

9 PRIEDAS

Šešėliavimo sklaidos modeliavimo rezultatai

**Prognozuojamas PŪV šešėliavimo
vertinimas "1" alternatyva**

Project:

UAB Eurostat 1 planuojamos ukines veiklos – vejo elektriniu irengimas Pasvalio r. sav., Pusaloto sen., Pagirnupiu k., Jaciunu k., Matkunu k., Deglenu k., Daukuciu vs., Jakuboniu k., Sermuksniu k., Mickaiciu k., Budininku k., Kidzioniu k., Ozkyciu k. ir Panevezio r. sav., Panevezio sen., Pazuku k., Eimuliskio k., Grippedziu k., Staciunu k.

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LT-09308 Vilnius
+370 862509216
Calculated:
2024-11-18 17:18/4.1.254

SHADOW - Main Result

Calculation: SHADOW

Assumptions for shadow calculations

Maximum distance for influence

Calculate only when more than 20 % of sun is covered by the blade

Please look in WTG table

Minimum sun height over horizon for influence

3 °

Day step for calculation

1 days

Time step for calculation

1 minutes

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1,41	2,36	4,03	5,55	8,35	8,36	8,16	7,72	5,06	3,23	1,33	0,98

Operational hours are calculated from WTGs in calculation and wind distribution:

Site data: ATLAS; 12 sectors; Radius: 43 000 m (3)

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
988	523	242	299	598	654	791	1 049	1 227	1 039	784	564	8 760

Monthly aggregation of real case reduction

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

A ZVI (Zones of Visual Influence) calculation is performed before flicker calculation so non visible WTG do not contribute to calculated flicker values. A WTG will be visible if it is visible from any part of the receiver window. The ZVI calculation is based on the following assumptions:
DHM: Project Wizard Elevation Data Grid (SRTM: Shuttle DTM 1 arc-second)
Receptor grid resolution: 1,0 m
Topographic shadow included in calculation

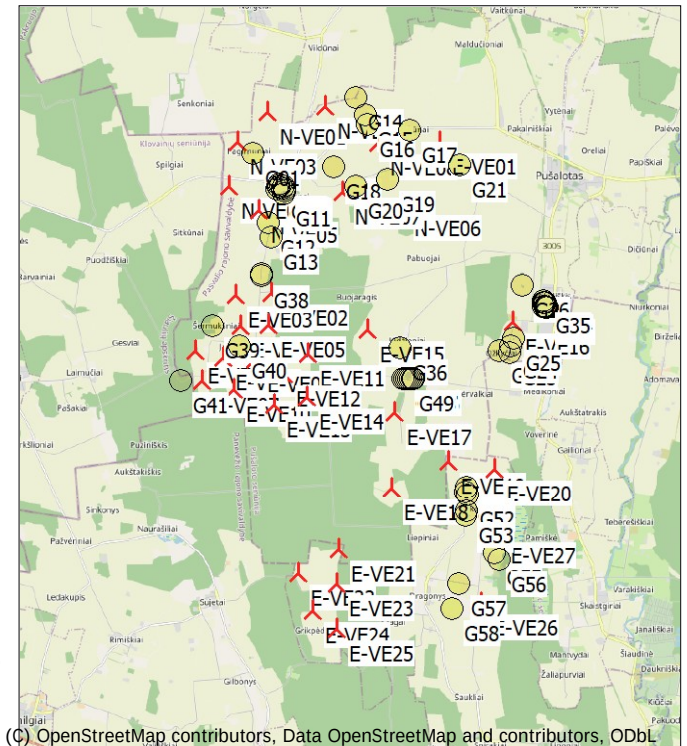
All coordinates are in

Lithuanian TM LKS94-LKS94 (LT)

WTGs

	Y	X	Z	Row data/Description	WTG type			Power, rated [kW]	Rotor diameter [m]	Hub height [m]	Shadow data	
					Valid	Manufact.	Type-generator				Calculation distance [m]	RPM
			[m]									[RPM]
E-VE01	511 774	6 200 739	47,5	NORDEX N175/6.X 6800 175.0...Yes	Yes	NORDEX	N175/6.X-6 800	6 800	175,0	179,0	1 893	10,8
E-VE02	507 315	6 196 732	53,0	NORDEX N175/6.X 6800 175.0...Yes	Yes	NORDEX	N175/6.X-6 800	6 800	175,0	179,0	1 893	10,8
E-VE03	506 375	6 196 675	54,7	NORDEX N175/6.X 6800 175.0...Yes	Yes	NORDEX	N175/6.X-6 800	6 800	175,0	179,0	1 893	10,8
E-VE04	506 501	6 195 859	52,0	NORDEX N175/6.X 6800 175.0...Yes	Yes	NORDEX	N175/6.X-6 800	6 800	175,0	179,0	1 893	10,8
E-VE05	507 253	6 195 881	52,2	NORDEX N175/6.X 6800 175.0...Yes	Yes	NORDEX	N175/6.X-6 800	6 800	175,0	179,0	1 893	10,8
E-VE06	505 294	6 195 211	55,3	NORDEX N175/6.X 6800 175.0...Yes	Yes	NORDEX	N175/6.X-6 800	6 800	175,0	179,0	1 893	10,8
E-VE07	505 491	6 194 401	54,0	NORDEX N175/6.X 6800 175.0...Yes	Yes	NORDEX	N175/6.X-6 800	6 800	175,0	179,0	1 893	10,8
E-VE08	506 035	6 195 026	53,7	NORDEX N175/6.X 6800 175.0...Yes	Yes	NORDEX	N175/6.X-6 800	6 800	175,0	179,0	1 893	10,8
E-VE09	506 884	6 194 962	53,3	NORDEX N175/6.X 6800 175.0...Yes	Yes	NORDEX	N175/6.X-6 800	6 800	175,0	179,0	1 893	10,8
E-VE10	506 331	6 194 190	54,0	NORDEX N175/6.X 6800 175.0...Yes	Yes	NORDEX	N175/6.X-6 800	6 800	175,0	179,0	1 893	10,8
E-VE11	508 295	6 195 151	50,4	NORDEX N175/6.X 6800 175.0...Yes	Yes	NORDEX	N175/6.X-6 800	6 800	175,0	179,0	1 893	10,8
E-VE12	507 655	6 194 577	52,3	NORDEX N175/6.X 6800 175.0...Yes	Yes	NORDEX	N175/6.X-6 800	6 800	175,0	179,0	1 893	10,8
E-VE13	507 391	6 193 769	53,5	NORDEX N175/6.X 6800 175.0...Yes	Yes	NORDEX	N175/6.X-6 800	6 800	175,0	179,0	1 893	10,8
E-VE14	508 259	6 193 993	52,0	NORDEX N175/6.X 6800 175.0...Yes	Yes	NORDEX	N175/6.X-6 800	6 800	175,0	179,0	1 893	10,8
E-VE15	509 883	6 195 766	50,4	NORDEX N175/6.X 6800 175.0...Yes	Yes	NORDEX	N175/6.X-6 800	6 800	175,0	179,0	1 893	10,8
E-VE16	513 718	6 195 996	46,0	NORDEX N175/6.X 6800 175.0...Yes	Yes	NORDEX	N175/6.X-6 800	6 800	175,0	179,0	1 893	10,8
E-VE17	510 597	6 193 591	53,2	NORDEX N175/6.X 6800 175.0...Yes	Yes	NORDEX	N175/6.X-6 800	6 800	175,0	179,0	1 893	10,8
E-VE18	510 530	6 191 574	50,0	NORDEX N175/6.X 6800 175.0...Yes	Yes	NORDEX	N175/6.X-6 800	6 800	175,0	179,0	1 893	10,8
E-VE19	512 020	6 192 269	46,3	NORDEX N175/6.X 6800 175.0...Yes	Yes	NORDEX	N175/6.X-6 800	6 800	175,0	179,0	1 893	10,8
E-VE20	513 240	6 192 097	45,3	NORDEX N175/6.X 6800 175.0...Yes	Yes	NORDEX	N175/6.X-6 800	6 800	175,0	179,0	1 893	10,8
E-VE21	509 118	6 189 929	53,2	NORDEX N175/6.X 6800 175.0...Yes	Yes	NORDEX	N175/6.X-6 800	6 800	175,0	179,0	1 893	10,8
E-VE22	508 045	6 189 297	55,0	NORDEX N175/6.X 6800 175.0...Yes	Yes	NORDEX	N175/6.X-6 800	6 800	175,0	179,0	1 893	10,8
E-VE23	509 083	6 189 002	52,3	NORDEX N175/6.X 6800 175.0...Yes	Yes	NORDEX	N175/6.X-6 800	6 800	175,0	179,0	1 893	10,8
E-VE24	508 432	6 188 305	52,0	NORDEX N175/6.X 6800 175.0...Yes	Yes	NORDEX	N175/6.X-6 800	6 800	175,0	179,0	1 893	10,8
E-VE25	509 068	6 187 814	51,8	NORDEX N175/6.X 6800 175.0...Yes	Yes	NORDEX	N175/6.X-6 800	6 800	175,0	179,0	1 893	10,8
E-VE26	512 902	6 188 519	46,5	NORDEX N175/6.X 6800 175.0...Yes	Yes	NORDEX	N175/6.X-6 800	6 800	175,0	179,0	1 893	10,8
E-VE27	513 359	6 190 431	47,0	NORDEX N175/6.X 6800 175.0...Yes	Yes	NORDEX	N175/6.X-6 800	6 800	175,0	179,0	1 893	10,8
N-VE01	507 209	6 201 524	51,0	NORDEX N175/6.X 6800 175.0...Yes	Yes	NORDEX	N175/6.X-6 800	6 800	175,0	179,0	1 893	10,8
N-VE02	508 734	6 201 665	47,0	NORDEX N175/6.X 6800 175.0...Yes	Yes	NORDEX	N175/6.X-6 800	6 800	175,0	179,0	1 893	10,8

To be continued on next page...



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Scale 1:200 000

New WTG

Shadow receptor

Project:

UAB Eurostat 1 planuojamos ukinės veiklos – vejo elektriniu irengimas Pasvalio r. sav., Pusaloto sen., Pagirniupių k., Jaciunu k., Matkunu k., Deglenu k., Daukuciu vs., Jakubonių k., Sermuksnių k., Mickaiciu k., Budininku k., Kidzionių k., Ozkyciu k. ir Panevezio r. sav., Panevezio sen., Pazuku k., Eimuliskio k., Grippedziu k., Staciunu k.

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2024-11-18 17:18/4.1.254

SHADOW - Main Result

Calculation: SHADOW

...continued from previous page

	Y	X	Z	Row data/Description	WTG type		Type-generator	Power, rated [kW]	Rotor diameter [m]	Hub height [m]	Shadow data	
					Valid	Manufact.					Calculation distance [m]	RPM
			[m]									[RPM]
N-VE03	506 435	6 200 737	50,4	NORDEX N175/6.X 6800 175.0...Yes		NORDEX	N175/6.X-6 800	6 800	175,0	179,0	1 893	10,8
N-VE04	506 209	6 199 545	52,6	NORDEX N175/6.X 6800 175.0...Yes		NORDEX	N175/6.X-6 800	6 800	175,0	179,0	1 893	10,8
N-VE05	506 994	6 198 936	50,6	NORDEX N175/6.X 6800 175.0...Yes		NORDEX	N175/6.X-6 800	6 800	175,0	179,0	1 893	10,8
N-VE06	510 789	6 199 120	51,0	NORDEX N175/6.X 6800 175.0...Yes		NORDEX	N175/6.X-6 800	6 800	175,0	179,0	1 893	10,8
N-VE07	509 212	6 199 396	48,3	NORDEX N175/6.X 6800 175.0...Yes		NORDEX	N175/6.X-6 800	6 800	175,0	179,0	1 893	10,8
N-VE08	510 142	6 200 713	47,9	NORDEX N175/6.X 6800 175.0...Yes		NORDEX	N175/6.X-6 800	6 800	175,0	179,0	1 893	10,8

Shadow receptor-Input

No.	Y	X	Z	Width	Height	Elevation a.g.l.	Slope of window	Direction mode	Eye height (ZvI) a.g.l.
			[m]	[m]	[m]	[m]	[°]		[m]
G01	506 843	6 200 422	54,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G02	507 506	6 199 600	51,9	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G03	507 490	6 199 545	52,7	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G04	507 464	6 199 492	53,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G05	507 561	6 199 583	52,4	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G06	507 632	6 199 555	53,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G07	507 619	6 199 509	53,5	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G08	507 537	6 199 529	52,3	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G09	507 682	6 199 497	53,8	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G10	507 669	6 199 423	53,1	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G11	507 642	6 199 366	54,3	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G12	507 228	6 198 595	55,8	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G13	507 313	6 198 194	54,4	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G14	509 558	6 201 886	47,1	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G15	509 794	6 201 446	49,3	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G16	509 856	6 201 185	51,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G17	510 988	6 201 034	51,6	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G18	508 962	6 200 071	50,7	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G19	510 413	6 199 759	48,9	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G20	509 553	6 199 558	53,4	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G21	512 320	6 200 121	50,9	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G22	513 368	6 195 217	46,4	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G23	513 633	6 195 185	45,8	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G24	513 680	6 195 355	46,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G25	513 740	6 195 540	45,6	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G26	513 978	6 196 950	47,1	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G27	514 634	6 196 384	46,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G28	514 618	6 196 386	45,9	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G29	514 593	6 196 389	45,7	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G30	514 567	6 196 392	44,3	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G31	514 535	6 196 397	43,3	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G32	514 544	6 196 497	44,3	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G33	514 564	6 196 494	45,2	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G34	514 587	6 196 492	45,9	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G35	514 541	6 196 549	43,6	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G36	510 744	6 195 273	52,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G37	507 058	6 197 245	55,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G38	507 055	6 197 200	55,4	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G39	505 767	6 195 866	56,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G40	506 485	6 195 329	55,6	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G41	504 924	6 194 409	55,7	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G42	510 825	6 194 492	51,1	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G43	510 860	6 194 485	51,5	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G44	511 099	6 194 463	50,7	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G45	511 072	6 194 465	51,4	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G46	511 051	6 194 468	52,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G47	511 018	6 194 470	52,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G48	510 973	6 194 477	51,6	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G49	510 940	6 194 480	51,1	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G50	512 500	6 191 593	49,9	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G51	512 482	6 191 483	48,8	1,0	1,0	1,0	90,0	"Green house mode"	2,0

To be continued on next page...

Project:

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Calculated:

2024-11-18 17:18/4.1.254

SHADOW - Main Result

Calculation: SHADOW

...continued from previous page

No.	Y	X	Z	Width	Height	Elevation a.g.l.	Slope of window	Direction mode	Eye height (ZVI) a.g.l.
			[m]	[m]	[m]	[m]	[°]		[m]
G52	512 537	6 191 402	49,6	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G53	512 499	6 190 966	48,8	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G54	512 499	6 190 841	50,4	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G55	513 257	6 189 826	47,4	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G56	513 387	6 189 656	46,7	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G57	512 309	6 189 025	50,4	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G58	512 133	6 188 384	48,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0

Calculation Results

Shadow receptor

Shadow, expected values

No. Shadow hours

per year

[h/year]

G01	4:38
G02	12:54
G03	14:05
G04	15:50
G05	12:20
G06	11:59
G07	12:57
G08	13:36
G09	12:24
G10	13:44
G11	15:17
G12	0:00
G13	2:07
G14	11:25
G15	17:11
G16	28:24
G17	14:44
G18	22:20
G19	18:09
G20	44:53
G21	1:34
G22	0:00
G23	0:00
G24	0:00
G25	0:00
G26	5:10
G27	5:31
G28	5:40
G29	5:56
G30	6:12
G31	6:32
G32	5:37
G33	5:27
G34	5:15
G35	5:22
G36	11:41
G37	22:58
G38	26:03
G39	40:32
G40	52:11
G41	44:05
G42	5:58
G43	6:10
G44	6:11
G45	6:19
G46	6:23
G47	6:26
G48	6:25
G49	6:22

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UAB Eurostat 1 planuojamos ukines veiklos – vejo elektriniu irengimas Pasvalio r. sav., Pusaloto sen., Pagirnupiu k., Jaciunu k., Matkunu k., Deglenu k., Daukuciu vs., Jakuboniu k., Sermuksniu k., Mickaiciu k., Budininku k., Kidzioniu k., Ozkyciu k. ir Panevezio r. sav., Panevezio sen., Pazuku k., Eimuliskio k., Grippedziu k., Staciunu k.

