0 KOI NH: 165.0 m (Ges:250.0 m) (21)	40557-22 (03): VENSYS 126-3800 126.2 KOI NH: 136.9 m (Ges:200.0 m) (16)	42110-22: VENSYS 126-3800 126.2 KOI NH: 136.9 m (Ges:200.0 m) (48)
WEA 03: VESTAS V162-7.2 7200 162.0 KOI NH: 169.0 m (Ges:250.0 m) (2)	40180-20 (WEA 01): Siemens Gamesa SG 6.6-170 6600 170.0 KOI NH: 165.0 m (Ges:250.0 m) (23)	40557-22 (04): VENSYS 126-3800 126.2 KOI NH: 136.9 m (Ges:200.0 m) (14)	933-95: NORDLEX K209-250 250-45 26.7 1.1 NH: 50.0 m (Ges:44.8 m) (3)
WEA 04: VESTAS V162-7.2 7200 162.0 KOI NH: 169.0 m (Ges:250.0 m) (3)	40557-22 (01): VENSYS 126-3800 126.2 KOI NH: 136.9 m (Ges:200.0 m) (13)	40557-22 (05): VENSYS 126-3800 126.2 KOI NH: 136.9 m (Ges:200.0 m) (15)	
WEA 06: VESTAS V162-7.2 7200 162.0 KOI NH: 169.0 m (Ges:250.0 m) (4)			