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SHADOW - Main Result

Calculation: SHADOW

...continued from previous page

Shadow, expected values

No. Shadow hours

per year

[h/year]

G50	8:03
G51	2:51
G52	3:09
G53	5:05
G54	5:56
G55	1:25
G56	3:34
G57	8:05
G58	18:48

Total amount of flickering on the shadow receptors caused by each WTG

No.	Name	Expected [h/year]
E-VE01	NORDEX N175/6.X 6800 175.0 !-! hub: 179,0 m (TOT: 266,5 m) (9)	13:26
E-VE02	NORDEX N175/6.X 6800 175.0 !-! hub: 179,0 m (TOT: 266,5 m) (10)	25:34
E-VE03	NORDEX N175/6.X 6800 175.0 !-! hub: 179,0 m (TOT: 266,5 m) (11)	10:28
E-VE04	NORDEX N175/6.X 6800 175.0 !-! hub: 179,0 m (TOT: 266,5 m) (12)	16:53
E-VE05	NORDEX N175/6.X 6800 175.0 !-! hub: 179,0 m (TOT: 266,5 m) (13)	6:04
E-VE06	NORDEX N175/6.X 6800 175.0 !-! hub: 179,0 m (TOT: 266,5 m) (14)	12:03
E-VE07	NORDEX N175/6.X 6800 175.0 !-! hub: 179,0 m (TOT: 266,5 m) (15)	31:49
E-VE08	NORDEX N175/6.X 6800 175.0 !-! hub: 179,0 m (TOT: 266,5 m) (16)	36:33
E-VE09	NORDEX N175/6.X 6800 175.0 !-! hub: 179,0 m (TOT: 266,5 m) (17)	18:41
E-VE10	NORDEX N175/6.X 6800 175.0 !-! hub: 179,0 m (TOT: 266,5 m) (18)	5:26
E-VE11	NORDEX N175/6.X 6800 175.0 !-! hub: 179,0 m (TOT: 266,5 m) (19)	1:47
E-VE12	NORDEX N175/6.X 6800 175.0 !-! hub: 179,0 m (TOT: 266,5 m) (20)	2:42
E-VE13	NORDEX N175/6.X 6800 175.0 !-! hub: 179,0 m (TOT: 266,5 m) (21)	1:42
E-VE14	NORDEX N175/6.X 6800 175.0 !-! hub: 179,0 m (TOT: 266,5 m) (22)	0:00
E-VE15	NORDEX N175/6.X 6800 175.0 !-! hub: 179,0 m (TOT: 266,5 m) (23)	11:41
E-VE16	NORDEX N175/6.X 6800 175.0 !-! hub: 179,0 m (TOT: 266,5 m) (24)	18:43
E-VE17	NORDEX N175/6.X 6800 175.0 !-! hub: 179,0 m (TOT: 266,5 m) (25)	16:56
E-VE18	NORDEX N175/6.X 6800 175.0 !-! hub: 179,0 m (TOT: 266,5 m) (26)	0:00
E-VE19	NORDEX N175/6.X 6800 175.0 !-! hub: 179,0 m (TOT: 266,5 m) (27)	0:00
E-VE20	NORDEX N175/6.X 6800 175.0 !-! hub: 179,0 m (TOT: 266,5 m) (36)	4:41
E-VE21	NORDEX N175/6.X 6800 175.0 !-! hub: 179,0 m (TOT: 266,5 m) (29)	0:00
E-VE22	NORDEX N175/6.X 6800 175.0 !-! hub: 179,0 m (TOT: 266,5 m) (30)	0:00
E-VE23	NORDEX N175/6.X 6800 175.0 !-! hub: 179,0 m (TOT: 266,5 m) (31)	0:00
E-VE24	NORDEX N175/6.X 6800 175.0 !-! hub: 179,0 m (TOT: 266,5 m) (32)	0:00
E-VE25	NORDEX N175/6.X 6800 175.0 !-! hub: 179,0 m (TOT: 266,5 m) (33)	0:00
E-VE26	NORDEX N175/6.X 6800 175.0 !-! hub: 179,0 m (TOT: 266,5 m) (34)	31:54
E-VE27	NORDEX N175/6.X 6800 175.0 !-! hub: 179,0 m (TOT: 266,5 m) (35)	15:06
N-VE01	NORDEX N175/6.X 6800 175.0 !-! hub: 179,0 m (TOT: 266,5 m) (1)	0:00
N-VE02	NORDEX N175/6.X 6800 175.0 !-! hub: 179,0 m (TOT: 266,5 m) (2)	29:17
N-VE03	NORDEX N175/6.X 6800 175.0 !-! hub: 179,0 m (TOT: 266,5 m) (3)	0:00
N-VE04	NORDEX N175/6.X 6800 175.0 !-! hub: 179,0 m (TOT: 266,5 m) (4)	15:22
N-VE05	NORDEX N175/6.X 6800 175.0 !-! hub: 179,0 m (TOT: 266,5 m) (5)	23:21
N-VE06	NORDEX N175/6.X 6800 175.0 !-! hub: 179,0 m (TOT: 266,5 m) (6)	13:57
N-VE07	NORDEX N175/6.X 6800 175.0 !-! hub: 179,0 m (TOT: 266,5 m) (7)	62:16
N-VE08	NORDEX N175/6.X 6800 175.0 !-! hub: 179,0 m (TOT: 266,5 m) (8)	39:30

Total times in Receptor wise and WTG wise tables can differ, as a WTG can lead to flicker at 2 or more receptors simultaneously and/or receptors may receive flicker from 2 or more WTGs simultaneously.

The calculation of the total expected values for a given receptor assumes a weighted average directional reduction for all WTGs contributing to shadow flicker within the same day. In the case where shadow flicker from different WTGs is not concurrent within the day, the total expected time at a given receptor may deviate marginally from the individual flicker time caused by each turbine separately.

Project:

UAB Eurostat 1 planuojamos ukines veiklos – vejo elektriniu irengimas Pasvalio r. sav., Pusaloto sen., Pagirnapiu k., Jaciunu k., Matkunu k., Deglenu k., Daukuciu vs., Jakuboniu k., Sermuksniu k., Mickaiciu k., Budininku k., Kidzioniu k., Ozkyciu k. ir Panevezio r. sav., Panevezio sen., Pazuku k., Eimuliskio k., Grippedziu k., Staciunu k.

Licensed user:

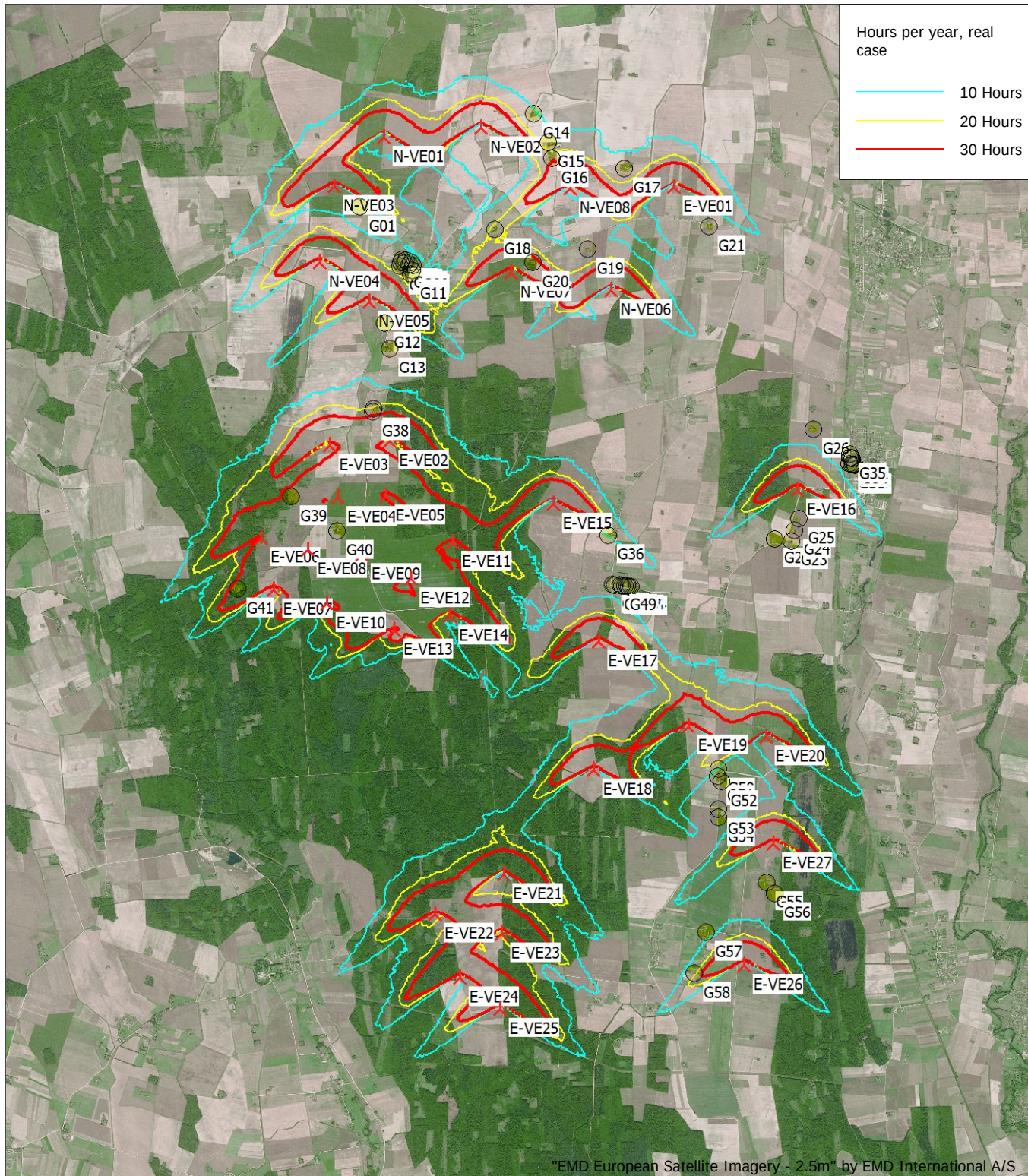
UAB ARCHSTUDIJA
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+370 862509216

Calculated:

2024-11-18 17:18/4.1.254

SHADOW - Map

Calculation: SHADOW



Map: windPRO European Satellite Imagery - 2.5m , Print scale 1:90 000, Map center Lithuanian TM LKS94-LKS94 (LT) East: 509 712 North: 6 194 753
New WTG Shadow receptor
Flicker map level: Project Wizard Elevation Data Grid (SRTM: Shuttle DTM 1 arc-second)
Time step: 4 minutes, Day step: 14 days, Map resolution: 30 m, Visibility resolution: 15 m, Eye height: 1,5 m

**PŪV šēšēliavimo mažinimas
(shadow shut-down)
"1" alternatyva**

Project:

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Calculated:

2024-11-19 09:31/4.1.254

SHADOW - Main Result

Calculation: SHADOW

Assumptions for shadow calculations

Maximum distance for influence

Calculate only when more than 20 % of sun is covered by the blade

Please look in WTG table

Minimum sun height over horizon for influence

3 °

Day step for calculation

1 days

Time step for calculation

1 minutes

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1,41	2,36	4,03	5,55	8,35	8,36	8,16	7,72	5,06	3,23	1,33	0,98

Operational hours are calculated from WTGs in calculation and wind distribution:

Site data: ATLAS; 12 sectors; Radius: 43 000 m (3)

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
988	523	242	299	598	654	791	1 049	1 227	1 039	784	564	8 760

Monthly aggregation of real case reduction

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

Flicker curtailment by stopping specific turbines

A ZVI (Zones of Visual Influence) calculation is performed before flicker calculation so non visible WTG do not contribute to calculated flicker values. A WTG will be visible if it is visible from any part of the receiver window. The ZVI calculation is based on the following assumptions:

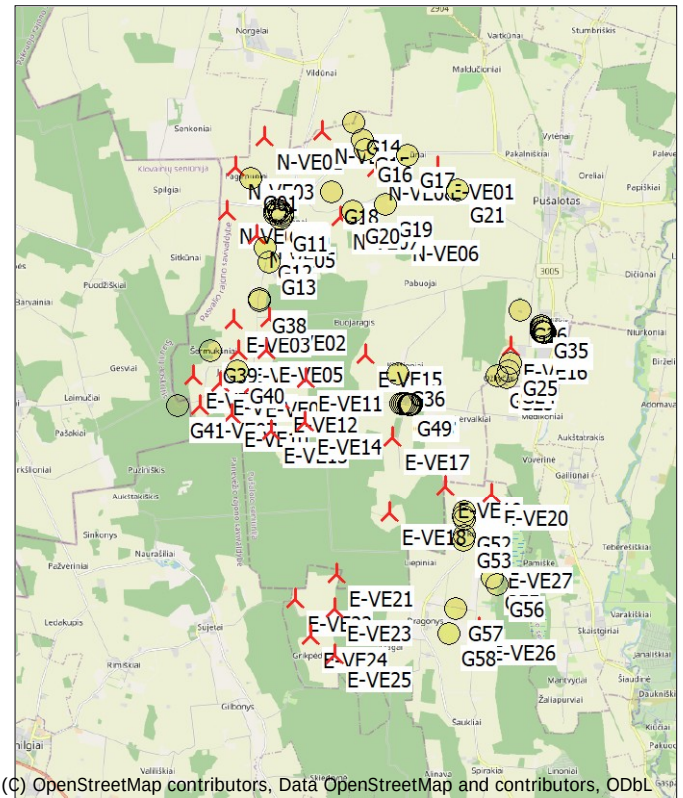
DHM: Project Wizard Elevation Data Grid (SRTM: Shuttle DTM 1 arc-second)

Receptor grid resolution: 1,0 m

Topographic shadow included in calculation

All coordinates are in

Lithuanian TM LKS94-LKS94 (LT)



(C) OpenStreetMap contributors, Data OpenStreetMap and contributors, ODbL

Scale 1:200 000

▲ New WTG

● Shadow receptor

WTGs

	Y	X	Z	Row data/Description	WTG type			Power, rated [kW]	Rotor diameter [m]	Hub height [m]	Shadow data	
					Valid	Manufact.	Type-generator				Calculation distance [m]	RPM
			[m]									[RPM]
E-VE01	511 774	6 200 739	47,5	NORDEX N175/6.X 6800 175.0...Yes		NORDEX	N175/6.X-6 800	6 800	175,0	179,0	1 893	10,8
E-VE02	507 315	6 196 732	53,0	NORDEX N175/6.X 6800 175.0...Yes		NORDEX	N175/6.X-6 800	6 800	175,0	179,0	1 893	10,8
E-VE03	506 375	6 196 675	54,7	NORDEX N175/6.X 6800 175.0...Yes		NORDEX	N175/6.X-6 800	6 800	175,0	179,0	1 893	10,8
E-VE04	506 501	6 195 859	52,0	NORDEX N175/6.X 6800 175.0...Yes		NORDEX	N175/6.X-6 800	6 800	175,0	179,0	1 893	10,8
E-VE05	507 253	6 195 881	52,2	NORDEX N175/6.X 6800 175.0...Yes		NORDEX	N175/6.X-6 800	6 800	175,0	179,0	1 893	10,8
E-VE06	505 294	6 195 211	55,3	NORDEX N175/6.X 6800 175.0...Yes		NORDEX	N175/6.X-6 800	6 800	175,0	179,0	1 893	10,8
E-VE07	505 491	6 194 401	54,0	NORDEX N175/6.X 6800 175.0...Yes		NORDEX	N175/6.X-6 800	6 800	175,0	179,0	1 893	10,8
E-VE08	506 035	6 195 026	53,7	NORDEX N175/6.X 6800 175.0...Yes		NORDEX	N175/6.X-6 800	6 800	175,0	179,0	1 893	10,8
E-VE09	506 884	6 194 962	53,3	NORDEX N175/6.X 6800 175.0...Yes		NORDEX	N175/6.X-6 800	6 800	175,0	179,0	1 893	10,8
E-VE10	506 331	6 194 190	54,0	NORDEX N175/6.X 6800 175.0...Yes		NORDEX	N175/6.X-6 800	6 800	175,0	179,0	1 893	10,8
E-VE11	508 295	6 195 151	50,4	NORDEX N175/6.X 6800 175.0...Yes		NORDEX	N175/6.X-6 800	6 800	175,0	179,0	1 893	10,8
E-VE12	507 655	6 194 577	52,3	NORDEX N175/6.X 6800 175.0...Yes		NORDEX	N175/6.X-6 800	6 800	175,0	179,0	1 893	10,8
E-VE13	507 391	6 193 769	53,5	NORDEX N175/6.X 6800 175.0...Yes		NORDEX	N175/6.X-6 800	6 800	175,0	179,0	1 893	10,8
E-VE14	508 259	6 193 993	52,0	NORDEX N175/6.X 6800 175.0...Yes		NORDEX	N175/6.X-6 800	6 800	175,0	179,0	1 893	10,8
E-VE15	509 883	6 195 766	50,4	NORDEX N175/6.X 6800 175.0...Yes		NORDEX	N175/6.X-6 800	6 800	175,0	179,0	1 893	10,8
E-VE16	513 718	6 195 996	46,0	NORDEX N175/6.X 6800 175.0...Yes		NORDEX	N175/6.X-6 800	6 800	175,0	179,0	1 893	10,8
E-VE17	510 597	6 193 591	53,2	NORDEX N175/6.X 6800 175.0...Yes		NORDEX	N175/6.X-6 800	6 800	175,0	179,0	1 893	10,8
E-VE18	510 530	6 191 574	50,0	NORDEX N175/6.X 6800 175.0...Yes		NORDEX	N175/6.X-6 800	6 800	175,0	179,0	1 893	10,8
E-VE19	512 020	6 192 269	46,3	NORDEX N175/6.X 6800 175.0...Yes		NORDEX	N175/6.X-6 800	6 800	175,0	179,0	1 893	10,8
E-VE20	513 240	6 192 097	45,3	NORDEX N175/6.X 6800 175.0...Yes		NORDEX	N175/6.X-6 800	6 800	175,0	179,0	1 893	10,8
E-VE21	509 118	6 189 929	53,2	NORDEX N175/6.X 6800 175.0...Yes		NORDEX	N175/6.X-6 800	6 800	175,0	179,0	1 893	10,8
E-VE22	508 045	6 189 297	55,0	NORDEX N175/6.X 6800 175.0...Yes		NORDEX	N175/6.X-6 800	6 800	175,0	179,0	1 893	10,8
E-VE23	509 083	6 189 002	52,3	NORDEX N175/6.X 6800 175.0...Yes		NORDEX	N175/6.X-6 800	6 800	175,0	179,0	1 893	10,8
E-VE24	508 432	6 188 305	52,0	NORDEX N175/6.X 6800 175.0...Yes		NORDEX	N175/6.X-6 800	6 800	175,0	179,0	1 893	10,8
E-VE25	509 068	6 187 814	51,8	NORDEX N175/6.X 6800 175.0...Yes		NORDEX	N175/6.X-6 800	6 800	175,0	179,0	1 893	10,8
E-VE26	512 902	6 188 519	46,5	NORDEX N175/6.X 6800 175.0...Yes		NORDEX	N175/6.X-6 800	6 800	175,0	179,0	1 893	10,8
E-VE27	513 359	6 190 431	47,0	NORDEX N175/6.X 6800 175.0...Yes		NORDEX	N175/6.X-6 800	6 800	175,0	179,0	1 893	10,8