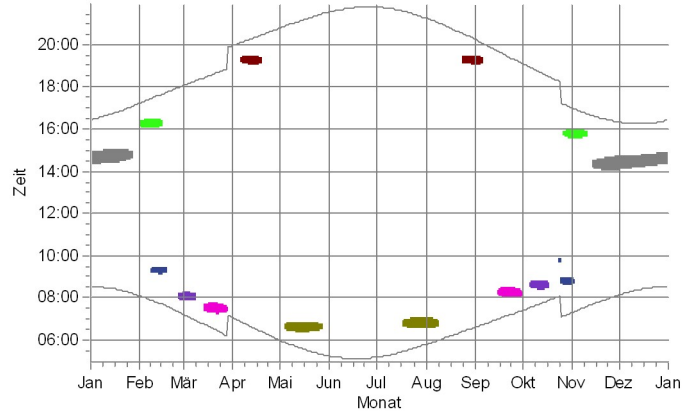
SHADOW - Grafischer Kalender

Berechnung: Gesamtbelastung

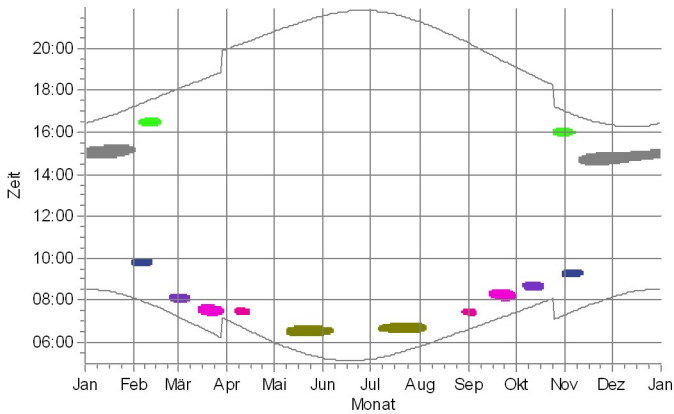
SR G: Kattenecke 13, 33178 Borchten



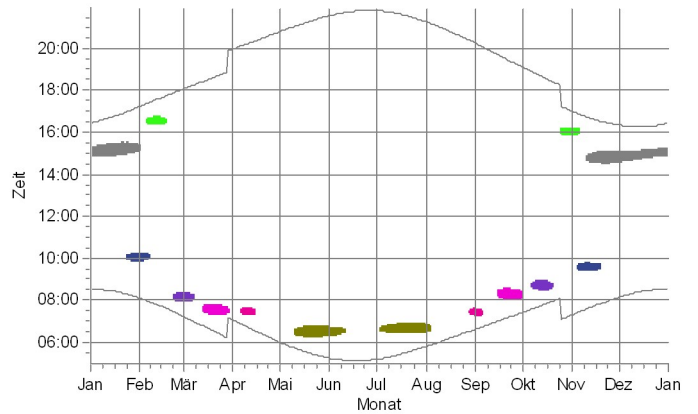
SR H: Kattenecke 15a, 33178 Borchten



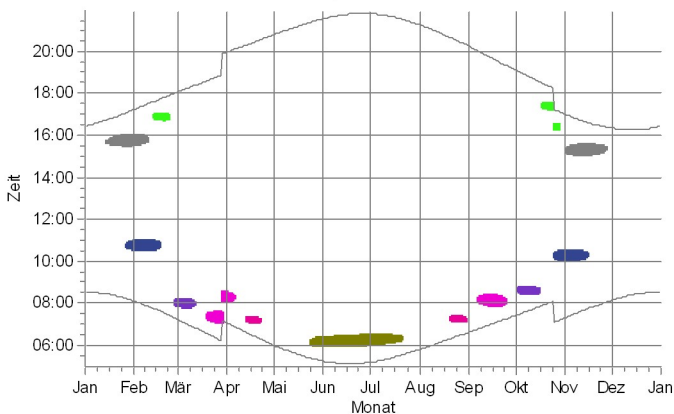
SR I: Strothe 4a, 33178 Borchten



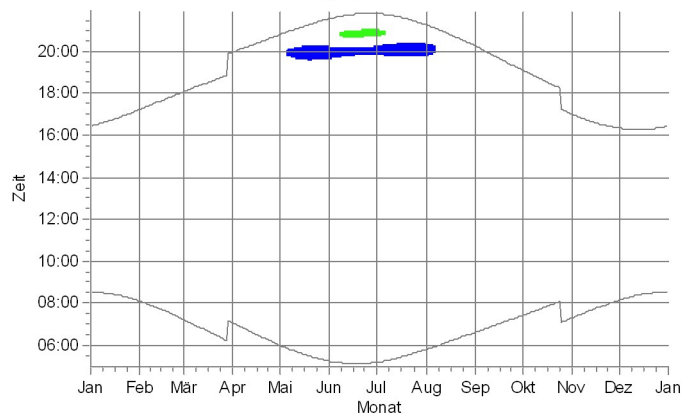
SR K: Strothe 6, 33178 Borchten



SR L: Strothe 1, 33178 Borchten



SR M: Vienburg 2, 33165 Lichtenau

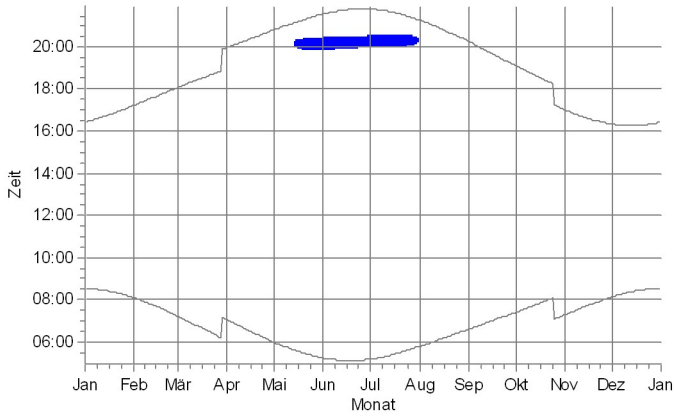


WEA	
■	WEA 04: VESTAS V162-7.2 7200 162.0 I01 NH: 169.0 m (Ges:250.0 m) (3)
■	WEA 06: VESTAS V162-7.2 7200 162.0 I01 NH: 169.0 m (Ges:250.0 m) (4)
■	40102-18: VESTAS V128-3.6 H17q 3600 128.0 I01 NH: 149.0 m (Ges:212.0 m) (13)
■	40180-22 (WEA 02): Siemens Gamesa SG 6.6-170 6600 170.0 I01 NH: 165.0 m (Ges:250.0 m) (21)
■	40180-22 (WEA 01): Siemens Gamesa SG 6.6-170 6600 170.0 I01 NH: 165.0 m (Ges:250.0 m) (23)
■	40557-22 (01): VENSYS 126 3800 126.2 I01 NH: 126.9 m (Ges:200.0 m) (15)
■	40614-20: ENERCON E-160 EPS E3 5560 160.0 I01 NH: 166.6 m (Ges:246.6 m) (22)
■	42110-22: VENSYS 126 3800 126.2 I01 NH: 126.9 m (Ges:200.0 m) (16)
■	42118-15: 40602-10(1): ENERCON E-115 3000 115.7 I01 NH: 149.0 m (Ges:206.9 m) (1)
■	832-95: NORDEX N29-250-250-45 29.7 I-1 NH: 50.0 m (Ges:84.8 m) (2)