To be continued on next page...

SHADOW - Main Result

Calculation: SHADOW

...continued from previous page

	Y	X	Z	Row data/Description	WTG type			Power, rated [kW]	Rotor diameter [m]	Hub height [m]	Shadow data	
					Valid	Manufact.	Type-generator				Calculation distance [m]	RPM
			[m]									[RPM]
N-VE01	507 209	6 201 524	51,0	NORDEX N175/6.X 6800 175.0...Yes	Yes	NORDEX	N175/6.X-6 800	6 800	175,0	179,0	1 893	10,8
N-VE02	508 734	6 201 665	47,0	NORDEX N175/6.X 6800 175.0...Yes	Yes	NORDEX	N175/6.X-6 800	6 800	175,0	179,0	1 893	10,8
N-VE03	506 435	6 200 737	50,4	NORDEX N175/6.X 6800 175.0...Yes	Yes	NORDEX	N175/6.X-6 800	6 800	175,0	179,0	1 893	10,8
N-VE04	506 209	6 199 545	52,6	NORDEX N175/6.X 6800 175.0...Yes	Yes	NORDEX	N175/6.X-6 800	6 800	175,0	179,0	1 893	10,8
N-VE05	506 994	6 198 936	50,6	NORDEX N175/6.X 6800 175.0...Yes	Yes	NORDEX	N175/6.X-6 800	6 800	175,0	179,0	1 893	10,8
N-VE06	510 789	6 199 120	51,0	NORDEX N175/6.X 6800 175.0...Yes	Yes	NORDEX	N175/6.X-6 800	6 800	175,0	179,0	1 893	10,8
N-VE07	509 212	6 199 396	48,3	NORDEX N175/6.X 6800 175.0...Yes	Yes	NORDEX	N175/6.X-6 800	6 800	175,0	179,0	1 893	10,8
N-VE08	510 142	6 200 713	47,9	NORDEX N175/6.X 6800 175.0...Yes	Yes	NORDEX	N175/6.X-6 800	6 800	175,0	179,0	1 893	10,8

Shadow receptor-Input

No.	Y	X	Z	Width	Height	Elevation a.g.l.	Slope of window	Direction mode	Eye height (ZVI) a.g.l.
			[m]	[m]	[m]	[m]	[°]		[m]
G01	506 843	6 200 422	54,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G02	507 506	6 199 600	51,9	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G03	507 490	6 199 545	52,7	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G04	507 464	6 199 492	53,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G05	507 561	6 199 583	52,4	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G06	507 632	6 199 555	53,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G07	507 619	6 199 509	53,5	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G08	507 537	6 199 529	52,3	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G09	507 682	6 199 497	53,8	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G10	507 669	6 199 423	53,1	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G11	507 642	6 199 366	54,3	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G12	507 228	6 198 595	55,8	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G13	507 313	6 198 194	54,4	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G14	509 558	6 201 886	47,1	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G15	509 794	6 201 446	49,3	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G16	509 856	6 201 185	51,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G17	510 988	6 201 034	51,6	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G18	508 962	6 200 071	50,7	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G19	510 413	6 199 759	48,9	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G20	509 553	6 199 558	53,4	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G21	512 320	6 200 121	50,9	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G22	513 368	6 195 217	46,4	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G23	513 633	6 195 185	45,8	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G24	513 680	6 195 355	46,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G25	513 740	6 195 540	45,6	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G26	513 978	6 196 950	47,1	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G27	514 634	6 196 384	46,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G28	514 618	6 196 386	45,9	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G29	514 593	6 196 389	45,7	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G30	514 567	6 196 392	44,3	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G31	514 535	6 196 397	43,3	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G32	514 544	6 196 497	44,3	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G33	514 564	6 196 494	45,2	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G34	514 587	6 196 492	45,9	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G35	514 541	6 196 549	43,6	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G36	510 744	6 195 273	52,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G37	507 058	6 197 245	55,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G38	507 055	6 197 200	55,4	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G39	505 767	6 195 866	56,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G40	506 485	6 195 329	55,6	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G41	504 924	6 194 409	55,7	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G42	510 825	6 194 492	51,1	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G43	510 860	6 194 485	51,5	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G44	511 099	6 194 463	50,7	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G45	511 072	6 194 465	51,4	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G46	511 051	6 194 468	52,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G47	511 018	6 194 470	52,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G48	510 973	6 194 477	51,6	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G49	510 940	6 194 480	51,1	1,0	1,0	1,0	90,0	"Green house mode"	2,0

To be continued on next page...

Project:

UAB Eurostat 1 planuojamos ukines veiklos – vejo elektriniu irengimas Pasvalio r. sav., Pusaloto sen., Pagirnapiu k., Jaciunu k., Matkunu k., Deglenu k., Daukuciu vs., Jakuboniu k., Sermuksniu k., Mickaiciu k., Budininku k., Kidzioniu k., Ozkyciu k. ir Panevezio r. sav., Panevezio sen., Pazuku k., Eimuliskio k., Grippedziu k., Staciunu k.

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Calculated:

2024-11-19 09:31/4.1.254

SHADOW - Main Result

Calculation: SHADOW

...continued from previous page

No.	Y	X	Z	Width	Height	Elevation a.g.l.	Slope of window	Direction mode	Eye height (ZVI) a.g.l.
			[m]	[m]	[m]	[m]	[°]		[m]
G50	512 500	6 191 593	49,9	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G51	512 482	6 191 483	48,8	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G52	512 537	6 191 402	49,6	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G53	512 499	6 190 966	48,8	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G54	512 499	6 190 841	50,4	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G55	513 257	6 189 826	47,4	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G56	513 387	6 189 656	46,7	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G57	512 309	6 189 025	50,4	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G58	512 133	6 188 384	48,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0

Calculation Results

Shadow receptor

Shadow, expected values

No.	Shadow hours per year [h/year]	Avoided hours per year [h/year]
G01	4:38	
G02	12:54	
G03	14:05	
G04	15:50	
G05	12:20	
G06	11:59	
G07	12:57	
G08	13:36	
G09	12:24	
G10	13:44	
G11	15:17	
G12	0:00	
G13	2:07	
G14	11:25	
G15	17:11	
G16	28:24	
G17	14:44	
G18	22:20	
G19	18:09	
G20*	3:13	41:39
G21	1:34	
G22	0:00	
G23	0:00	
G24	0:00	
G25	0:00	
G26	5:10	
G27	5:31	
G28	5:40	
G29	5:56	
G30	6:12	
G31	6:32	
G32	5:37	
G33	5:27	
G34	5:15	
G35	5:22	
G36	11:41	
G37	22:58	
G38	26:03	
G39*	27:00	13:32
G40*	28:17	23:54
G41*	14:54	29:10
G42	5:58	
G43	6:10	
G44	6:11	
G45	6:19	
G46	6:23	
G47	6:26	

To be continued on next page...

SHADOW - Main Result

Calculation: SHADOW

...continued from previous page

Shadow, expected values

No.	Shadow hours per year [h/year]	Avoided hours per year [h/year]
G48	6:25	
G49	6:22	
G50	8:03	
G51	2:51	
G52	3:09	
G53	5:05	
G54	5:56	
G55	1:25	
G56	3:34	
G57	8:05	
G58	18:48	

* Receptors where shadow flicker is reduced by curtailment

Total amount of flickering on the shadow receptors caused by each WTG

No.	Name	Stopped due to flicker curtailment [h/year]	Expected [h/year]
E-VE01	NORDEX N175/6.X 6800 175.0 !-! hub: 179,0 m (TOT: 266,5 m) (9)		13:26
E-VE02	NORDEX N175/6.X 6800 175.0 !-! hub: 179,0 m (TOT: 266,5 m) (10)		25:34
E-VE03	NORDEX N175/6.X 6800 175.0 !-! hub: 179,0 m (TOT: 266,5 m) (11)		10:28
E-VE04	NORDEX N175/6.X 6800 175.0 !-! hub: 179,0 m (TOT: 266,5 m) (12)	54:36	1:58
E-VE05	NORDEX N175/6.X 6800 175.0 !-! hub: 179,0 m (TOT: 266,5 m) (13)		6:04
E-VE06	NORDEX N175/6.X 6800 175.0 !-! hub: 179,0 m (TOT: 266,5 m) (14)	18:58	7:37
E-VE07	NORDEX N175/6.X 6800 175.0 !-! hub: 179,0 m (TOT: 266,5 m) (15)	100:41	2:38
E-VE08	NORDEX N175/6.X 6800 175.0 !-! hub: 179,0 m (TOT: 266,5 m) (16)	81:30	18:47
E-VE09	NORDEX N175/6.X 6800 175.0 !-! hub: 179,0 m (TOT: 266,5 m) (17)		18:41
E-VE10	NORDEX N175/6.X 6800 175.0 !-! hub: 179,0 m (TOT: 266,5 m) (18)		5:26
E-VE11	NORDEX N175/6.X 6800 175.0 !-! hub: 179,0 m (TOT: 266,5 m) (19)		1:47
E-VE12	NORDEX N175/6.X 6800 175.0 !-! hub: 179,0 m (TOT: 266,5 m) (20)		2:42
E-VE13	NORDEX N175/6.X 6800 175.0 !-! hub: 179,0 m (TOT: 266,5 m) (21)	17:19	0:00
E-VE14	NORDEX N175/6.X 6800 175.0 !-! hub: 179,0 m (TOT: 266,5 m) (22)		0:00
E-VE15	NORDEX N175/6.X 6800 175.0 !-! hub: 179,0 m (TOT: 266,5 m) (23)		11:41
E-VE16	NORDEX N175/6.X 6800 175.0 !-! hub: 179,0 m (TOT: 266,5 m) (24)		18:43
E-VE17	NORDEX N175/6.X 6800 175.0 !-! hub: 179,0 m (TOT: 266,5 m) (25)		16:56
E-VE18	NORDEX N175/6.X 6800 175.0 !-! hub: 179,0 m (TOT: 266,5 m) (26)		0:00
E-VE19	NORDEX N175/6.X 6800 175.0 !-! hub: 179,0 m (TOT: 266,5 m) (27)		0:00
E-VE20	NORDEX N175/6.X 6800 175.0 !-! hub: 179,0 m (TOT: 266,5 m) (36)		4:41
E-VE21	NORDEX N175/6.X 6800 175.0 !-! hub: 179,0 m (TOT: 266,5 m) (29)		0:00
E-VE22	NORDEX N175/6.X 6800 175.0 !-! hub: 179,0 m (TOT: 266,5 m) (30)		0:00
E-VE23	NORDEX N175/6.X 6800 175.0 !-! hub: 179,0 m (TOT: 266,5 m) (31)		0:00
E-VE24	NORDEX N175/6.X 6800 175.0 !-! hub: 179,0 m (TOT: 266,5 m) (32)		0:00
E-VE25	NORDEX N175/6.X 6800 175.0 !-! hub: 179,0 m (TOT: 266,5 m) (33)		0:00
E-VE26	NORDEX N175/6.X 6800 175.0 !-! hub: 179,0 m (TOT: 266,5 m) (34)		31:54
E-VE27	NORDEX N175/6.X 6800 175.0 !-! hub: 179,0 m (TOT: 266,5 m) (35)		15:06
N-VE01	NORDEX N175/6.X 6800 175.0 !-! hub: 179,0 m (TOT: 266,5 m) (1)		0:00
N-VE02	NORDEX N175/6.X 6800 175.0 !-! hub: 179,0 m (TOT: 266,5 m) (2)		29:17
N-VE03	NORDEX N175/6.X 6800 175.0 !-! hub: 179,0 m (TOT: 266,5 m) (3)		0:00
N-VE04	NORDEX N175/6.X 6800 175.0 !-! hub: 179,0 m (TOT: 266,5 m) (4)		15:22
N-VE05	NORDEX N175/6.X 6800 175.0 !-! hub: 179,0 m (TOT: 266,5 m) (5)		23:21
N-VE06	NORDEX N175/6.X 6800 175.0 !-! hub: 179,0 m (TOT: 266,5 m) (6)		13:57
N-VE07	NORDEX N175/6.X 6800 175.0 !-! hub: 179,0 m (TOT: 266,5 m) (7)	160:50	20:37
N-VE08	NORDEX N175/6.X 6800 175.0 !-! hub: 179,0 m (TOT: 266,5 m) (8)		39:30

Total times in Receptor wise and WTG wise tables can differ, as a WTG can lead to flicker at 2 or more receptors simultaneously and/or receptors may receive flicker from 2 or more WTGs simultaneously.

The calculation of the total expected values for a given receptor assumes a weighted average directional reduction for all WTGs contributing to shadow flicker within the same day. In the case where shadow flicker from different WTGs is not concurrent within the day, the total expected time at a given receptor may deviate marginally from the individual flicker time caused by each turbine separately.

**Prognozuojamas PŪV šešėliavimo
vertinimas "2" alternatyva**

Project:

UAB Eurostat 1 planuojamos ukines veiklos – vejo elektriniu irengimas Pasvalio r. sav., Pusaloto sen., Pagirnupiu k., Jaciunu k., Matkunu k., Deglenu k., Daukuciu vs., Jakuboniu k., Sermuksniu k., Mickaiciu k., Budininku k., Kidzioniu k., Ozkyciu k. ir Panevezio r. sav., Panevezio sen., Pazuku k., Eimuliskio k., Grippedziu k., Staciunu k.

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Calculated:

2024-11-18 12:52/4.1.254

SHADOW - Main Result

Calculation: SHADOW

Assumptions for shadow calculations

Maximum distance for influence

Calculate only when more than 20 % of sun is covered by the blade

Please look in WTG table

Minimum sun height over horizon for influence

3 °

Day step for calculation

1 days

Time step for calculation

1 minutes

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1,41	2,36	4,03	5,55	8,35	8,36	8,16	7,72	5,06	3,23	1,33	0,98

Operational hours are calculated from WTGs in calculation and wind distribution:

Site data: ATLAS; 12 sectors; Radius: 43 000 m (3)

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
949	502	233	287	574	628	760	1 008	1 178	998	753	542	8 411

Monthly aggregation of real case reduction

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

A ZVI (Zones of Visual Influence) calculation is performed before flicker calculation so non visible WTG do not contribute to calculated flicker values. A WTG will be visible if it is visible from any part of the receiver window. The ZVI calculation is based on the following assumptions:
DHM: Project Wizard Elevation Data Grid (SRTM: Shuttle DTM 1 arc-second)
Receptor grid resolution: 1,0 m
Topographic shadow included in calculation

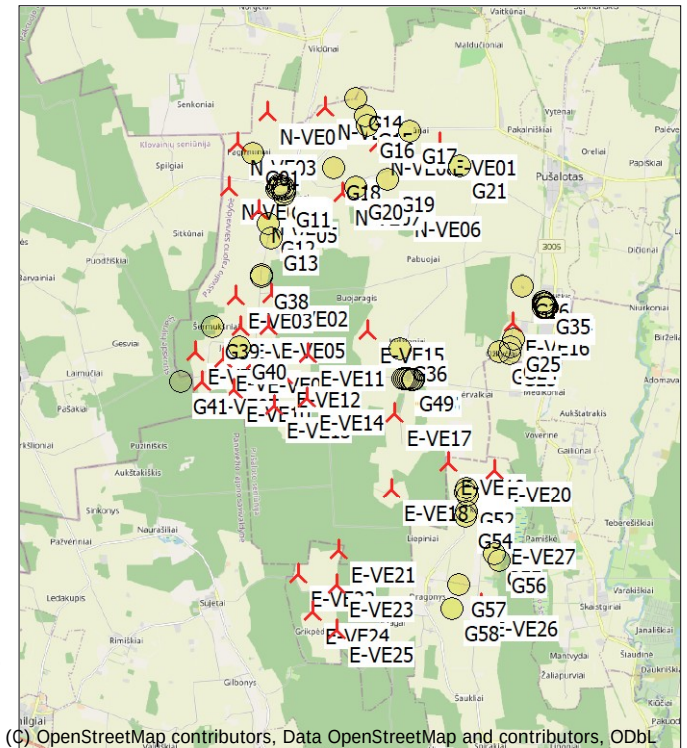
All coordinates are in

Lithuanian TM LKS94-LKS94 (LT)

WTGs

	Y	X	Z	Row data/Description	WTG type			Power, rated [kW]	Rotor diameter [m]	Hub height [m]	Shadow data	
					Valid	Manufact.	Type-generator				Calculation distance	RPM
											[m]	[RPM]
E-VE01	511 774	6 200 739	47,5	VESTAS V172-7.2 7200 172.0 !... Yes	Yes	VESTAS	V172-7.2-7 200	7 200	172,0	175,0	1 903	-
E-VE02	507 315	6 196 732	53,0	VESTAS V172-7.2 7200 172.0 !... Yes	Yes	VESTAS	V172-7.2-7 200	7 200	172,0	175,0	1 903	-
E-VE03	506 375	6 196 675	54,7	VESTAS V172-7.2 7200 172.0 !... Yes	Yes	VESTAS	V172-7.2-7 200	7 200	172,0	175,0	1 903	-
E-VE04	506 501	6 195 859	52,0	VESTAS V172-7.2 7200 172.0 !... Yes	Yes	VESTAS	V172-7.2-7 200	7 200	172,0	175,0	1 903	-
E-VE05	507 253	6 195 881	52,2	VESTAS V172-7.2 7200 172.0 !... Yes	Yes	VESTAS	V172-7.2-7 200	7 200	172,0	175,0	1 903	-
E-VE06	505 294	6 195 211	55,3	VESTAS V172-7.2 7200 172.0 !... Yes	Yes	VESTAS	V172-7.2-7 200	7 200	172,0	175,0	1 903	-
E-VE07	505 491	6 194 401	54,0	VESTAS V172-7.2 7200 172.0 !... Yes	Yes	VESTAS	V172-7.2-7 200	7 200	172,0	175,0	1 903	-
E-VE08	506 035	6 195 026	53,7	VESTAS V172-7.2 7200 172.0 !... Yes	Yes	VESTAS	V172-7.2-7 200	7 200	172,0	175,0	1 903	-
E-VE09	506 884	6 194 962	53,3	VESTAS V172-7.2 7200 172.0 !... Yes	Yes	VESTAS	V172-7.2-7 200	7 200	172,0	175,0	1 903	-
E-VE10	506 331	6 194 190	54,0	VESTAS V172-7.2 7200 172.0 !... Yes	Yes	VESTAS	V172-7.2-7 200	7 200	172,0	175,0	1 903	-
E-VE11	508 295	6 195 151	50,4	VESTAS V172-7.2 7200 172.0 !... Yes	Yes	VESTAS	V172-7.2-7 200	7 200	172,0	175,0	1 903	-
E-VE12	507 655	6 194 577	52,3	VESTAS V172-7.2 7200 172.0 !... Yes	Yes	VESTAS	V172-7.2-7 200	7 200	172,0	175,0	1 903	-
E-VE13	507 391	6 193 769	53,5	VESTAS V172-7.2 7200 172.0 !... Yes	Yes	VESTAS	V172-7.2-7 200	7 200	172,0	175,0	1 903	-
E-VE14	508 259	6 193 993	52,0	VESTAS V172-7.2 7200 172.0 !... Yes	Yes	VESTAS	V172-7.2-7 200	7 200	172,0	175,0	1 903	-
E-VE15	509 883	6 195 766	50,4	VESTAS V172-7.2 7200 172.0 !... Yes	Yes	VESTAS	V172-7.2-7 200	7 200	172,0	175,0	1 903	-
E-VE16	513 718	6 195 996	46,0	VESTAS V172-7.2 7200 172.0 !... Yes	Yes	VESTAS	V172-7.2-7 200	7 200	172,0	175,0	1 903	-
E-VE17	510 597	6 193 591	53,2	VESTAS V172-7.2 7200 172.0 !... Yes	Yes	VESTAS	V172-7.2-7 200	7 200	172,0	175,0	1 903	-
E-VE18	510 530	6 191 574	50,0	VESTAS V172-7.2 7200 172.0 !... Yes	Yes	VESTAS	V172-7.2-7 200	7 200	172,0	175,0	1 903	-
E-VE19	512 020	6 192 269	46,3	VESTAS V172-7.2 7200 172.0 !... Yes	Yes	VESTAS	V172-7.2-7 200	7 200	172,0	175,0	1 903	-
E-VE20	513 240	6 192 097	45,3	VESTAS V172-7.2 7200 172.0 !... Yes	Yes	VESTAS	V172-7.2-7 200	7 200	172,0	175,0	1 903	-
E-VE21	509 118	6 189 929	53,2	VESTAS V172-7.2 7200 172.0 !... Yes	Yes	VESTAS	V172-7.2-7 200	7 200	172,0	175,0	1 903	-
E-VE22	508 045	6 189 297	55,0	VESTAS V172-7.2 7200 172.0 !... Yes	Yes	VESTAS	V172-7.2-7 200	7 200	172,0	175,0	1 903	-
E-VE23	509 083	6 189 002	52,3	VESTAS V172-7.2 7200 172.0 !... Yes	Yes	VESTAS	V172-7.2-7 200	7 200	172,0	175,0	1 903	-
E-VE24	508 432	6 188 305	52,0	VESTAS V172-7.2 7200 172.0 !... Yes	Yes	VESTAS	V172-7.2-7 200	7 200	172,0	175,0	1 903	-
E-VE25	509 068	6 187 814	51,8	VESTAS V172-7.2 7200 172.0 !... Yes	Yes	VESTAS	V172-7.2-7 200	7 200	172,0	175,0	1 903	-
E-VE26	512 902	6 188 519	46,5	VESTAS V172-7.2 7200 172.0 !... Yes	Yes	VESTAS	V172-7.2-7 200	7 200	172,0	175,0	1 903	-
E-VE27	513 359	6 190 431	47,0	VESTAS V172-7.2 7200 172.0 !... Yes	Yes	VESTAS	V172-7.2-7 200	7 200	172,0	175,0	1 903	-
N-VE01	507 209	6 201 524	51,0	VESTAS V172-7.2 7200 172.0 !... Yes	Yes	VESTAS	V172-7.2-7 200	7 200	172,0	175,0	1 903	-
N-VE02	508 734	6 201 665	47,0	VESTAS V172-7.2 7200 172.0 !... Yes	Yes	VESTAS	V172-7.2-7 200	7 200	172,0	175,0	1 903	-

To be continued on next page...



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Scale 1:200 000

New WTG

Shadow receptor

Project:

UAB Eurostat 1 planuojamos ukines veiklos – vejo elektriniu irengimas Pasvalio r. sav., Pusaloto sen., Pagirnupiu k., Jaciunu k., Matkunu k., Deglenu k., Daukuciu vs., Jakuboniu k., Sermuksniu k., Mickaiciu k., Budininku k., Kidzioniu k., Ozkyciu k. ir Panevezio r. sav., Panevezio sen., Pazuku k., Eimuliskio k., Grippedziu k., Staciunu k.

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Calculated:

2024-11-18 12:52/4.1.254

SHADOW - Main Result

Calculation: SHADOW

...continued from previous page

	Y	X	Z	Row data/Description	WTG type			Power, rated [kW]	Rotor diameter [m]	Hub height [m]	Shadow data	
					Valid	Manufact.	Type-generator				Calculation distance [m]	RPM
			[m]									[RPM]
N-VE03	506 435	6 200 737	50,4	VESTAS V172-7.2 7200 172.0 !... Yes	Yes	VESTAS	V172-7.2-7 200	7 200	172,0	175,0	1 903	-
N-VE04	506 209	6 199 545	52,6	VESTAS V172-7.2 7200 172.0 !... Yes	Yes	VESTAS	V172-7.2-7 200	7 200	172,0	175,0	1 903	-
N-VE05	506 994	6 198 936	50,6	VESTAS V172-7.2 7200 172.0 !... Yes	Yes	VESTAS	V172-7.2-7 200	7 200	172,0	175,0	1 903	-
N-VE06	510 789	6 199 120	51,0	VESTAS V172-7.2 7200 172.0 !... Yes	Yes	VESTAS	V172-7.2-7 200	7 200	172,0	175,0	1 903	-
N-VE07	509 212	6 199 396	48,3	VESTAS V172-7.2 7200 172.0 !... Yes	Yes	VESTAS	V172-7.2-7 200	7 200	172,0	175,0	1 903	-
N-VE08	510 142	6 200 713	47,9	VESTAS V172-7.2 7200 172.0 !... Yes	Yes	VESTAS	V172-7.2-7 200	7 200	172,0	175,0	1 903	-

Shadow receptor-Input

No.	Y	X	Z	Width	Height	Elevation a.g.l.	Slope of window	Direction mode	Eye height (ZVI) a.g.l.
			[m]	[m]	[m]	[m]	[°]		[m]
G01	506 843	6 200 422	54,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G02	507 506	6 199 600	51,9	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G03	507 490	6 199 545	52,7	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G04	507 464	6 199 492	53,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G05	507 561	6 199 583	52,4	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G06	507 632	6 199 555	53,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G07	507 619	6 199 509	53,5	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G08	507 537	6 199 529	52,3	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G09	507 682	6 199 497	53,8	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G10	507 669	6 199 423	53,1	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G11	507 642	6 199 366	54,3	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G12	507 228	6 198 595	55,8	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G13	507 313	6 198 194	54,4	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G14	509 558	6 201 886	47,1	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G15	509 794	6 201 446	49,3	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G16	509 856	6 201 185	51,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G17	510 988	6 201 034	51,6	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G18	508 962	6 200 071	50,7	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G19	510 413	6 199 759	48,9	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G20	509 553	6 199 558	53,4	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G21	512 320	6 200 121	50,9	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G22	513 368	6 195 217	46,4	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G23	513 633	6 195 185	45,8	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G24	513 680	6 195 355	46,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G25	513 740	6 195 540	45,6	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G26	513 978	6 196 950	47,1	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G27	514 634	6 196 384	46,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G28	514 618	6 196 386	45,9	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G29	514 593	6 196 389	45,7	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G30	514 567	6 196 392	44,3	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G31	514 535	6 196 397	43,3	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G32	514 544	6 196 497	44,3	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G33	514 564	6 196 494	45,2	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G34	514 587	6 196 492	45,9	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G35	514 541	6 196 549	43,6	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G36	510 744	6 195 273	52,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G37	507 058	6 197 245	55,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G38	507 055	6 197 200	55,4	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G39	505 767	6 195 866	56,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G40	506 485	6 195 329	55,6	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G41	504 924	6 194 409	55,7	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G42	510 825	6 194 492	51,1	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G43	510 860	6 194 485	51,5	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G44	511 099	6 194 463	50,7	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G45	511 072	6 194 465	51,4	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G46	511 051	6 194 468	52,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G47	511 018	6 194 470	52,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G48	510 973	6 194 477	51,6	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G49	510 940	6 194 480	51,1	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G50	512 500	6 191 593	49,9	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G51	512 482	6 191 483	48,8	1,0	1,0	1,0	90,0	"Green house mode"	2,0

To be continued on next page...

Project:

UAB Eurostat 1 planuojamos ukines veiklos – vejo elektriniu irengimas Pasvalio r. sav., Pusaloto sen., Pagirnapiu k., Jaciunu k., Matkunu k., Deglenu k., Daukuciu vs., Jakuboniu k., Sermuksniu k., Mickaiciu k., Budininku k., Kidzioniu k., Ozkyciu k. ir Panevezio r. sav., Panevezio sen., Pazuku k., Eimuliskio k., Grippedziu k., Staciunu k.

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Calculated:

2024-11-18 12:52/4.1.254

SHADOW - Main Result

Calculation: SHADOW

...continued from previous page

No.	Y	X	Z	Width	Height	Elevation a.g.l.	Slope of window	Direction mode	Eye height (ZVI) a.g.l.
			[m]	[m]	[m]	[m]	[°]		[m]
G52	512 537	6 191 402	49,6	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G53	512 499	6 190 966	48,8	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G54	512 499	6 190 841	50,4	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G55	513 257	6 189 826	47,4	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G56	513 387	6 189 656	46,7	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G57	512 309	6 189 025	50,4	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G58	512 133	6 188 384	48,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0

Calculation Results

Shadow receptor

Shadow, expected values

No. Shadow hours

per year

[h/year]

G01	4:23
G02	12:01
G03	13:05
G04	14:37
G05	11:26
G06	11:04
G07	11:59
G08	12:35
G09	11:29
G10	12:47
G11	14:05
G12	0:00
G13	1:55
G14	10:33
G15	15:53
G16	25:49
G17	13:40
G18	20:57
G19	17:09
G20	41:20
G21	1:26
G22	0:00
G23	0:00
G24	0:00
G25	0:00
G26	4:42
G27	5:07
G28	5:15
G29	5:29
G30	5:44
G31	6:03
G32	5:13
G33	5:01
G34	4:52
G35	5:00
G36	11:22
G37	21:07
G38	23:57
G39	36:53
G40	48:39
G41	40:38
G42	5:29
G43	5:39
G44	5:48
G45	5:54
G46	5:56
G47	5:59
G48	5:55
G49	5:53

To be continued on next page...

Project:

UAB Eurostat 1 planuojamos ukines veiklos – vejo elektriniu irengimas Pasvalio r. sav., Pusaloto sen., Pagirrupiu k., Jaciunu k., Matkunu k., Deglenu k., Daukuciu vs., Jakuboniu k., Sermuksniu k., Mickaiciu k., Budininku k., Kidzioniu k., Ozkyciu k. ir Panevezio r. sav., Panevezio sen., Pazuku k., Eimuliskio k., Grikpedziu k., Staciunu k.