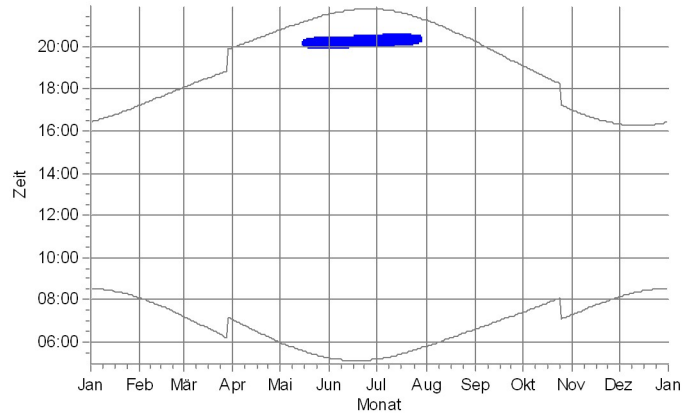
SHADOW - Grafischer Kalender

Berechnung: Gesamtbelastung

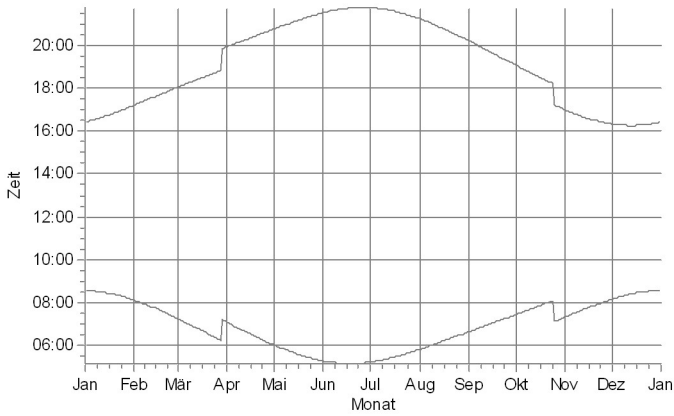
SR N: Zum Menthal 2, 33165 Lichtenau



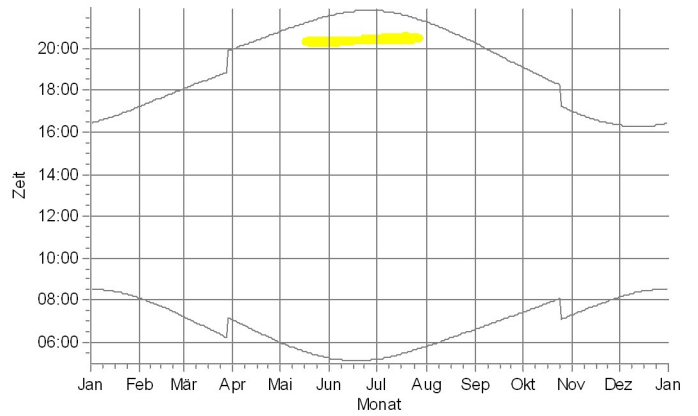
SR O: Zum Menthal 1, 33165 Lichtenau



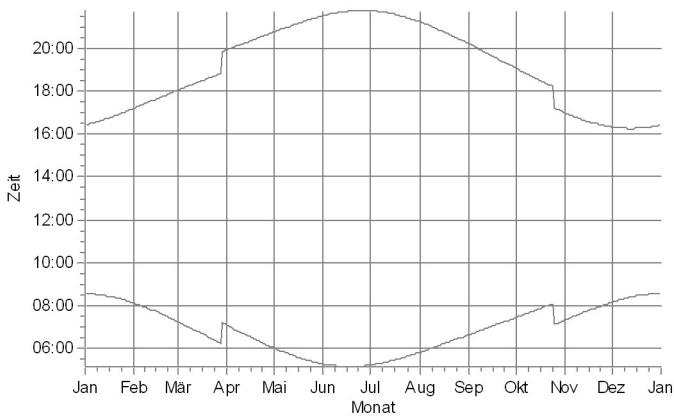
SR P: Zum Menthal 4, 33165 Lichtenau



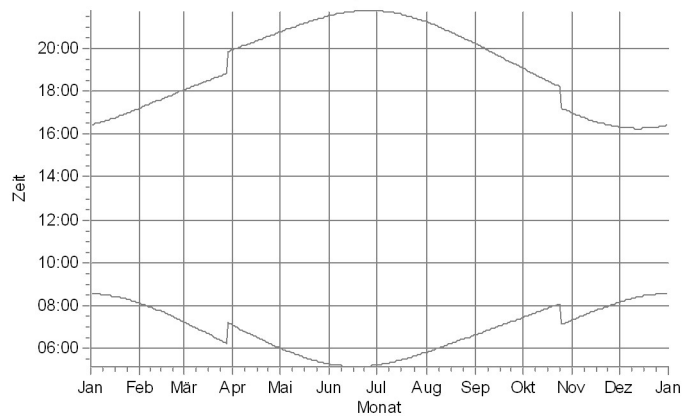
SR Q: Zum Menthal 7, 33165 Lichtenau



SR R: An d. Lieth 41, 33165 Lichtenau



SR S: An d. Lieth 22, 33165 Lichtenau



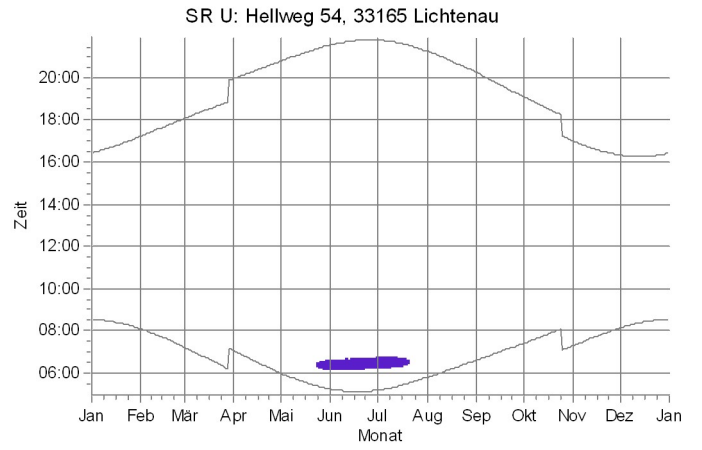
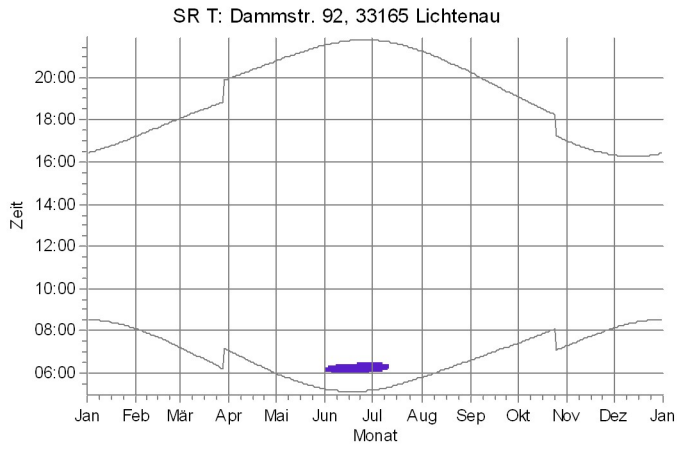
WEA

WEA 03: VESTAS V162-7.2 7200 162.0 101 NH: 169.0 m (Ges:250.0 m) (2)

WEA 04: VESTAS V162-7.2 7200 162.0 101 NH: 169.0 m (Ges:250.0 m) (3)

SHADOW - Grafischer Kalender

Berechnung: Gesamtbelastung



SHADOW - Kalender pro WEA

Berechnung: GesamtbelastungWEA: V-150 - VESTAS V150 Annahmen für Schattenwurfberechnung

Die dargestellten Zeiten sind die astronomisch maximal mögliche Beschattungsdauer, berechnet unter folgenden Annahmen:

- Die Sonne scheint täglich von Sonnenauf- bis -untergang
- Die Rotorfläche steht immer senkrecht zur Sonneneinstrahlung
- Die Windenergieanlage/n ist/sind immer in Betrieb

	Januar	Februar	März	April	Mai	Juni	Juli	August	September	Oktober	November	Dezember	
1	08:32 15:22-15:39/17 16:26	08:06 17:13	07:13 18:04	07:03 19:58	05:59 20:48	05:14 21:33	05:11 21:47	05:47 21:15	06:36 20:14	07:25 19:05	07:18 17:00	08:08 15:07-15:27/20 16:20	
2	08:32 15:23-15:40/17 16:27	08:04 17:15	07:11 18:06	07:01 19:59	05:57 20:49	05:13 21:34	05:12 21:46	05:49 21:14	06:38 20:12	07:26 19:03	07:20 16:58	08:10 15:06-15:27/21 16:20	
3	08:32 15:22-15:40/18 16:28	08:03 17:17	07:09 18:08	06:58 20:01	05:55 20:51	05:13 21:35	05:13 21:46	05:50 21:12	06:40 20:10	07:28 19:01	07:21 16:56	08:11 15:07-15:28/21 16:19	
4	08:32 15:23-15:41/18 16:29	08:01 17:19	07:06 18:10	06:56 20:03	05:53 20:53	05:12 21:36	05:14 21:46	05:52 21:10	06:41 20:07	07:30 18:59	07:23 16:55	08:12 15:08-15:28/20 16:18	
5	08:31 15:23-15:42/19 16:30	07:59 17:21	07:04 18:11	06:54 20:04	05:51 20:54	05:11 21:37	05:14 21:45	05:53 21:09	06:43 20:05	07:31 18:56	07:25 16:53	08:14 15:09-15:29/20 16:18	
6	08:31 15:23-15:42/19 16:32	07:58 17:22	07:02 18:13	06:52 20:06	05:50 20:56	05:11 21:38	05:15 21:45	05:55 21:07	06:44 20:03	07:33 18:54	07:27 16:51	08:15 15:09-15:28/19 16:17	
7	08:31 15:24-15:43/19 16:33	07:56 17:24	07:00 18:15	06:49 20:08	05:48 20:58	05:10 21:39	05:16 21:44	05:57 21:05	06:46 20:01	07:35 18:52	07:28 16:49	08:16 15:09-15:28/19 16:17	
8	08:30 15:23-15:44/21 16:34	07:54 17:26	06:58 18:17	06:47 20:09	05:46 20:59	05:10 21:40	05:17 21:44	05:58 21:03	06:48 19:58	07:36 18:50	07:30 16:48	08:17 15:11-15:29/18 16:17	
9	08:30 15:23-15:44/21 16:36	07:53 17:28	06:55 18:18	06:45 20:11	05:44 21:01	05:09 21:41	05:18 21:43	06:00 21:02	06:49 19:56	07:38 18:47	07:32 16:46	08:19 15:11-15:29/18 16:16	
10	08:29 15:24-15:45/21 16:37	07:51 17:30	06:53 18:20	06:43 20:13	05:43 21:02	05:09 21:41	05:19 21:42	06:01 21:00	06:51 19:54	07:40 18:45	07:34 16:45	08:20 15:12-15:29/17 16:16	
11	08:29 15:24-15:45/21 16:38	07:49 17:32	06:51 18:22	06:41 20:14	05:41 21:04	05:08 21:42	05:20 21:41	06:03 20:58	06:52 19:51	07:41 18:43	07:35 16:43	08:21 15:12-15:29/17 16:16	
12	08:28 15:25-15:45/20 16:40	07:47 17:33	06:49 18:24	06:38 20:16	05:39 21:05	05:08 21:43	05:21 21:41	06:04 20:56	06:54 19:49	07:43 18:41	07:37 16:41	08:22 15:13-15:29/16 16:16	
13	08:27 15:25-15:46/21 16:41	07:45 17:35	06:46 18:25	06:36 20:18	05:38 21:07	05:08 21:44	05:22 21:40	06:06 20:54	06:56 19:47	07:45 18:38	07:39 16:40	08:23 15:13-15:30/17 16:16	
14	08:27 15:25-15:46/21 16:43	07:43 17:37	06:44 18:27	06:34 20:19	05:36 21:09	05:07 21:44	05:23 21:39	06:08 20:52	06:57 19:45	07:46 18:36	07:41 16:38	08:24 15:14-15:30/16 16:16	
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16	08:25 15:26-15:46/20 16:46	07:40 17:41	06:40 18:30	06:30 20:23	05:33 21:12	05:07 21:45	05:25 21:37	06:11 20:48	07:00 19:40	07:50 18:32	07:44 16:36	08:25 15:16-15:31/15 16:16	
17	08:24 15:27-15:46/19 16:47	07:38 17:43	06:37 18:32	06:27 20:24	05:32 21:13	05:07 21:46	05:27 21:36	06:12 20:46	07:02 19:38	07:52 18:30	07:46 16:34	08:26 15:17-15:31/14 16:16	
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24	08:17 16:59 17:01	07:23 17:55	06:21 18:44	06:13 20:36	05:22 21:23	05:08 21:47	05:36 21:27	06:24 20:32	07:13 19:21	08:04 18:15	07:58 15:06-15:24/18 16:26	08:30 15:19-15:33/14 16:19	
25	08:15 17:03 17:04	07:21 17:57	06:19 18:46	06:11 20:38	05:21 21:24	05:08 21:48	05:37 21:26	06:25 20:29	07:15 19:19	07:05 17:13	07:59 15:05-15:24/19 16:25	08:31 15:20-15:35/15 16:20	
26	08:14 17:03 17:04	07:19 17:59	06:17 18:47	06:09 20:39	05:20 21:26	05:09 21:48	05:39 21:25	06:27 20:27	07:17 19:17	07:07 17:11	08:01 15:05-15:25/20 16:24	08:31 15:21-15:35/14 16:20	
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28	08:11 17:06 17:06	07:15 18:02	06:12 18:51	06:05 20:43	05:18 21:28	05:10 21:47	05:41 21:22	06:30 20:23	07:20 19:12	07:11 17:07	08:04 15:05-15:26/21 16:22	08:32 15:21-15:36/15 16:22	
29	08:10 17:08 17:08	07:10 19:52	06:03 20:44	05:17 21:29	05:10 21:47	05:09 21:47	05:43 21:20	06:32 20:21	07:21 19:10	07:12 17:06	08:05 15:06-15:27/21 16:22	08:32 15:21-15:37/16 16:23	
30	08:09 17:10 17:10	07:08 19:54	06:01 20:46	05:16 21:31	05:11 21:47	05:11 21:47	05:44 21:19	06:33 20:19	07:23 19:08	07:14 17:04	08:07 15:06-15:26/20 16:21	08:32 15:21-15:37/16 16:24	
31	08:07 17:11 17:11	07:05 19:56	06:00 20:46	05:15 21:32	05:12 21:47	05:12 21:47	05:46 21:17	06:35 20:16	07:16 17:02	07:16 17:02	08:07 15:06-15:26/20 16:21	08:32 15:22-15:38/16 16:25	
	Sonnenscheinstunden Anzahl Minuten mit Schatten	260 419	278 0	367 0	415 0	484 0	497 0	500 0	453 0	381 0	332 0	267 208	245 507