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Calculated:

2024-11-18 12:52/4.1.254

SHADOW - Main Result

Calculation: SHADOW

...continued from previous page

Shadow, expected values

No. Shadow hours

per year

[h/year]

G50	8:02
G51	2:42
G52	2:57
G53	4:43
G54	5:32
G55	1:11
G56	3:14
G57	7:31
G58	17:04

Total amount of flickering on the shadow receptors caused by each WTG

No.	Name	Expected [h/year]
E-VE01	VESTAS V172-7.2 7200 172.0 !O! hub: 175,0 m (TOT: 261,0 m) (9)	12:43
E-VE02	VESTAS V172-7.2 7200 172.0 !O! hub: 175,0 m (TOT: 261,0 m) (10)	23:23
E-VE03	VESTAS V172-7.2 7200 172.0 !O! hub: 175,0 m (TOT: 261,0 m) (11)	9:42
E-VE04	VESTAS V172-7.2 7200 172.0 !O! hub: 175,0 m (TOT: 261,0 m) (12)	15:20
E-VE05	VESTAS V172-7.2 7200 172.0 !O! hub: 175,0 m (TOT: 261,0 m) (13)	5:55
E-VE06	VESTAS V172-7.2 7200 172.0 !O! hub: 175,0 m (TOT: 261,0 m) (14)	11:12
E-VE07	VESTAS V172-7.2 7200 172.0 !O! hub: 175,0 m (TOT: 261,0 m) (15)	28:57
E-VE08	VESTAS V172-7.2 7200 172.0 !O! hub: 175,0 m (TOT: 261,0 m) (16)	34:12
E-VE09	VESTAS V172-7.2 7200 172.0 !O! hub: 175,0 m (TOT: 261,0 m) (17)	17:18
E-VE10	VESTAS V172-7.2 7200 172.0 !O! hub: 175,0 m (TOT: 261,0 m) (18)	4:52
E-VE11	VESTAS V172-7.2 7200 172.0 !O! hub: 175,0 m (TOT: 261,0 m) (19)	1:39
E-VE12	VESTAS V172-7.2 7200 172.0 !O! hub: 175,0 m (TOT: 261,0 m) (20)	2:30
E-VE13	VESTAS V172-7.2 7200 172.0 !O! hub: 175,0 m (TOT: 261,0 m) (21)	1:30
E-VE14	VESTAS V172-7.2 7200 172.0 !O! hub: 175,0 m (TOT: 261,0 m) (22)	0:00
E-VE15	VESTAS V172-7.2 7200 172.0 !O! hub: 175,0 m (TOT: 261,0 m) (23)	11:22
E-VE16	VESTAS V172-7.2 7200 172.0 !O! hub: 175,0 m (TOT: 261,0 m) (24)	17:26
E-VE17	VESTAS V172-7.2 7200 172.0 !O! hub: 175,0 m (TOT: 261,0 m) (25)	15:47
E-VE18	VESTAS V172-7.2 7200 172.0 !O! hub: 175,0 m (TOT: 261,0 m) (26)	0:00
E-VE19	VESTAS V172-7.2 7200 172.0 !O! hub: 175,0 m (TOT: 261,0 m) (27)	0:00
E-VE20	VESTAS V172-7.2 7200 172.0 !O! hub: 175,0 m (TOT: 261,0 m) (28)	4:51
E-VE21	VESTAS V172-7.2 7200 172.0 !O! hub: 175,0 m (TOT: 261,0 m) (29)	0:00
E-VE22	VESTAS V172-7.2 7200 172.0 !O! hub: 175,0 m (TOT: 261,0 m) (30)	0:00
E-VE23	VESTAS V172-7.2 7200 172.0 !O! hub: 175,0 m (TOT: 261,0 m) (31)	0:00
E-VE24	VESTAS V172-7.2 7200 172.0 !O! hub: 175,0 m (TOT: 261,0 m) (32)	0:00
E-VE25	VESTAS V172-7.2 7200 172.0 !O! hub: 175,0 m (TOT: 261,0 m) (33)	0:00
E-VE26	VESTAS V172-7.2 7200 172.0 !O! hub: 175,0 m (TOT: 261,0 m) (34)	29:01
E-VE27	VESTAS V172-7.2 7200 172.0 !O! hub: 175,0 m (TOT: 261,0 m) (35)	14:09
N-VE01	VESTAS V172-7.2 7200 172.0 !O! hub: 175,0 m (TOT: 261,0 m) (1)	0:00
N-VE02	VESTAS V172-7.2 7200 172.0 !O! hub: 175,0 m (TOT: 261,0 m) (2)	26:31
N-VE03	VESTAS V172-7.2 7200 172.0 !O! hub: 175,0 m (TOT: 261,0 m) (3)	0:00
N-VE04	VESTAS V172-7.2 7200 172.0 !O! hub: 175,0 m (TOT: 261,0 m) (4)	14:19
N-VE05	VESTAS V172-7.2 7200 172.0 !O! hub: 175,0 m (TOT: 261,0 m) (5)	21:53
N-VE06	VESTAS V172-7.2 7200 172.0 !O! hub: 175,0 m (TOT: 261,0 m) (6)	13:00
N-VE07	VESTAS V172-7.2 7200 172.0 !O! hub: 175,0 m (TOT: 261,0 m) (7)	57:31
N-VE08	VESTAS V172-7.2 7200 172.0 !O! hub: 175,0 m (TOT: 261,0 m) (8)	36:52

Total times in Receptor wise and WTG wise tables can differ, as a WTG can lead to flicker at 2 or more receptors simultaneously and/or receptors may receive flicker from 2 or more WTGs simultaneously.

The calculation of the total expected values for a given receptor assumes a weighted average directional reduction for all WTGs contributing to shadow flicker within the same day. In the case where shadow flicker from different WTGs is not concurrent within the day, the total expected time at a given receptor may deviate marginally from the individual flicker time caused by each turbine separately.

Project:

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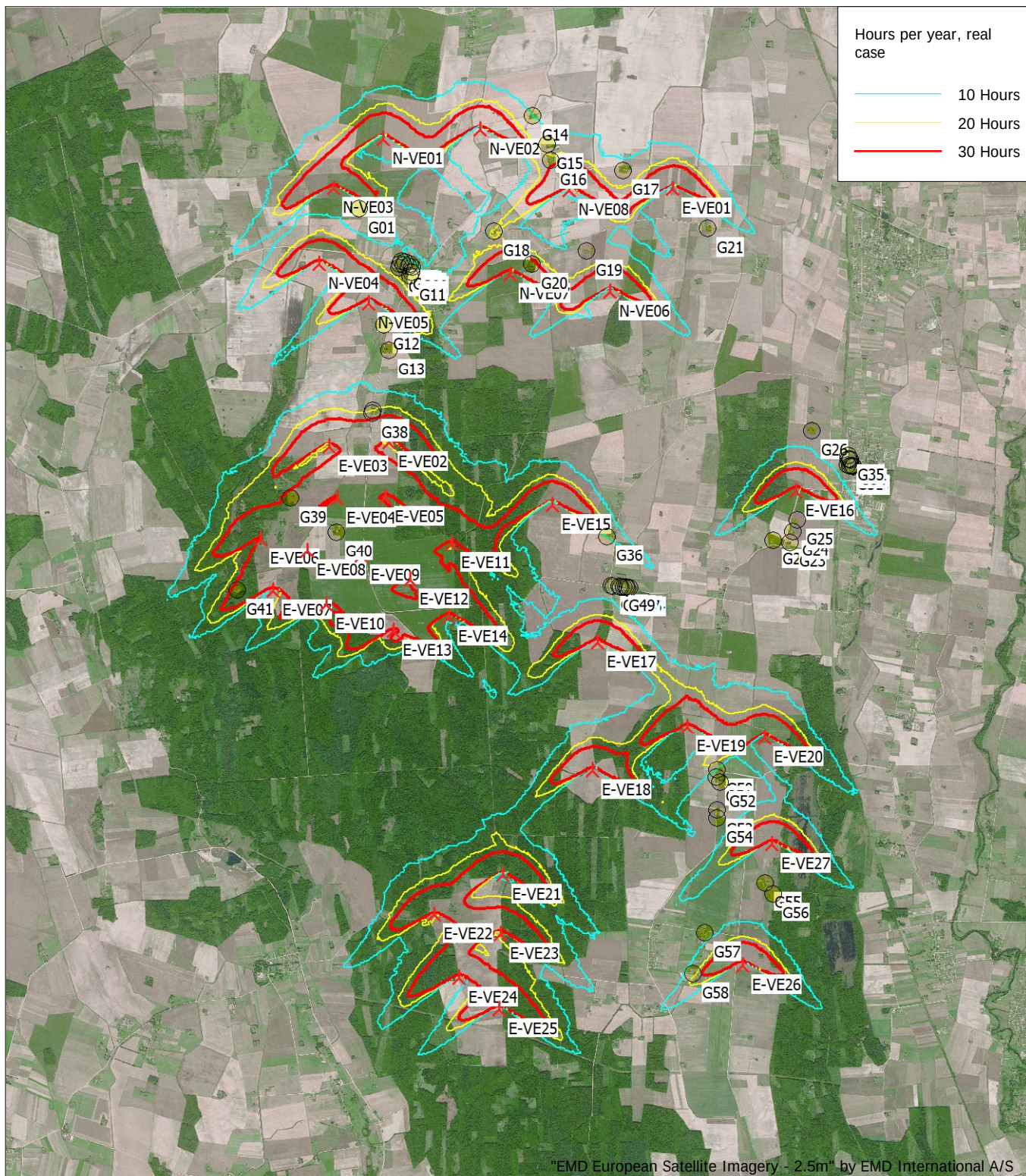
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Calculated:

2024-11-18 12:52/4.1.254

SHADOW - Map

Calculation: SHADOW



Map: windPRO European Satellite Imagery - 2.5m , Print scale 1:90 000, Map center Lithuanian TM LKS94-LKS94 (LT) East: 509 712 North: 6 194 753

▲ New WTG

● Shadow receptor

Flicker map level: Project Wizard Elevation Data Grid (SRTM: Shuttle DTM 1 arc-second)

Time step: 4 minutes, Day step: 14 days, Map resolution: 30 m, Visibility resolution: 15 m, Eye height: 1,5 m

**PŪV šēšēliavimo mažinimas
(shadow shut-down)
"2" alternatyva**

Project:

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Calculated:

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SHADOW - Main Result

Calculation: SHADOW

Assumptions for shadow calculations

Maximum distance for influence

Calculate only when more than 20 % of sun is covered by the blade

Please look in WTG table

Minimum sun height over horizon for influence

3 °

Day step for calculation

1 days

Time step for calculation

1 minutes

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1,41	2,36	4,03	5,55	8,35	8,36	8,16	7,72	5,06	3,23	1,33	0,98

Operational hours are calculated from WTGs in calculation and wind distribution:

Site data: ATLAS; 12 sectors; Radius: 43 000 m (3)

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
949	502	233	287	574	628	760	1 008	1 178	998	753	542	8 411

Monthly aggregation of real case reduction

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

Flicker curtailment by stopping specific turbines

A ZVI (Zones of Visual Influence) calculation is performed before flicker calculation so non visible WTG do not contribute to calculated flicker values. A WTG will be visible if it is visible from any part of the receiver window. The ZVI calculation is based on the following assumptions:

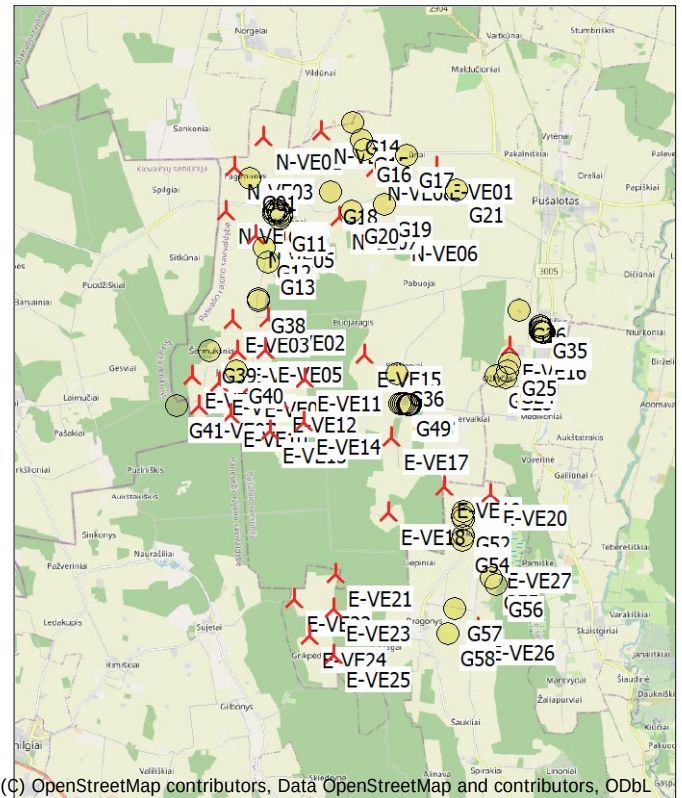
DHM: Project Wizard Elevation Data Grid (SRTM: Shuttle DTM 1 arc-second)

Receptor grid resolution: 1,0 m

Topographic shadow included in calculation

All coordinates are in

Lithuanian TM LKS94-LKS94 (LT)



(C) OpenStreetMap contributors, Data OpenStreetMap and contributors, ODbL

Scale 1:200 000

New WTG

Shadow receptor

WTGs

	Y	X	Z	Row data/Description	WTG type				Rotor diameter [m]	Hub height [m]	Shadow data	
					Valid	Manufact.	Type-generator	Power, rated [kW]			Calculation distance [m]	RPM [RPM]
E-VE01	511 774	6 200 739	47,5	VESTAS V172-7.2 7200 172.0 !... Yes	VESTAS	V172-7.2-7 200	7 200	172,0	175,0	1 903	-	
E-VE02	507 315	6 196 732	53,0	VESTAS V172-7.2 7200 172.0 !... Yes	VESTAS	V172-7.2-7 200	7 200	172,0	175,0	1 903	-	
E-VE03	506 375	6 196 675	54,7	VESTAS V172-7.2 7200 172.0 !... Yes	VESTAS	V172-7.2-7 200	7 200	172,0	175,0	1 903	-	
E-VE04	506 501	6 195 859	52,0	VESTAS V172-7.2 7200 172.0 !... Yes	VESTAS	V172-7.2-7 200	7 200	172,0	175,0	1 903	-	
E-VE05	507 253	6 195 881	52,2	VESTAS V172-7.2 7200 172.0 !... Yes	VESTAS	V172-7.2-7 200	7 200	172,0	175,0	1 903	-	
E-VE06	505 294	6 195 211	55,3	VESTAS V172-7.2 7200 172.0 !... Yes	VESTAS	V172-7.2-7 200	7 200	172,0	175,0	1 903	-	
E-VE07	505 491	6 194 401	54,0	VESTAS V172-7.2 7200 172.0 !... Yes	VESTAS	V172-7.2-7 200	7 200	172,0	175,0	1 903	-	
E-VE08	506 035	6 195 026	53,7	VESTAS V172-7.2 7200 172.0 !... Yes	VESTAS	V172-7.2-7 200	7 200	172,0	175,0	1 903	-	
E-VE09	506 884	6 194 962	53,3	VESTAS V172-7.2 7200 172.0 !... Yes	VESTAS	V172-7.2-7 200	7 200	172,0	175,0	1 903	-	
E-VE10	506 331	6 194 190	54,0	VESTAS V172-7.2 7200 172.0 !... Yes	VESTAS	V172-7.2-7 200	7 200	172,0	175,0	1 903	-	
E-VE11	508 295	6 195 151	50,4	VESTAS V172-7.2 7200 172.0 !... Yes	VESTAS	V172-7.2-7 200	7 200	172,0	175,0	1 903	-	
E-VE12	507 655	6 194 577	52,3	VESTAS V172-7.2 7200 172.0 !... Yes	VESTAS	V172-7.2-7 200	7 200	172,0	175,0	1 903	-	
E-VE13	507 391	6 193 769	53,5	VESTAS V172-7.2 7200 172.0 !... Yes	VESTAS	V172-7.2-7 200	7 200	172,0	175,0	1 903	-	
E-VE14	508 259	6 193 993	52,0	VESTAS V172-7.2 7200 172.0 !... Yes	VESTAS	V172-7.2-7 200	7 200	172,0	175,0	1 903	-	
E-VE15	509 883	6 195 766	50,4	VESTAS V172-7.2 7200 172.0 !... Yes	VESTAS	V172-7.2-7 200	7 200	172,0	175,0	1 903	-	
E-VE16	513 718	6 195 996	46,0	VESTAS V172-7.2 7200 172.0 !... Yes	VESTAS	V172-7.2-7 200	7 200	172,0	175,0	1 903	-	
E-VE17	510 597	6 193 591	53,2	VESTAS V172-7.2 7200 172.0 !... Yes	VESTAS	V172-7.2-7 200	7 200	172,0	175,0	1 903	-	
E-VE18	510 530	6 191 574	50,0	VESTAS V172-7.2 7200 172.0 !... Yes	VESTAS	V172-7.2-7 200	7 200	172,0	175,0	1 903	-	
E-VE19	512 020	6 192 269	46,3	VESTAS V172-7.2 7200 172.0 !... Yes	VESTAS	V172-7.2-7 200	7 200	172,0	175,0	1 903	-	
E-VE20	513 240	6 192 097	45,3	VESTAS V172-7.2 7200 172.0 !... Yes	VESTAS	V172-7.2-7 200	7 200	172,0	175,0	1 903	-	
E-VE21	509 118	6 189 929	53,2	VESTAS V172-7.2 7200 172.0 !... Yes	VESTAS	V172-7.2-7 200	7 200	172,0	175,0	1 903	-	
E-VE22	508 045	6 189 297	55,0	VESTAS V172-7.2 7200 172.0 !... Yes	VESTAS	V172-7.2-7 200	7 200	172,0	175,0	1 903	-	
E-VE23	509 083	6 189 002	52,3	VESTAS V172-7.2 7200 172.0 !... Yes	VESTAS	V172-7.2-7 200	7 200	172,0	175,0	1 903	-	
E-VE24	508 432	6 188 305	52,0	VESTAS V172-7.2 7200 172.0 !... Yes	VESTAS	V172-7.2-7 200	7 200	172,0	175,0	1 903	-	
E-VE25	509 068	6 187 814	51,8	VESTAS V172-7.2 7200 172.0 !... Yes	VESTAS	V172-7.2-7 200	7 200	172,0	175,0	1 903	-	
E-VE26	512 902	6 188 519	46,5	VESTAS V172-7.2 7200 172.0 !... Yes	VESTAS	V172-7.2-7 200	7 200	172,0	175,0	1 903	-	
E-VE27	513 359	6 190 431	47,0	VESTAS V172-7.2 7200 172.0 !... Yes	VESTAS	V172-7.2-7 200	7 200	172,0	175,0	1 903	-	

To be continued on next page...