Tabellen-Layout: Die Daten für jeden Tag sind in folgender Matrix wiedergegeben (Sommerzeit wie Bezugsjahr):

Tag im Monat	Sonnenaufgang (SS:MM)	Zeitpunkt (SS:MM)	Schattenanfang-Zeitpunkt (SS:MM)	Schattenende/Minuten mit Schatten
	Sonnenuntergang (SS:MM)	Zeitpunkt (SS:MM)	Schattenanfang-Zeitpunkt (SS:MM)	Schattenende/Minuten mit Schatten

SHADOW - Kalender pro WEA

Berechnung: GesamtbelastungWEA: WEA 03 - VESTAS V162-7.2 7200 162.0 IO! NH: 169,0 m (Ges:250,0 m) (2)
Annahmen für Schattenwurfberechnung

Die dargestellten Zeiten sind die astronomisch maximal mögliche Beschattungsdauer, berechnet unter folgenden Annahmen:

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- Die Rotorfläche steht immer senkrecht zur Sonneneinfallrichtung
- Die Windenergieanlage/n ist/sind immer in Betrieb

	Januar	Februar	März	April	Mai	Juni
1	08:32 16:26	08:06 15:42-16:06/24 17:13	07:13 18:04	07:03 19:57	05:59 20:48	05:14 20:07-20:30/23 21:33
2	08:32 16:27	08:04 15:42-16:06/24 17:15	07:11 18:06	07:01 19:59	05:57 20:49	05:13 20:08-20:31/23 21:34
3	08:32 16:28	08:03 15:42-16:06/24 17:17	07:09 18:08	06:58 20:01	05:55 20:51	05:13 20:08-20:30/22 21:35
4	08:32 16:29	08:01 15:43-16:05/22 17:19	07:06 18:10	06:56 20:03	05:53 20:53	05:12 20:09-20:31/22 21:36
5	08:31 16:30	07:59 15:44-16:06/22 17:21	07:04 18:11	06:54 20:04	05:51 20:54	05:11 20:09-20:31/22 21:37
6	08:31 16:32	07:58 15:45-16:05/20 17:22	07:02 18:13	06:52 20:06	05:50 20:56	05:11 20:09-20:30/21 21:38
7	08:31 16:33	07:56 15:46-16:03/17 17:24	07:00 18:15	06:49 20:08	05:48 20:58	05:10 20:10-20:30/20 21:39
8	08:30 16:34	07:54 15:48-16:02/14 17:26	06:58 18:17	06:47 20:09	05:46 20:59	05:10 20:11-20:31/20 21:40
9	08:30 16:36	07:52 15:50-16:00/10 17:28	06:55 18:18	06:45 20:11	05:44 21:01	05:09 20:11-20:30/19 21:41
10	08:29 16:37	07:51 17:30	06:53 18:20	06:43 20:13	05:43 21:02	05:09 20:11-20:30/19 21:41
11	08:29 16:38	07:49 17:32	06:51 18:22	06:41 20:14	05:41 21:04	05:08 20:12-20:31/19 21:42
12	08:28 16:40	07:47 17:33	06:49 18:24	06:38 20:16	05:39 21:05	05:08 20:12-20:30/18 21:43
13	08:27 16:41	07:45 17:35	06:46 18:25	06:36 20:18	05:38 21:07	05:08 20:12-20:30/18 21:43
14	08:27 16:43	07:43 17:37	06:44 18:27	06:34 20:19	05:36 21:09	05:07 20:13-20:30/17 21:44
15	08:26 16:44	07:41 17:39	06:42 18:29	06:32 20:21	05:35 20:15-20:22/7 21:10	05:07 20:13-20:30/17 21:45
16	08:25 16:46	07:40 17:41	06:40 18:30	06:30 20:23	05:33 20:12-20:23/11 21:12	05:07 20:14-20:30/16 21:45
17	08:24 16:47	07:38 17:43	06:37 18:32	06:27 20:24	05:32 20:11-20:25/14 21:13	05:07 20:14-20:31/17 21:46
18	08:23 16:49	07:36 17:44	06:35 18:34	06:25 20:26	05:30 20:10-20:27/17 21:15	05:07 20:14-20:31/17 21:46
19	08:22 16:51	07:34 17:46	06:33 18:36	06:23 20:28	05:29 20:08-20:27/19 21:16	05:07 20:15-20:31/16 21:46
20	08:21 15:49-15:53/4 16:52	07:32 17:48	06:30 18:37	06:21 20:29	05:28 20:08-20:28/20 21:17	05:07 20:15-20:31/16 21:47
21	08:20 15:47-15:57/10 16:54	07:30 17:50	06:28 18:39	06:19 20:31	05:26 20:08-20:28/20 21:19	05:07 20:15-20:31/16 21:47
22	08:19 15:45-15:58/13 16:56	07:28 17:52	06:26 18:41	06:17 20:33	05:25 20:08-20:29/21 21:20	05:08 20:16-20:32/16 21:47
23	08:18 15:44-16:00/16 16:57	07:26 17:53	06:24 18:42	06:15 20:34	05:24 20:07-20:29/22 21:22	05:08 20:16-20:32/16 21:47
24	08:17 15:43-16:01/18 16:59	07:23 17:55	06:21 18:44	06:13 20:36	05:22 20:07-20:30/23 21:23	05:08 20:16-20:32/16 21:47
25	08:15 15:42-16:02/20 17:01	07:21 17:57	06:19 18:46	06:11 20:38	05:21 20:07-20:30/23 21:24	05:08 20:16-20:33/17 21:47
26	08:14 15:42-16:03/21 17:03	07:19 17:59	06:17 18:47	06:09 20:39	05:20 20:07-20:30/23 21:26	05:09 20:16-20:32/16 21:48
27	08:13 15:41-16:04/23 17:04	07:17 18:01	06:14 18:49	06:07 20:41	05:19 20:07-20:31/24 21:27	05:09 20:16-20:32/16 21:47
28	08:11 15:42-16:05/23 17:06	07:15 18:02	06:12 18:51	06:05 20:43	05:18 20:07-20:31/24 21:28	05:10 20:16-20:33/17 21:47
29	08:10 15:41-16:05/24 17:08		07:10 19:52	06:03 20:44	05:17 20:07-20:31/24 21:29	05:10 20:17-20:34/17 21:47
30	08:09 15:42-16:06/24 17:10		07:08 19:54	06:01 20:46	05:16 20:07-20:30/23 21:31	05:11 20:16-20:34/18 21:47
31	08:07 15:41-16:06/25 17:11		07:05 19:56		05:15 20:07-20:30/23 21:32	
Sonnenscheinstunden	260	278	367	415	484	497
Anzahl Minuten mit Schatten	221	177	0	0	338	547