Project:

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Calculated:

2024-11-18 16:22/4.1.254

SHADOW - Main Result

Calculation: SHADOW

...continued from previous page

	Y	X	Z	Row data/Description	WTG type			Power, rated [kW]	Rotor diameter [m]	Hub height [m]	Shadow data	
					Valid	Manufact.	Type-generator				Calculation distance [m]	RPM
			[m]									[RPM]
N-VE01	507 209	6 201 524	51,0	VESTAS V172-7.2 7200 172.0 !... Yes	Yes	VESTAS	V172-7.2-7 200	7 200	172,0	175,0	1 903	-
N-VE02	508 734	6 201 665	47,0	VESTAS V172-7.2 7200 172.0 !... Yes	Yes	VESTAS	V172-7.2-7 200	7 200	172,0	175,0	1 903	-
N-VE03	506 435	6 200 737	50,4	VESTAS V172-7.2 7200 172.0 !... Yes	Yes	VESTAS	V172-7.2-7 200	7 200	172,0	175,0	1 903	-
N-VE04	506 209	6 199 545	52,6	VESTAS V172-7.2 7200 172.0 !... Yes	Yes	VESTAS	V172-7.2-7 200	7 200	172,0	175,0	1 903	-
N-VE05	506 994	6 198 936	50,6	VESTAS V172-7.2 7200 172.0 !... Yes	Yes	VESTAS	V172-7.2-7 200	7 200	172,0	175,0	1 903	-
N-VE06	510 789	6 199 120	51,0	VESTAS V172-7.2 7200 172.0 !... Yes	Yes	VESTAS	V172-7.2-7 200	7 200	172,0	175,0	1 903	-
N-VE07	509 212	6 199 396	48,3	VESTAS V172-7.2 7200 172.0 !... Yes	Yes	VESTAS	V172-7.2-7 200	7 200	172,0	175,0	1 903	-
N-VE08	510 142	6 200 713	47,9	VESTAS V172-7.2 7200 172.0 !... Yes	Yes	VESTAS	V172-7.2-7 200	7 200	172,0	175,0	1 903	-

Shadow receptor-Input

No.	Y	X	Z	Width	Height	Elevation a.g.l.	Slope of window	Direction mode	Eye height (ZVI) a.g.l.
			[m]	[m]	[m]	[m]	[°]		[m]
G01	506 843	6 200 422	54,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G02	507 506	6 199 600	51,9	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G03	507 490	6 199 545	52,7	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G04	507 464	6 199 492	53,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G05	507 561	6 199 583	52,4	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G06	507 632	6 199 555	53,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G07	507 619	6 199 509	53,5	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G08	507 537	6 199 529	52,3	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G09	507 682	6 199 497	53,8	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G10	507 669	6 199 423	53,1	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G11	507 642	6 199 366	54,3	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G12	507 228	6 198 595	55,8	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G13	507 313	6 198 194	54,4	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G14	509 558	6 201 886	47,1	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G15	509 794	6 201 446	49,3	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G16	509 856	6 201 185	51,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G17	510 988	6 201 034	51,6	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G18	508 962	6 200 071	50,7	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G19	510 413	6 199 759	48,9	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G20	509 553	6 199 558	53,4	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G21	512 320	6 200 121	50,9	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G22	513 368	6 195 217	46,4	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G23	513 633	6 195 185	45,8	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G24	513 680	6 195 355	46,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G25	513 740	6 195 540	45,6	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G26	513 978	6 196 950	47,1	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G27	514 634	6 196 384	46,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G28	514 618	6 196 386	45,9	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G29	514 593	6 196 389	45,7	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G30	514 567	6 196 392	44,3	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G31	514 535	6 196 397	43,3	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G32	514 544	6 196 497	44,3	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G33	514 564	6 196 494	45,2	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G34	514 587	6 196 492	45,9	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G35	514 541	6 196 549	43,6	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G36	510 744	6 195 273	52,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G37	507 058	6 197 245	55,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G38	507 055	6 197 200	55,4	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G39	505 767	6 195 866	56,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G40	506 485	6 195 329	55,6	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G41	504 924	6 194 409	55,7	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G42	510 825	6 194 492	51,1	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G43	510 860	6 194 485	51,5	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G44	511 099	6 194 463	50,7	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G45	511 072	6 194 465	51,4	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G46	511 051	6 194 468	52,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G47	511 018	6 194 470	52,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G48	510 973	6 194 477	51,6	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G49	510 940	6 194 480	51,1	1,0	1,0	1,0	90,0	"Green house mode"	2,0

To be continued on next page...

Project:

UAB Eurostat 1 planuojamos ukines veiklos – vejo elektriniu irengimas Pasvalio r. sav., Pusaloto sen., Pagirnapiu k., Jaciunu k., Matkunu k., Deglenu k., Daukuciu vs., Jakuboniu k., Sermuksniu k., Mickaiciu k., Budininku k., Kidzioniu k., Ozkyciu k. ir Panevezio r. sav., Panevezio sen., Pazuku k., Eimuliskio k., Grikpedziu k., Staciunu k.

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Calculated:

2024-11-18 16:22/4.1.254

SHADOW - Main Result

Calculation: SHADOW

...continued from previous page

No.	Y	X	Z	Width	Height	Elevation a.g.l.	Slope of window	Direction mode	Eye height (ZVI) a.g.l.
			[m]	[m]	[m]	[m]	[°]		[m]
G50	512 500	6 191 593	49,9	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G51	512 482	6 191 483	48,8	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G52	512 537	6 191 402	49,6	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G53	512 499	6 190 966	48,8	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G54	512 499	6 190 841	50,4	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G55	513 257	6 189 826	47,4	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G56	513 387	6 189 656	46,7	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G57	512 309	6 189 025	50,4	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G58	512 133	6 188 384	48,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0

Calculation Results

Shadow receptor

Shadow, expected values

No.	Shadow hours per year [h/year]	Avoided hours per year [h/year]
G01	4:23	
G02	12:01	
G03	13:05	
G04	14:37	
G05	11:26	
G06	11:04	
G07	11:59	
G08	12:35	
G09	11:29	
G10	12:47	
G11	14:05	
G12	0:00	
G13	1:55	
G14	10:33	
G15	15:53	
G16	25:49	
G17	13:40	
G18	20:57	
G19	17:09	
G20*	2:59	38:21
G21	1:26	
G22	0:00	
G23	0:00	
G24	0:00	
G25	0:00	
G26	4:42	
G27	5:07	
G28	5:15	
G29	5:29	
G30	5:44	
G31	6:03	
G32	5:13	
G33	5:01	
G34	4:52	
G35	5:00	
G36	11:22	
G37	21:07	
G38	23:57	
G39*	29:45	7:07
G40*	29:42	18:56
G41*	29:14	11:24
G42	5:29	
G43	5:39	
G44	5:48	
G45	5:54	
G46	5:56	
G47	5:59	

To be continued on next page...

SHADOW - Main Result

Calculation: SHADOW

...continued from previous page

Shadow, expected values

No.	Shadow hours per year [h/year]	Avoided hours per year [h/year]
G48	5:55	
G49	5:53	
G50	8:02	
G51	2:42	
G52	2:57	
G53	4:43	
G54	5:32	
G55	1:11	
G56	3:14	
G57	7:31	
G58	17:04	

* Receptors where shadow flicker is reduced by curtailment

Total amount of flickering on the shadow receptors caused by each WTG

No.	Name	Stopped due to flicker curtailment [h/year]	Expected [h/year]
E-VE01	VESTAS V172-7.2 7200 172.0 !O! hub: 175,0 m (TOT: 261,0 m) (9)		12:43
E-VE02	VESTAS V172-7.2 7200 172.0 !O! hub: 175,0 m (TOT: 261,0 m) (10)		23:23
E-VE03	VESTAS V172-7.2 7200 172.0 !O! hub: 175,0 m (TOT: 261,0 m) (11)		9:42
E-VE04	VESTAS V172-7.2 7200 172.0 !O! hub: 175,0 m (TOT: 261,0 m) (12)		15:20
E-VE05	VESTAS V172-7.2 7200 172.0 !O! hub: 175,0 m (TOT: 261,0 m) (13)		5:55
E-VE06	VESTAS V172-7.2 7200 172.0 !O! hub: 175,0 m (TOT: 261,0 m) (14)	53:57	4:04
E-VE07	VESTAS V172-7.2 7200 172.0 !O! hub: 175,0 m (TOT: 261,0 m) (15)	19:12	26:31
E-VE08	VESTAS V172-7.2 7200 172.0 !O! hub: 175,0 m (TOT: 261,0 m) (16)	118:08	6:17
E-VE09	VESTAS V172-7.2 7200 172.0 !O! hub: 175,0 m (TOT: 261,0 m) (17)		17:18
E-VE10	VESTAS V172-7.2 7200 172.0 !O! hub: 175,0 m (TOT: 261,0 m) (18)		4:52
E-VE11	VESTAS V172-7.2 7200 172.0 !O! hub: 175,0 m (TOT: 261,0 m) (19)		1:39
E-VE12	VESTAS V172-7.2 7200 172.0 !O! hub: 175,0 m (TOT: 261,0 m) (20)		2:30
E-VE13	VESTAS V172-7.2 7200 172.0 !O! hub: 175,0 m (TOT: 261,0 m) (21)		1:30
E-VE14	VESTAS V172-7.2 7200 172.0 !O! hub: 175,0 m (TOT: 261,0 m) (22)		0:00
E-VE15	VESTAS V172-7.2 7200 172.0 !O! hub: 175,0 m (TOT: 261,0 m) (23)		11:22
E-VE16	VESTAS V172-7.2 7200 172.0 !O! hub: 175,0 m (TOT: 261,0 m) (24)		17:26
E-VE17	VESTAS V172-7.2 7200 172.0 !O! hub: 175,0 m (TOT: 261,0 m) (25)		15:47
E-VE18	VESTAS V172-7.2 7200 172.0 !O! hub: 175,0 m (TOT: 261,0 m) (26)		0:00
E-VE19	VESTAS V172-7.2 7200 172.0 !O! hub: 175,0 m (TOT: 261,0 m) (27)		0:00
E-VE20	VESTAS V172-7.2 7200 172.0 !O! hub: 175,0 m (TOT: 261,0 m) (28)		4:51
E-VE21	VESTAS V172-7.2 7200 172.0 !O! hub: 175,0 m (TOT: 261,0 m) (29)		0:00
E-VE22	VESTAS V172-7.2 7200 172.0 !O! hub: 175,0 m (TOT: 261,0 m) (30)		0:00
E-VE23	VESTAS V172-7.2 7200 172.0 !O! hub: 175,0 m (TOT: 261,0 m) (31)		0:00
E-VE24	VESTAS V172-7.2 7200 172.0 !O! hub: 175,0 m (TOT: 261,0 m) (32)		0:00
E-VE25	VESTAS V172-7.2 7200 172.0 !O! hub: 175,0 m (TOT: 261,0 m) (33)		0:00
E-VE26	VESTAS V172-7.2 7200 172.0 !O! hub: 175,0 m (TOT: 261,0 m) (34)		29:01
E-VE27	VESTAS V172-7.2 7200 172.0 !O! hub: 175,0 m (TOT: 261,0 m) (35)		14:09
N-VE01	VESTAS V172-7.2 7200 172.0 !O! hub: 175,0 m (TOT: 261,0 m) (1)		0:00
N-VE02	VESTAS V172-7.2 7200 172.0 !O! hub: 175,0 m (TOT: 261,0 m) (2)		26:31
N-VE03	VESTAS V172-7.2 7200 172.0 !O! hub: 175,0 m (TOT: 261,0 m) (3)		0:00
N-VE04	VESTAS V172-7.2 7200 172.0 !O! hub: 175,0 m (TOT: 261,0 m) (4)		14:19
N-VE05	VESTAS V172-7.2 7200 172.0 !O! hub: 175,0 m (TOT: 261,0 m) (5)		21:53
N-VE06	VESTAS V172-7.2 7200 172.0 !O! hub: 175,0 m (TOT: 261,0 m) (6)		13:00
N-VE07	VESTAS V172-7.2 7200 172.0 !O! hub: 175,0 m (TOT: 261,0 m) (7)	155:45	19:10
N-VE08	VESTAS V172-7.2 7200 172.0 !O! hub: 175,0 m (TOT: 261,0 m) (8)		36:52

Total times in Receptor wise and WTG wise tables can differ, as a WTG can lead to flicker at 2 or more receptors simultaneously and/or receptors may receive flicker from 2 or more WTGs simultaneously.

The calculation of the total expected values for a given receptor assumes a weighted average directional reduction for all WTGs contributing to shadow flicker within the same day. In the case where shadow flicker from different WTGs is not concurrent within the day, the total expected time at a given receptor may deviate marginally from the individual flicker time caused by each turbine separately.

**Prognozuojamas PŪV šešėliavimo
vertinimas "3" alternatyva**

Project:

UAB Eurostat 1 planuojamos ukines veiklos – vejo elektriniu irengimas Pasvalio r. sav., Pusaloto sen., Pagirnupiu k., Jaciunu k., Matkunu k., Deglenu k., Daukuciu vs., Jakuboniu k., Sermuksniu k., Mickaiciu k., Budininku k., Kidzioniu k., Ozkyciu k. ir Panevezio r. sav., Panevezio sen., Pazuku k., Eimuliskio k., Grippedziu k., Staciunu k.