Tabellen-Layout: Die Daten für jeden Tag sind in folgender Matrix wiedergegeben (Sommerzeit wie Bezugsjahr):

Tag im Monat	Sonnenaufgang (SS:MM)	Zeitpunkt (SS:MM)	Schattenanfang-Zeitpunkt (SS:MM)	Schattenende/Minuten mit Schatten
	Sonnenuntergang (SS:MM)	Zeitpunkt (SS:MM)	Schattenanfang-Zeitpunkt (SS:MM)	Schattenende/Minuten mit Schatten

SHADOW - Kalender pro WEA

Berechnung: Gesamtbelastung WEA: WEA 03 - VESTAS V162-7.2 7200 162.0 IO! NH: 169,0 m (Ges:250,0 m) (2)
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- Die Rotorfläche steht immer senkrecht zur Sonneneinstrahlung
- Die Windenergieanlage/n ist/sind immer in Betrieb

	Juli	August	September	Oktober	November	Dezember
1	05:11 20:16-20:35/19 21:47	05:47 21:15	06:36 20:14	07:25 19:05	07:18 17:00	08:08 16:20
2	05:12 20:16-20:35/19 21:46	05:49 21:14	06:38 20:12	07:26 19:03	07:20 15:19-15:30/11 16:58	08:10 16:20
3	05:13 20:16-20:35/19 21:46	05:50 21:12	06:40 20:10	07:28 19:01	07:21 15:17-15:32/15 16:56	08:11 16:19
4	05:14 20:16-20:36/20 21:46	05:52 21:10	06:41 20:07	07:30 18:59	07:23 15:16-15:33/17 16:55	08:12 16:18
5	05:14 20:16-20:37/21 21:45	05:53 21:09	06:43 20:05	07:31 18:56	07:25 15:15-15:35/20 16:53	08:14 16:18
6	05:15 20:15-20:36/21 21:45	05:55 21:07	06:44 20:03	07:33 18:54	07:27 15:14-15:35/21 16:51	08:15 16:17
7	05:16 20:16-20:37/21 21:44	05:57 21:05	06:46 20:01	07:35 18:52	07:28 15:14-15:36/22 16:49	08:16 16:17
8	05:17 20:16-20:37/21 21:43	05:58 21:03	06:48 19:58	07:36 18:49	07:30 15:13-15:37/24 16:48	08:17 16:17
9	05:18 20:16-20:38/22 21:43	06:00 21:02	06:49 19:56	07:38 18:47	07:32 15:13-15:37/24 16:46	08:18 16:16
10	05:19 20:16-20:38/22 21:42	06:01 21:00	06:51 19:54	07:40 18:45	07:34 15:13-15:37/24 16:45	08:20 16:16
11	05:20 20:16-20:38/22 21:41	06:03 20:58	06:52 19:51	07:41 18:43	07:35 15:13-15:38/25 16:43	08:21 16:16
12	05:21 20:16-20:39/23 21:41	06:04 20:56	06:54 19:49	07:43 18:41	07:37 15:13-15:37/24 16:41	08:22 16:16
13	05:22 20:16-20:39/23 21:40	06:06 20:54	06:56 19:47	07:45 18:38	07:39 15:13-15:37/24 16:40	08:23 16:16
14	05:23 20:16-20:39/23 21:39	06:08 20:52	06:57 19:45	07:46 18:36	07:41 15:14-15:37/23 16:38	08:24 16:16
15	05:24 20:16-20:39/23 21:38	06:09 20:50	06:59 19:42	07:48 18:34	07:42 15:14-15:36/22 16:37	08:25 16:16
16	05:25 20:16-20:39/23 21:37	06:11 20:48	07:00 19:40	07:50 18:32	07:44 15:15-15:36/21 16:36	08:25 16:16
17	05:27 20:16-20:39/23 21:36	06:12 20:46	07:02 19:38	07:52 18:30	07:46 15:16-15:36/20 16:34	08:26 16:16
18	05:28 20:17-20:40/23 21:35	06:14 20:44	07:04 19:35	07:53 18:28	07:48 15:17-15:35/18 16:33	08:27 16:17
19	05:29 20:17-20:40/23 21:34	06:16 20:42	07:05 19:33	07:55 18:26	07:49 15:19-15:35/16 16:32	08:28 16:17
20	05:30 20:17-20:39/22 21:32	06:17 20:40	07:07 19:31	07:57 18:24	07:51 15:20-15:33/13 16:31	08:28 16:17
21	05:32 20:17-20:39/22 21:31	06:19 20:38	07:08 19:28	07:58 18:21	07:53 15:22-15:32/10 16:29	08:29 16:18
22	05:33 20:17-20:38/21 21:30	06:20 20:36	07:10 19:26	08:00 18:19	07:54 15:25-15:29/4 16:28	08:29 16:18
23	05:34 20:18-20:39/21 21:29	06:22 20:34	07:12 19:24	08:02 18:17	07:56 16:27	08:30 16:19
24	05:36 20:19-20:38/19 21:27	06:24 20:32	07:13 19:21	08:04 18:15	07:57 16:26	08:30 16:19
25	05:37 20:19-20:37/18 21:26	06:25 20:29	07:15 19:19	07:05 17:13	07:59 16:25	08:31 16:20
26	05:39 20:21-20:36/15 21:25	06:27 20:27	07:17 19:17	07:07 17:11	08:01 16:24	08:31 16:20
27	05:40 20:22-20:35/13 21:23	06:28 20:25	07:18 19:15	07:09 17:09	08:02 16:23	08:31 16:21
28	05:41 20:23-20:33/10 21:22	06:30 20:23	07:20 19:12	07:11 17:07	08:04 16:22	08:32 16:22
29	05:43 20:27-20:30/3 21:20	06:32 20:21	07:21 19:10	07:12 17:06	08:05 16:22	08:32 16:23
30	05:44 21:19	06:33 20:19	07:23 19:08	07:14 17:04	08:07 16:21	08:32 16:24
31	05:46 21:17	06:35 20:16	 	07:16 17:02	 	08:32 16:25
Sonnenscheinstunden	500	453	381	332	267	245
Anzahl Minuten mit Schatten	575	0	0	0	398	0

Tabellen-Layout: Die Daten für jeden Tag sind in folgender Matrix wiedergegeben (Sommerzeit wie Bezugsjahr):

Tag im Monat	Sonnenaufgang (SS:MM)	Zeitpunkt (SS:MM)	Schattenanfang-Zeitpunkt (SS:MM)	Schattenende/Minuten mit Schatten
	Sonnenuntergang (SS:MM)	Zeitpunkt (SS:MM)	Schattenanfang-Zeitpunkt (SS:MM)	Schattenende/Minuten mit Schatten

SHADOW - Kalender pro WEA

Berechnung: Gesamtbelastung WEA: WEA 04 - VESTAS V162-7.2 7200 162.0 IO! NH: 169,0 m (Ges:250,0 m) (3)
Annahmen für Schattenwurfberechnung

Die dargestellten Zeiten sind die astronomisch maximal mögliche Beschattungsdauer, berechnet unter folgenden Annahmen:

- Die Sonne scheint täglich von Sonnenauf- bis -untergang
- Die Rotorfläche steht immer senkrecht zur Sonneneinstrahlungsrichtung
- Die Windenergieanlage/n ist/sind immer in Betrieb

	Januar	Februar	März	April	Mai	Juni
1	08:32 14:32-15:15/43 16:26	08:06 15:12-15:20/8 17:13	07:13 18:04	07:03 19:57	05:59 20:48	05:14 19:43-20:24/41 21:33
2	08:32 14:33-15:16/43 16:27	08:04 17:15	07:11 18:06	07:01 19:59	05:57 20:49	05:13 19:44-20:25/41 21:34
3	08:32 14:33-15:16/43 16:28	08:03 17:17	07:09 18:08	06:58 20:01	05:55 20:51	05:13 19:44-20:25/41 21:35
4	08:31 14:34-15:17/43 16:29	08:01 17:19	07:06 18:10	06:56 20:03	05:53 20:53	05:12 19:45-20:26/41 21:36
5	08:31 14:35-15:18/43 16:30	07:59 17:21	07:04 18:11	06:54 20:04	05:51 20:54	05:11 19:45-20:25/40 21:37
6	08:31 14:36-15:19/43 16:32	07:58 17:22	07:02 18:13	06:52 20:06	05:50 19:51-19:58/7 20:56	05:11 19:46-20:25/39 21:38
7	08:31 14:38-15:20/42 16:33	07:56 17:24	07:00 18:15	06:49 20:08	05:48 19:49-20:02/13 20:57	05:10 19:47-20:25/38 21:39
8	08:30 14:39-15:20/41 16:34	07:54 17:26	06:58 18:17	06:47 20:09	05:46 19:46-20:04/18 20:59	05:10 19:48-20:26/38 21:40
9	08:30 14:40-15:21/41 16:36	07:52 17:28	06:55 18:18	06:45 20:11	05:44 19:44-20:05/21 21:01	05:09 19:48-20:25/37 21:41
10	08:29 14:42-15:22/40 16:37	07:51 17:30	06:53 18:20	06:43 20:13	05:43 19:44-20:06/22 21:02	05:09 19:49-20:26/37 21:41
11	08:29 14:43-15:23/40 16:38	07:49 17:32	06:51 18:22	06:40 20:14	05:41 19:42-20:07/25 21:04	05:08 19:50-20:26/36 21:42
12	08:28 14:45-14:54/9 16:40	07:47 17:33	06:49 18:23	06:38 20:16	05:39 19:42-20:08/26 21:05	05:08 19:50-20:26/36 21:43
13	08:27 14:50-14:51/1 16:41	07:45 17:35	06:46 18:25	06:36 20:18	05:38 19:41-20:08/27 21:07	05:08 19:50-20:26/36 21:43
14	08:27 14:56-15:24/28 16:43	07:43 17:37	06:44 18:27	06:34 20:19	05:36 19:41-20:11/30 21:09	05:07 19:51-20:26/35 21:44
15	08:26 14:56-15:25/29 16:44	07:41 17:39	06:42 18:29	06:32 20:21	05:35 19:41-20:14/33 21:10	05:07 19:52-20:26/34 21:45
16	08:25 14:56-15:25/29 16:46	07:40 17:41	06:40 18:30	06:30 20:23	05:33 19:40-20:15/35 21:12	05:07 19:52-20:26/34 21:45
17	08:24 14:56-15:26/30 16:47	07:38 17:43	06:37 18:32	06:27 20:24	05:32 19:40-20:17/37 21:13	05:07 19:53-20:27/34 21:46
18	08:23 14:57-15:26/29 16:49	07:36 17:44	06:35 18:34	06:25 20:26	05:30 19:40-20:19/39 21:15	05:07 19:53-20:27/34 21:46
19	08:22 14:57-15:27/30 16:51	07:34 17:46	06:33 18:36	06:23 20:28	05:29 19:39-20:19/40 21:16	05:07 19:54-20:27/33 21:46
20	08:21 14:58-15:27/29 16:52	07:32 17:48	06:30 18:37	06:21 20:29	05:27 19:39-20:20/41 21:17	05:07 19:54-20:27/33 21:47
21	08:20 14:59-15:28/29 16:54	07:30 17:50	06:28 18:39	06:19 20:31	05:26 19:40-20:21/41 21:19	05:07 19:54-20:27/33 21:47
22	08:19 14:58-15:27/29 16:56	07:28 17:52	06:26 18:41	06:17 20:33	05:25 19:40-20:22/42 21:20	05:07 19:55-20:28/33 21:47
23	08:18 14:59-15:27/28 16:57	07:26 17:53	06:24 18:42	06:15 20:34	05:24 19:40-20:23/43 21:22	05:08 19:55-20:28/33 21:47
24	08:17 15:00-15:28/28 16:59	07:23 17:55	06:21 18:44	06:13 20:36	05:22 19:40-20:23/43 21:23	05:08 19:54-20:28/34 21:47
25	08:15 15:00-15:27/27 17:01	07:21 17:57	06:19 18:46	06:11 20:38	05:21 19:41-20:23/42 21:24	05:08 19:55-20:29/34 21:47
26	08:14 15:02-15:27/25 17:02	07:19 17:59	06:17 18:47	06:09 20:39	05:20 19:41-20:24/43 21:26	05:09 19:55-20:29/34 21:47
27	08:13 15:02-15:26/24 17:04	07:17 18:01	06:14 18:49	06:07 20:41	05:19 19:41-20:24/43 21:27	05:09 19:54-20:28/34 21:47
28	08:11 15:04-15:26/22 17:06	07:15 18:02	06:12 18:51	06:05 20:43	05:18 19:42-20:24/42 21:28	05:10 19:54-20:29/35 21:47
29	08:10 15:04-15:25/21 17:08		07:10 19:52	06:03 20:44	05:17 19:42-20:25/43 21:29	05:10 19:54-20:29/35 21:47
30	08:09 15:07-15:24/17 17:10		07:08 19:54	06:01 20:46	05:16 19:42-20:25/43 21:31	05:11 19:54-20:30/36 21:47
31	08:07 15:08-15:22/14 17:11		07:05 19:56		05:15 19:42-20:25/43 21:32	
Sonnenscheinstunden	260	278	367	415	484	497
Anzahl Minuten mit Schatten	995	8	0	0	882	1079