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Calculated:

2024-11-18 14:32/4.1.254

SHADOW - Main Result

Calculation: SHADOW

Assumptions for shadow calculations

Maximum distance for influence

Calculate only when more than 20 % of sun is covered by the blade

Please look in WTG table

Minimum sun height over horizon for influence

3 °

Day step for calculation

1 days

Time step for calculation

1 minutes

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1,41	2,36	4,03	5,55	8,35	8,36	8,16	7,72	5,06	3,23	1,33	0,98

Operational hours are calculated from WTGs in calculation and wind distribution:

Site data: ATLAS; 12 sectors; Radius: 43 000 m (3)

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
948	502	233	287	573	628	759	1 006	1 177	996	752	541	8 402

Monthly aggregation of real case reduction

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

A ZVI (Zones of Visual Influence) calculation is performed before flicker

calculation so non visible WTG do not contribute to calculated flicker

values. A WTG will be visible if it is visible from any part of the receiver

window. The ZVI calculation is based on the following assumptions:

DHM: Project Wizard Elevation Data Grid (SRTM: Shuttle DTM 1 arc-second)

Receptor grid resolution: 1,0 m

Topographic shadow included in calculation

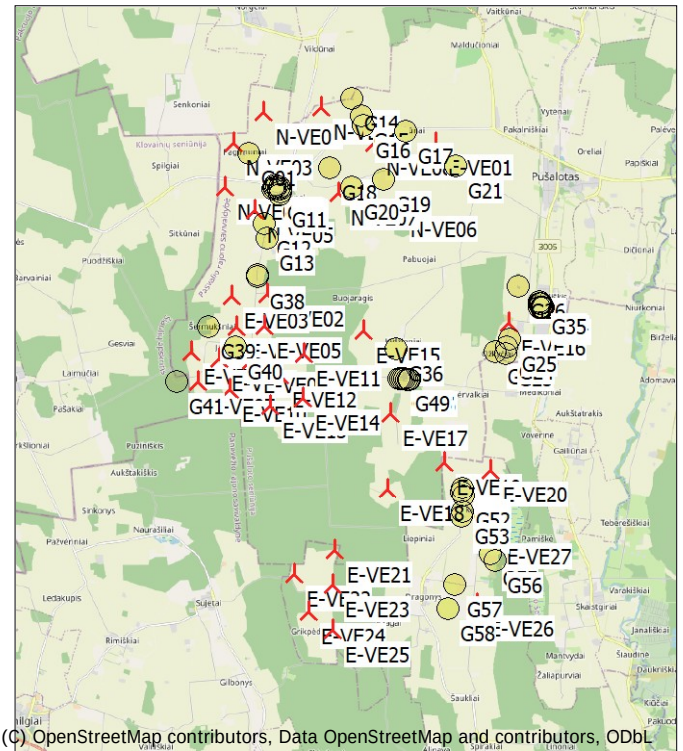
All coordinates are in

Lithuanian TM LKS94-LKS94 (LT)

WTGs

	Y	X	Z	Row data/Description	WTG type		Type-generator	Power, rated [kW]	Rotor diameter [m]	Hub height [m]	Shadow data	
					Valid	Manufact.					Calculation distance [m]	RPM [RPM]
			[m]									
E-VE01	511 774	6 200 739	47,5	Siemens Gamesa SG ...	Yes	Siemens Gamesa	SG 6.6-170-6 600	6 600	170,0	165,0	2 037	8,8
E-VE02	507 315	6 196 732	53,0	Siemens Gamesa SG ...	Yes	Siemens Gamesa	SG 6.6-170-6 600	6 600	170,0	165,0	2 037	8,8
E-VE03	506 375	6 196 675	54,7	Siemens Gamesa SG ...	Yes	Siemens Gamesa	SG 6.6-170-6 600	6 600	170,0	165,0	2 037	8,8
E-VE04	506 501	6 195 859	52,0	Siemens Gamesa SG ...	Yes	Siemens Gamesa	SG 6.6-170-6 600	6 600	170,0	165,0	2 037	8,8
E-VE05	507 253	6 195 881	52,2	Siemens Gamesa SG ...	Yes	Siemens Gamesa	SG 6.6-170-6 600	6 600	170,0	165,0	2 037	8,8
E-VE06	505 294	6 195 211	55,3	Siemens Gamesa SG ...	Yes	Siemens Gamesa	SG 6.6-170-6 600	6 600	170,0	165,0	2 037	8,8
E-VE07	505 491	6 194 401	54,0	Siemens Gamesa SG ...	Yes	Siemens Gamesa	SG 6.6-170-6 600	6 600	170,0	165,0	2 037	8,8
E-VE08	506 035	6 195 026	53,7	Siemens Gamesa SG ...	Yes	Siemens Gamesa	SG 6.6-170-6 600	6 600	170,0	165,0	2 037	8,8
E-VE09	506 884	6 194 962	53,3	Siemens Gamesa SG ...	Yes	Siemens Gamesa	SG 6.6-170-6 600	6 600	170,0	165,0	2 037	8,8
E-VE10	506 331	6 194 190	54,0	Siemens Gamesa SG ...	Yes	Siemens Gamesa	SG 6.6-170-6 600	6 600	170,0	165,0	2 037	8,8
E-VE11	508 295	6 195 151	50,4	Siemens Gamesa SG ...	Yes	Siemens Gamesa	SG 6.6-170-6 600	6 600	170,0	165,0	2 037	8,8
E-VE12	507 655	6 194 577	52,3	Siemens Gamesa SG ...	Yes	Siemens Gamesa	SG 6.6-170-6 600	6 600	170,0	165,0	2 037	8,8
E-VE13	507 391	6 193 769	53,5	Siemens Gamesa SG ...	Yes	Siemens Gamesa	SG 6.6-170-6 600	6 600	170,0	165,0	2 037	8,8
E-VE14	508 259	6 193 993	52,0	Siemens Gamesa SG ...	Yes	Siemens Gamesa	SG 6.6-170-6 600	6 600	170,0	165,0	2 037	8,8
E-VE15	509 883	6 195 766	50,4	Siemens Gamesa SG ...	Yes	Siemens Gamesa	SG 6.6-170-6 600	6 600	170,0	165,0	2 037	8,8
E-VE16	513 718	6 195 996	46,0	Siemens Gamesa SG ...	Yes	Siemens Gamesa	SG 6.6-170-6 600	6 600	170,0	165,0	2 037	8,8
E-VE17	510 597	6 193 591	53,2	Siemens Gamesa SG ...	Yes	Siemens Gamesa	SG 6.6-170-6 600	6 600	170,0	165,0	2 037	8,8
E-VE18	510 530	6 191 574	50,0	Siemens Gamesa SG ...	Yes	Siemens Gamesa	SG 6.6-170-6 600	6 600	170,0	165,0	2 037	8,8
E-VE19	512 020	6 192 269	46,3	Siemens Gamesa SG ...	Yes	Siemens Gamesa	SG 6.6-170-6 600	6 600	170,0	165,0	2 037	8,8
E-VE20	513 240	6 192 097	45,3	Siemens Gamesa SG ...	Yes	Siemens Gamesa	SG 6.6-170-6 600	6 600	170,0	165,0	2 037	8,8
E-VE21	509 118	6 189 929	53,2	Siemens Gamesa SG ...	Yes	Siemens Gamesa	SG 6.6-170-6 600	6 600	170,0	165,0	2 037	8,8
E-VE22	508 045	6 189 297	55,0	Siemens Gamesa SG ...	Yes	Siemens Gamesa	SG 6.6-170-6 600	6 600	170,0	165,0	2 037	8,8
E-VE23	509 083	6 189 002	52,3	Siemens Gamesa SG ...	Yes	Siemens Gamesa	SG 6.6-170-6 600	6 600	170,0	165,0	2 037	8,8
E-VE24	508 432	6 188 305	52,0	Siemens Gamesa SG ...	Yes	Siemens Gamesa	SG 6.6-170-6 600	6 600	170,0	165,0	2 037	8,8
E-VE25	509 068	6 187 814	51,8	Siemens Gamesa SG ...	Yes	Siemens Gamesa	SG 6.6-170-6 600	6 600	170,0	165,0	2 037	8,8
E-VE26	512 902	6 188 519	46,5	Siemens Gamesa SG ...	Yes	Siemens Gamesa	SG 6.6-170-6 600	6 600	170,0	165,0	2 037	8,8
E-VE27	513 359	6 190 431	47,0	Siemens Gamesa SG ...	Yes	Siemens Gamesa	SG 6.6-170-6 600	6 600	170,0	165,0	2 037	8,8
N-VE01	507 209	6 201 524	51,0	Siemens Gamesa SG ...	Yes	Siemens Gamesa	SG 6.6-170-6 600	6 600	170,0	165,0	2 037	8,8
N-VE02	508 734	6 201 665	47,0	Siemens Gamesa SG ...	Yes	Siemens Gamesa	SG 6.6-170-6 600	6 600	170,0	165,0	2 037	8,8

To be continued on next page...



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Scale 1:200 000

New WTG

Shadow receptor

UAB Eurostat 1 planuojamos ukinės veiklos – vejo elektriniu irengimas Pasvalio r. sav., Pusaloto sen., Pagirnupių k., Jaciunų k., Matkunų k., Deglenu k., Daukuciu vs., Jakubonių k., Sermuksnių k., Mickaicių k., Budininkų k., Kidzionių k., Ozkyciu k. ir Panevezio r. sav., Panevezio sen., Pazukų k., Eimuliskio k., Grippedzių k., Staciunų k.

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2024-11-18 14:32/4.1.254

SHADOW - Main Result

Calculation: SHADOW

...continued from previous page

	Y	X	Z	Row data/Description	WTG type		Type-generator	Power, rated [kW]	Rotor diameter [m]	Hub height [m]	Shadow data	
					Valid	Manufact.					Calculation distance [m]	RPM
			[m]									[RPM]
N-VE03	506 435	6 200 737	50,4	Siemens Gamesa SG ...	Yes	Siemens Gamesa	SG 6.6-170-6 600	6 600	170,0	165,0	2 037	8,8
N-VE04	506 209	6 199 545	52,6	Siemens Gamesa SG ...	Yes	Siemens Gamesa	SG 6.6-170-6 600	6 600	170,0	165,0	2 037	8,8
N-VE05	506 994	6 198 936	50,6	Siemens Gamesa SG ...	Yes	Siemens Gamesa	SG 6.6-170-6 600	6 600	170,0	165,0	2 037	8,8
N-VE06	510 789	6 199 120	51,0	Siemens Gamesa SG ...	Yes	Siemens Gamesa	SG 6.6-170-6 600	6 600	170,0	165,0	2 037	8,8
N-VE07	509 212	6 199 396	48,3	Siemens Gamesa SG ...	Yes	Siemens Gamesa	SG 6.6-170-6 600	6 600	170,0	165,0	2 037	8,8
N-VE08	510 142	6 200 713	47,9	Siemens Gamesa SG ...	Yes	Siemens Gamesa	SG 6.6-170-6 600	6 600	170,0	165,0	2 037	8,8

Shadow receptor-Input

No.	Y	X	Z	Width	Height	Elevation a.g.l.	Slope of window	Direction mode	Eye height (ZVI) a.g.l.
			[m]	[m]	[m]	[m]	[°]		[m]
G01	506 843	6 200 422	54,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G02	507 506	6 199 600	51,9	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G03	507 490	6 199 545	52,7	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G04	507 464	6 199 492	53,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G05	507 561	6 199 583	52,4	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G06	507 632	6 199 555	53,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G07	507 619	6 199 509	53,5	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G08	507 537	6 199 529	52,3	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G09	507 682	6 199 497	53,8	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G10	507 669	6 199 423	53,1	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G11	507 642	6 199 366	54,3	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G12	507 228	6 198 595	55,8	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G13	507 313	6 198 194	54,4	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G14	509 558	6 201 886	47,1	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G15	509 794	6 201 446	49,3	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G16	509 856	6 201 185	51,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G17	510 988	6 201 034	51,6	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G18	508 962	6 200 071	50,7	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G19	510 413	6 199 759	48,9	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G20	509 553	6 199 558	53,4	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G21	512 320	6 200 121	50,9	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G22	513 368	6 195 217	46,4	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G23	513 633	6 195 185	45,8	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G24	513 680	6 195 355	46,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G25	513 740	6 195 540	45,6	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G26	513 978	6 196 950	47,1	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G27	514 634	6 196 384	46,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G28	514 618	6 196 386	45,9	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G29	514 593	6 196 389	45,7	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G30	514 567	6 196 392	44,3	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G31	514 535	6 196 397	43,3	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G32	514 544	6 196 497	44,3	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G33	514 564	6 196 494	45,2	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G34	514 587	6 196 492	45,9	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G35	514 541	6 196 549	43,6	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G36	510 744	6 195 273	52,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G37	507 058	6 197 245	55,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G38	507 055	6 197 200	55,4	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G39	505 767	6 195 866	56,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G40	506 485	6 195 329	55,6	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G41	504 924	6 194 409	55,7	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G42	510 825	6 194 492	51,1	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G43	510 860	6 194 485	51,5	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G44	511 099	6 194 463	50,7	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G45	511 072	6 194 465	51,4	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G46	511 051	6 194 468	52,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G47	511 018	6 194 470	52,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G48	510 973	6 194 477	51,6	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G49	510 940	6 194 480	51,1	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G50	512 500	6 191 593	49,9	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G51	512 482	6 191 483	48,8	1,0	1,0	1,0	90,0	"Green house mode"	2,0

To be continued on next page...

Project:

UAB Eurostat 1 planuojamos ukinės veiklos – vejo elektriniu irengimas Pasvalio r. sav., Pusaloto sen., Pagirnapiu k., Jaciunu k., Matkunu k., Deglenu k., Daukuciu vs., Jakuboniu k., Sermuksniu k., Mickaiciu k., Budininku k., Kidzioniu k., Ozkyciu k. ir Panevezio r. sav., Panevezio sen., Pazuku k., Eimuliskio k., Grippedziu k., Staciunu k.

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Calculated:

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SHADOW - Main Result

Calculation: SHADOW

...continued from previous page

No.	Y	X	Z	Width	Height	Elevation a.g.l.	Slope of window	Direction mode	Eye height (ZVI) a.g.l.
			[m]	[m]	[m]	[m]	[°]		[m]
G52	512 537	6 191 402	49,6	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G53	512 499	6 190 966	48,8	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G54	512 499	6 190 841	50,4	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G55	513 257	6 189 826	47,4	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G56	513 387	6 189 656	46,7	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G57	512 309	6 189 025	50,4	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G58	512 133	6 188 384	48,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0

Calculation Results

Shadow receptor

Shadow, expected values

No. Shadow hours

per year

[h/year]

G01	4:41
G02	11:44
G03	12:44
G04	14:08
G05	11:07
G06	10:43
G07	11:32
G08	12:10
G09	11:05
G10	12:23
G11	13:40
G12	0:00
G13	1:45
G14	10:03
G15	15:16
G16	25:29
G17	13:20
G18	20:33
G19	17:35
G20	39:46
G21	1:21
G22	0:00
G23	0:00
G24	0:00
G25	0:00
G26	4:16
G27	4:58
G28	5:05
G29	5:19
G30	5:34
G31	5:53
G32	5:06
G33	4:55
G34	4:46
G35	4:51
G36	12:16
G37	20:38
G38	23:01
G39	34:46
G40	48:28
G41	40:52
G42	5:03
G43	5:16
G44	5:41
G45	5:44
G46	5:43
G47	5:43
G48	5:36
G49	5:32

To be continued on next page...

Project:

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Calculated:

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SHADOW - Main Result

Calculation: SHADOW

...continued from previous page

Shadow, expected values

No. Shadow hours

per year

[h/year]

G50	11:00
G51	4:13
G52	4:23
G53	4:37
G54	5:21
G55	0:47
G56	2:55
G57	7:19
G58	15:59

Total amount of flickering on the shadow receptors caused by each WTG

No.	Name	Expected [h/year]
E-VE01	Siemens Gamesa SG 6.6-170 6600 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (9)	13:54
E-VE02	Siemens Gamesa SG 6.6-170 6600 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (10)	22:49
E-VE03	Siemens Gamesa SG 6.6-170 6600 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (11)	9:20
E-VE04	Siemens Gamesa SG 6.6-170 6600 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (12)	14:24
E-VE05	Siemens Gamesa SG 6.6-170 6600 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (13)	6:58
E-VE06	Siemens Gamesa SG 6.6-170 6600 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (14)	11:04
E-VE07	Siemens Gamesa SG 6.6-170 6600 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (15)	27:17
E-VE08	Siemens Gamesa SG 6.6-170 6600 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (16)	33:34
E-VE09	Siemens Gamesa SG 6.6-170 6600 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (17)	18:30
E-VE10	Siemens Gamesa SG 6.6-170 6600 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (18)	4:20
E-VE11	Siemens Gamesa SG 6.6-170 6600 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (19)	1:31
E-VE12	Siemens Gamesa SG 6.6-170 6600 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (20)	2:26
E-VE13	Siemens Gamesa SG 6.6-170 6600 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (21)	1:19
E-VE14	Siemens Gamesa SG 6.6-170 6600 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (22)	0:00
E-VE15	Siemens Gamesa SG 6.6-170 6600 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (23)	12:16
E-VE16	Siemens Gamesa SG 6.6-170 6600 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (24)	16:42
E-VE17	Siemens Gamesa SG 6.6-170 6600 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (25)	15:00
E-VE18	Siemens Gamesa SG 6.6-170 6600 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (26)	3:08
E-VE19	Siemens Gamesa SG 6.6-170 6600 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (27)	0:00
E-VE20	Siemens Gamesa SG 6.6-170 6600 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (36)	6:29
E-VE21	Siemens Gamesa SG 6.6-170 6600 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (29)	0:00
E-VE22	Siemens Gamesa SG 6.6-170 6600 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (30)	0:00
E-VE23	Siemens Gamesa SG 6.6-170 6600 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (31)	0:00
E-VE24	Siemens Gamesa SG 6.6-170 6600 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (32)	0:00
E-VE25	Siemens Gamesa SG 6.6-170 6600 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (33)	0:00
E-VE26	Siemens Gamesa SG 6.6-170 6600 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (34)	27:03
E-VE27	Siemens Gamesa SG 6.6-170 6600 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (35)	13:59
N-VE01	Siemens Gamesa SG 6.6-170 6600 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (1)	0:00
N-VE02	Siemens Gamesa SG 6.6-170 6600 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (2)	24:33
N-VE03	Siemens Gamesa SG 6.6-170 6600 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (3)	0:00
N-VE04	Siemens Gamesa SG 6.6-170 6600 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (4)	14:19
N-VE05	Siemens Gamesa SG 6.6-170 6600 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (5)	21:31
N-VE06	Siemens Gamesa SG 6.6-170 6600 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (6)	13:06
N-VE07	Siemens Gamesa SG 6.6-170 6600 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (7)	55:10
N-VE08	Siemens Gamesa SG 6.6-170 6600 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (8)	36:06

Total times in Receptor wise and WTG wise tables can differ, as a WTG can lead to flicker at 2 or more receptors simultaneously and/or receptors may receive flicker from 2 or more WTGs simultaneously.