Tabellen-Layout: Die Daten für jeden Tag sind in folgender Matrix wiedergegeben (Sommerzeit wie Bezugsjahr):

Tag im Monat	Sonnenaufgang (SS:MM)	Sonnenuntergang (SS:MM)	Zeitpunkt (SS:MM)	Schattenanfang-Zeitpunkt (SS:MM)	Schattenende/Minuten mit Schatten
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SHADOW - Kalender pro WEA

Berechnung: GesamtbelastungWEA: WEA 04 - VESTAS V162-7.2 7200 162.0 IO! NH: 169,0 m (Ges:250,0 m) (3)
Annahmen für Schattenwurfberechnung

Die dargestellten Zeiten sind die astronomisch maximal mögliche Beschattungsdauer, berechnet unter folgenden Annahmen:

- Die Sonne scheint täglich von Sonnenauf- bis -untergang
- Die Rotorfläche steht immer senkrecht zur Sonneneinfallrichtung
- Die Windenergieanlage/n ist/sind immer in Betrieb

	Juli		August		September		Oktober		November		Dezember	
1	05:11	19:54-20:30/36	05:47	19:52-20:18/26	06:36	07:25	07:18				08:08	14:25-15:05/40
	21:47		21:15		20:14	19:05	17:00				16:20	
2	05:12	19:53-20:30/37	05:49	19:53-20:17/24	06:38	07:26	07:20				08:10	14:24-15:04/40
	21:46		21:14		20:12	19:03	16:58				16:19	
3	05:13	19:53-20:31/38	05:50	19:54-20:16/22	06:40	07:28	07:21				08:11	14:24-15:05/41
	21:46		21:12		20:10	19:01	16:56				16:19	
4	05:14	19:53-20:31/38	05:52	19:55-20:15/20	06:41	07:30	07:23				08:12	14:23-15:04/41
	21:46		21:10		20:07	18:58	16:54				16:18	
5	05:14	19:53-20:32/39	05:53	19:57-20:13/16	06:43	07:31	07:25				08:14	14:23-15:05/42
	21:45		21:09		20:05	18:56	16:53				16:18	
6	05:15	19:52-20:31/39	05:55	19:59-20:11/12	06:44	07:33	07:27				08:15	14:22-15:05/43
	21:45		21:07		20:03	18:54	16:51				16:17	
7	05:16	19:52-20:32/40	05:57		06:46	07:35	07:28				08:16	14:22-15:04/42
	21:44		21:05		20:01	18:52	16:49				16:17	
8	05:17	19:52-20:32/40	05:58		06:48	07:36	07:30				08:17	14:22-15:05/43
	21:43		21:03		19:58	18:49	16:48				16:17	
9	05:18	19:52-20:32/40	06:00		06:49	07:38	07:32				08:18	14:22-15:05/43
	21:43		21:02		19:56	18:47	16:46				16:16	
10	05:19	19:51-20:33/42	06:01		06:51	07:40	07:34	14:43-14:51/8			08:20	14:22-15:05/43
	21:42		21:00		19:54	18:45	16:44				16:16	
11	05:20	19:51-20:33/42	06:03		06:52	07:41	07:35	14:40-14:54/14			08:21	14:22-15:05/43
	21:41		20:58		19:51	18:43	16:43				16:16	
12	05:21	19:51-20:33/42	06:04		06:54	07:43	07:37	14:37-14:55/18			08:22	14:22-15:05/43
	21:41		20:56		19:49	18:41	16:41				16:16	
13	05:22	19:51-20:33/42	06:06		06:56	07:45	07:39	14:36-14:57/21			08:23	14:22-15:05/43
	21:40		20:54		19:47	18:38	16:40				16:16	
14	05:23	19:50-20:33/43	06:08		06:57	07:46	07:41	14:35-14:58/23			08:24	14:22-15:05/43
	21:39		20:52		19:45	18:36	16:38				16:16	
15	05:24	19:50-20:33/43	06:09		06:59	07:48	07:42	14:35-14:59/24			08:25	14:23-15:05/42
	21:38		20:50		19:42	18:34	16:37				16:16	
16	05:25	19:50-20:33/43	06:11		07:00	07:50	07:44	14:34-15:00/26			08:25	14:23-14:49/26
	21:37		20:48		19:40	18:32	16:36				16:16	14:50-15:05/15
17	05:27	19:50-20:33/43	06:12		07:02	07:51	07:46	14:34-15:01/27			08:26	14:24-14:50/26
	21:36		20:46		19:38	18:30	16:34				16:16	14:51-15:06/15
18	05:28	19:49-20:32/43	06:14		07:04	07:53	07:48	14:34-15:02/28			08:27	14:23-14:50/27
	21:35		20:44		19:35	18:28	16:33				16:17	14:51-15:05/14
19	05:29	19:50-20:33/43	06:16		07:05	07:55	07:49	14:34-15:02/28			08:28	14:24-14:51/27
	21:34		20:42		19:33	18:26	16:32				16:17	14:52-15:06/14
20	05:30	19:50-20:33/43	06:17		07:07	07:57	07:51	14:33-15:02/29			08:28	14:25-14:52/27
	21:32		20:40		19:31	18:23	16:31				16:17	14:53-15:06/13
21	05:32	19:49-20:32/43	06:19		07:08	07:58	07:53	14:34-15:03/29			08:29	14:25-14:52/27
	21:31		20:38		19:28	18:21	16:29				16:18	14:53-15:06/13
22	05:33	19:49-20:31/42	06:20		07:10	08:00	07:54	14:34-15:03/29			08:29	14:26-14:53/27
	21:30		20:36		19:26	18:19	16:28				16:18	14:54-15:07/13
23	05:34	19:50-20:31/41	06:22		07:12	08:02	07:56	14:34-15:04/30			08:30	14:26-14:53/27
	21:29		20:34		19:24	18:17	16:27				16:19	14:54-15:07/13
24	05:36	19:50-20:31/41	06:24		07:13	08:04	07:57	14:34-15:03/29			08:30	14:26-14:53/27
	21:27		20:32		19:21	18:15	16:26				16:19	14:54-15:08/14
25	05:37	19:50-20:29/39	06:25		07:15	07:05	07:59	14:34-15:04/30			08:31	14:27-14:54/27
	21:26		20:29		19:19	17:13	16:25				16:20	14:55-15:09/14
26	05:39	19:50-20:29/39	06:27		07:17	07:07	08:01	14:35-15:04/29			08:31	14:27-14:54/27
	21:25		20:27		19:17	17:11	16:24				16:20	14:55-15:09/14
27	05:40	19:50-20:27/37	06:28		07:18	07:09	08:02	14:36-15:05/29			08:31	14:28-14:54/26
	21:23		20:25		19:14	17:09	16:23				16:21	14:55-15:10/15
28	05:41	19:50-20:25/35	06:30		07:20	07:11	08:04	14:36-15:04/28			08:32	14:28-15:11/43
	21:22		20:23		19:12	17:07	16:22				16:22	
29	05:43	19:51-20:23/32	06:32		07:21	07:12	08:05	14:37-15:05/28			08:32	14:29-15:11/42
	21:20		20:21		19:10	17:05	16:22				16:23	
30	05:44	19:51-20:20/29	06:33		07:23	07:14	08:07	14:26-14:35/9			08:32	14:30-15:12/42
	21:19		20:19		19:08	17:04	16:21	14:37-15:04/27			16:24	
31	05:46	19:51-20:18/27	06:35			07:16					08:32	14:30-15:13/43
	21:17		20:16			17:02					16:25	
Sonnenscheinstunden	500		453		381	332	267				245	
Anzahl Minuten mit Schatten	1221		120		0	0	543				1290	

Tabellen-Layout: Die Daten für jeden Tag sind in folgender Matrix wiedergegeben (Sommerzeit wie Bezugsjahr):

Tag im Monat	Sonnenaufgang (SS:MM)	Sonnenuntergang (SS:MM)	Zeitpunkt (SS:MM)	Schattenanfang-Zeitpunkt (SS:MM)	Schattenende/Minuten mit Schatten
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SHADOW - Kalender pro WEA

Berechnung: GesamtbelastungWEA: WEA 06 - VESTAS V162-7.2 7200 162.0 IO! NH: 169,0 m (Ges:250,0 m) (4)
Annahmen für Schattenwurfberechnung

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Die Rotorfläche steht immer senkrecht zur Sonneneinstrahlung
Die Windenergieanlage/n ist/sind immer in Betrieb

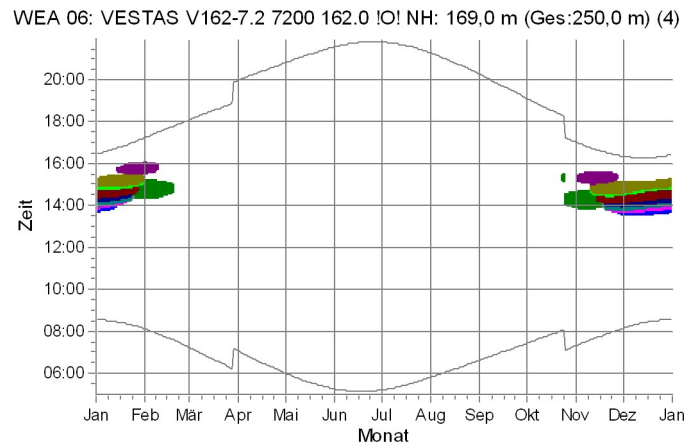
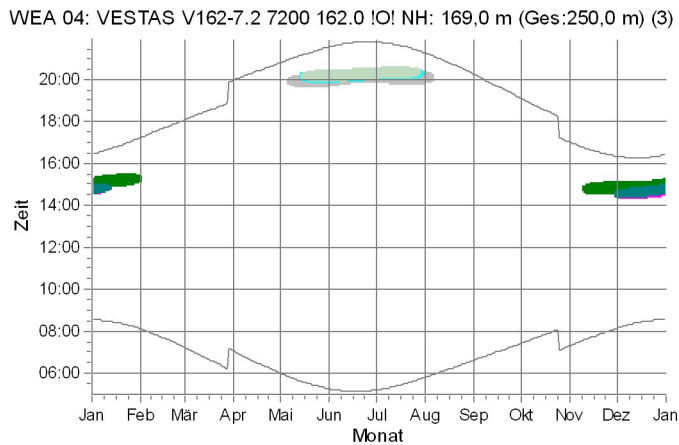
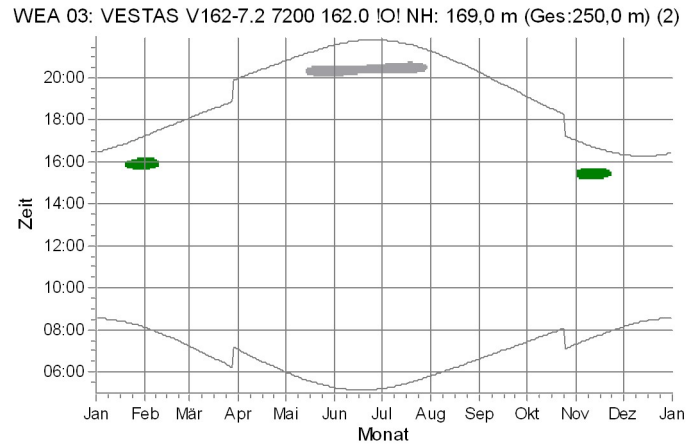
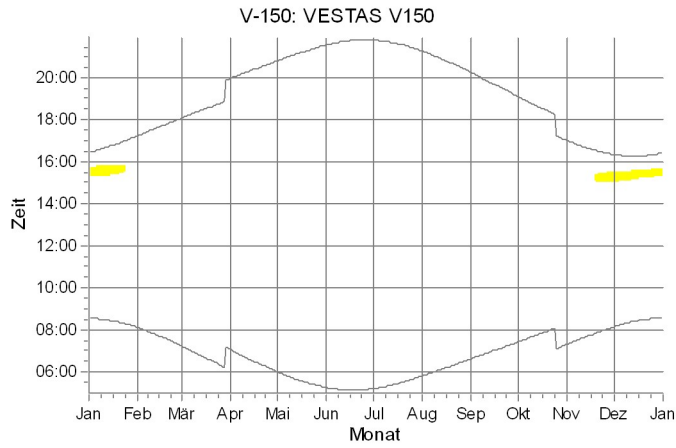
Table with columns for months (Januar to Dezember) and rows for days, showing sunrise/sunset times and shadow duration. Includes summary rows for 'Sonnenscheinstunden' and 'Anzahl Minuten mit Schatten'.

Tabellen-Layout: Die Daten für jeden Tag sind in folgender Matrix wiedergegeben (Sommerzeit wie Bezugsjahr):

Tag im Monat Sonnenaufgang (SS:MM) Sonnenuntergang (SS:MM) Zeitpunkt (SS:MM) Schattenanfang-Zeitpunkt (SS:MM) Schattenende/Minuten mit Schatten

SHADOW - Grafischer Kalender pro WEA

Berechnung: Gesamtbelastung



Schattenrezeptoren

	SR A: Müllmerg 1, 33178 Borchten		SR F: Kattenecke 17, 33178 Borchten		SR L: Strothe 1, 33178 Borchten
	SR B: Westernstraße 59, 33178 Borchten		SR G: Kattenecke 13, 33178 Borchten		SR M: Vienenburg 2, 33165 Lichtenau
	SR C: Bohmweg 23, 33178 Borchten		SR H: Kattenecke 15a, 33178 Borchten		SR N: Zum Menthal 2, 33165 Lichtenau
	SR D: Kattenecke 19, 33178 Borchten		SR I: Strothe 4a, 33178 Borchten		SR O: Zum Menthal 1, 33165 Lichtenau
	SR E: Kattenecke 14, 33178 Borchten		SR K: Strothe 6, 33178 Borchten		SR Q: Zum Menthal 7, 33165 Lichtenau