The calculation of the total expected values for a given receptor assumes a weighted average directional reduction for all WTGs contributing to shadow flicker within the same day. In the case where shadow flicker from different WTGs is not concurrent within the day, the total expected time at a given receptor may deviate marginally from the individual flicker time caused by each turbine separately.

Project:

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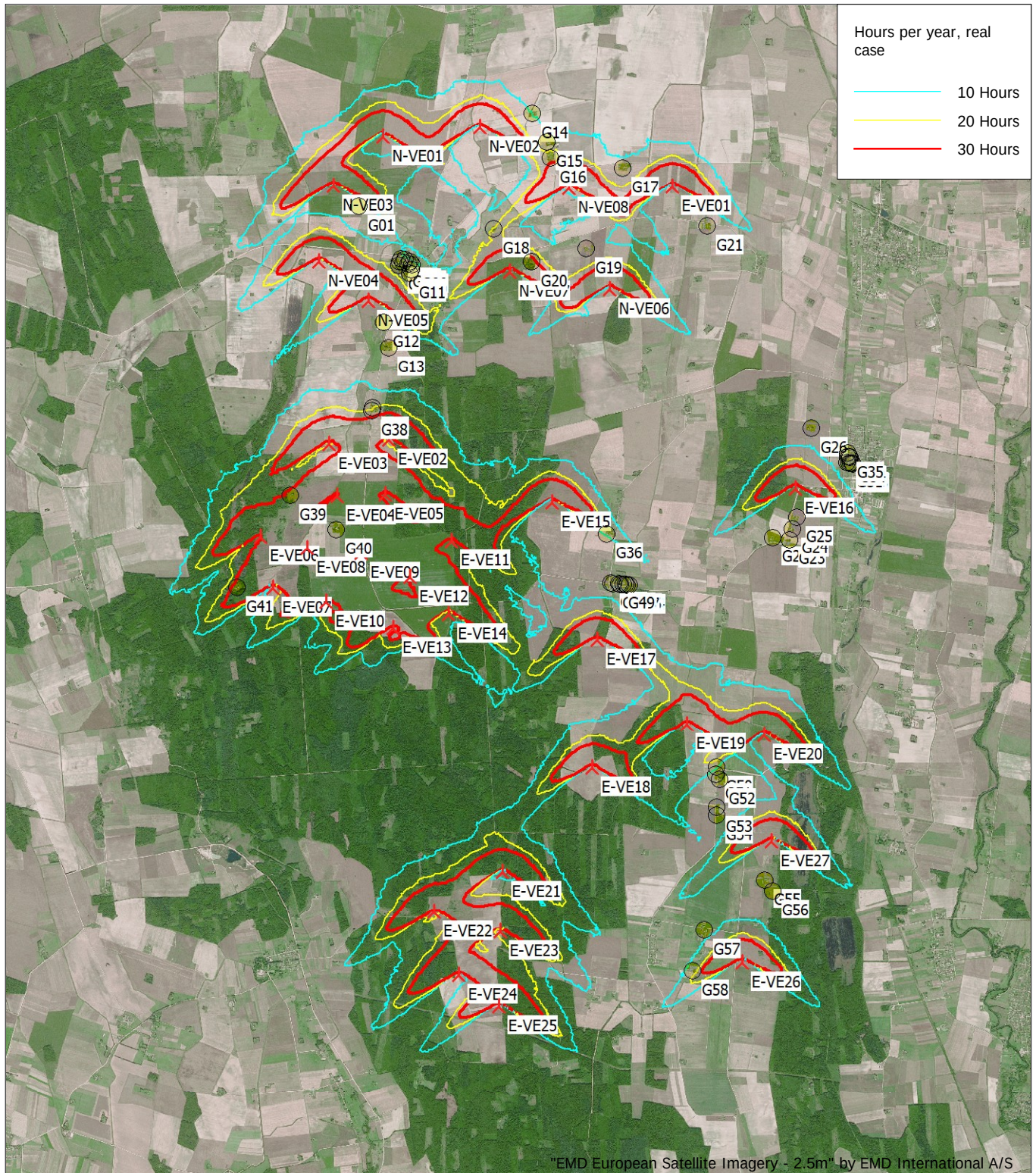
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Calculated:

2024-11-18 14:32/4.1.254

SHADOW - Map

Calculation: SHADOW



Map: windPRO European Satellite Imagery - 2.5m , Print scale 1:90 000, Map center Lithuanian TM LKS94-LKS94 (LT) East: 509 712 North: 6 194 753
New WTG Shadow receptor
Flicker map level: Project Wizard Elevation Data Grid (SRTM: Shuttle DTM 1 arc-second)
Time step: 4 minutes, Day step: 14 days, Map resolution: 30 m, Visibility resolution: 15 m, Eye height: 1,5 m

**PŪV šēšēliavimo mažinimas
(shadow shut-down)
"3" alternatyva**

Project:

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Calculated:

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SHADOW - Main Result

Calculation: SHADOW

Assumptions for shadow calculations

Maximum distance for influence

Calculate only when more than 20 % of sun is covered by the blade

Please look in WTG table

Minimum sun height over horizon for influence

3 °

Day step for calculation

1 days

Time step for calculation

1 minutes

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1,41	2,36	4,03	5,55	8,35	8,36	8,16	7,72	5,06	3,23	1,33	0,98

Operational hours are calculated from WTGs in calculation and wind distribution:

Site data: ATLAS; 12 sectors; Radius: 43 000 m (3)

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
948	502	233	287	573	628	759	1 006	1 177	996	752	541	8 402

Monthly aggregation of real case reduction

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

Flicker curtailment by stopping specific turbines

A ZVI (Zones of Visual Influence) calculation is performed before flicker calculation so non visible WTG do not contribute to calculated flicker values. A WTG will be visible if it is visible from any part of the receiver window. The ZVI calculation is based on the following assumptions:

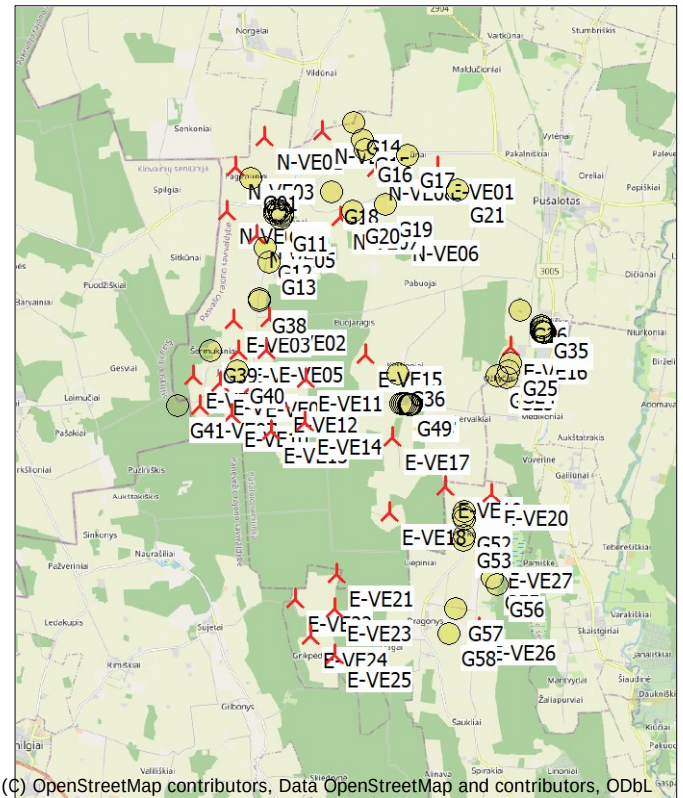
DHM: Project Wizard Elevation Data Grid (SRTM: Shuttle DTM 1 arc-second)

Receptor grid resolution: 1,0 m

Topographic shadow included in calculation

All coordinates are in

Lithuanian TM LKS94-LKS94 (LT)



(C) OpenStreetMap contributors, Data OpenStreetMap and contributors, ODbL

Scale 1:200 000

New WTG

Shadow receptor

WTGs

	Y	X	Z	Row data/Description	WTG type			Power, rated [kW]	Rotor diameter [m]	Hub height [m]	Shadow data	
					Valid	Manufact.	Type-generator				Calculation distance [m]	RPM
												[RPM]
E-VE01	511 774	6 200 739	47,5	Siemens Gamesa SG ...	Yes	Siemens Gamesa	SG 6.6-170-6 600	6 600	170,0	165,0	2 037	8,8
E-VE02	507 315	6 196 732	53,0	Siemens Gamesa SG ...	Yes	Siemens Gamesa	SG 6.6-170-6 600	6 600	170,0	165,0	2 037	8,8
E-VE03	506 375	6 196 675	54,7	Siemens Gamesa SG ...	Yes	Siemens Gamesa	SG 6.6-170-6 600	6 600	170,0	165,0	2 037	8,8
E-VE04	506 501	6 195 859	52,0	Siemens Gamesa SG ...	Yes	Siemens Gamesa	SG 6.6-170-6 600	6 600	170,0	165,0	2 037	8,8
E-VE05	507 253	6 195 881	52,2	Siemens Gamesa SG ...	Yes	Siemens Gamesa	SG 6.6-170-6 600	6 600	170,0	165,0	2 037	8,8
E-VE06	505 294	6 195 211	55,3	Siemens Gamesa SG ...	Yes	Siemens Gamesa	SG 6.6-170-6 600	6 600	170,0	165,0	2 037	8,8
E-VE07	505 491	6 194 401	54,0	Siemens Gamesa SG ...	Yes	Siemens Gamesa	SG 6.6-170-6 600	6 600	170,0	165,0	2 037	8,8
E-VE08	506 035	6 195 026	53,7	Siemens Gamesa SG ...	Yes	Siemens Gamesa	SG 6.6-170-6 600	6 600	170,0	165,0	2 037	8,8
E-VE09	506 884	6 194 962	53,3	Siemens Gamesa SG ...	Yes	Siemens Gamesa	SG 6.6-170-6 600	6 600	170,0	165,0	2 037	8,8
E-VE10	506 331	6 194 190	54,0	Siemens Gamesa SG ...	Yes	Siemens Gamesa	SG 6.6-170-6 600	6 600	170,0	165,0	2 037	8,8
E-VE11	508 295	6 195 151	50,4	Siemens Gamesa SG ...	Yes	Siemens Gamesa	SG 6.6-170-6 600	6 600	170,0	165,0	2 037	8,8
E-VE12	507 655	6 194 577	52,3	Siemens Gamesa SG ...	Yes	Siemens Gamesa	SG 6.6-170-6 600	6 600	170,0	165,0	2 037	8,8
E-VE13	507 391	6 193 769	53,5	Siemens Gamesa SG ...	Yes	Siemens Gamesa	SG 6.6-170-6 600	6 600	170,0	165,0	2 037	8,8
E-VE14	508 259	6 193 993	52,0	Siemens Gamesa SG ...	Yes	Siemens Gamesa	SG 6.6-170-6 600	6 600	170,0	165,0	2 037	8,8
E-VE15	509 883	6 195 766	50,4	Siemens Gamesa SG ...	Yes	Siemens Gamesa	SG 6.6-170-6 600	6 600	170,0	165,0	2 037	8,8
E-VE16	513 718	6 195 996	46,0	Siemens Gamesa SG ...	Yes	Siemens Gamesa	SG 6.6-170-6 600	6 600	170,0	165,0	2 037	8,8
E-VE17	510 597	6 193 591	53,2	Siemens Gamesa SG ...	Yes	Siemens Gamesa	SG 6.6-170-6 600	6 600	170,0	165,0	2 037	8,8
E-VE18	510 530	6 191 574	50,0	Siemens Gamesa SG ...	Yes	Siemens Gamesa	SG 6.6-170-6 600	6 600	170,0	165,0	2 037	8,8
E-VE19	512 020	6 192 269	46,3	Siemens Gamesa SG ...	Yes	Siemens Gamesa	SG 6.6-170-6 600	6 600	170,0	165,0	2 037	8,8
E-VE20	513 240	6 192 097	45,3	Siemens Gamesa SG ...	Yes	Siemens Gamesa	SG 6.6-170-6 600	6 600	170,0	165,0	2 037	8,8
E-VE21	509 118	6 189 929	53,2	Siemens Gamesa SG ...	Yes	Siemens Gamesa	SG 6.6-170-6 600	6 600	170,0	165,0	2 037	8,8
E-VE22	508 045	6 189 297	55,0	Siemens Gamesa SG ...	Yes	Siemens Gamesa	SG 6.6-170-6 600	6 600	170,0	165,0	2 037	8,8
E-VE23	509 083	6 189 002	52,3	Siemens Gamesa SG ...	Yes	Siemens Gamesa	SG 6.6-170-6 600	6 600	170,0	165,0	2 037	8,8
E-VE24	508 432	6 188 305	52,0	Siemens Gamesa SG ...	Yes	Siemens Gamesa	SG 6.6-170-6 600	6 600	170,0	165,0	2 037	8,8
E-VE25	509 068	6 187 814	51,8	Siemens Gamesa SG ...	Yes	Siemens Gamesa	SG 6.6-170-6 600	6 600	170,0	165,0	2 037	8,8
E-VE26	512 902	6 188 519	46,5	Siemens Gamesa SG ...	Yes	Siemens Gamesa	SG 6.6-170-6 600	6 600	170,0	165,0	2 037	8,8
E-VE27	513 359	6 190 431	47,0	Siemens Gamesa SG ...	Yes	Siemens Gamesa	SG 6.6-170-6 600	6 600	170,0	165,0	2 037	8,8

To be continued on next page...

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SHADOW - Main Result

Calculation: SHADOW

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	Y	X	Z	Row data/Description	WTG type		Type-generator	Power, rated [kW]	Rotor diameter [m]	Hub height [m]	Shadow data	
					Valid	Manufact.					Calculation distance [m]	RPM
			[m]									[RPM]
N-VE01	507 209	6 201 524	51,0	Siemens Gamesa SG ...	Yes	Siemens Gamesa	SG 6.6-170-6 600	6 600	170,0	165,0	2 037	8,8
N-VE02	508 734	6 201 665	47,0	Siemens Gamesa SG ...	Yes	Siemens Gamesa	SG 6.6-170-6 600	6 600	170,0	165,0	2 037	8,8
N-VE03	506 435	6 200 737	50,4	Siemens Gamesa SG ...	Yes	Siemens Gamesa	SG 6.6-170-6 600	6 600	170,0	165,0	2 037	8,8
N-VE04	506 209	6 199 545	52,6	Siemens Gamesa SG ...	Yes	Siemens Gamesa	SG 6.6-170-6 600	6 600	170,0	165,0	2 037	8,8
N-VE05	506 994	6 198 936	50,6	Siemens Gamesa SG ...	Yes	Siemens Gamesa	SG 6.6-170-6 600	6 600	170,0	165,0	2 037	8,8
N-VE06	510 789	6 199 120	51,0	Siemens Gamesa SG ...	Yes	Siemens Gamesa	SG 6.6-170-6 600	6 600	170,0	165,0	2 037	8,8
N-VE07	509 212	6 199 396	48,3	Siemens Gamesa SG ...	Yes	Siemens Gamesa	SG 6.6-170-6 600	6 600	170,0	165,0	2 037	8,8
N-VE08	510 142	6 200 713	47,9	Siemens Gamesa SG ...	Yes	Siemens Gamesa	SG 6.6-170-6 600	6 600	170,0	165,0	2 037	8,8

Shadow receptor-Input

No.	Y	X	Z	Width	Height	Elevation a.g.l.	Slope of window	Direction mode	Eye height (ZVI) a.g.l.
			[m]	[m]	[m]	[m]	[°]		[m]
G01	506 843	6 200 422	54,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G02	507 506	6 199 600	51,9	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G03	507 490	6 199 545	52,7	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G04	507 464	6 199 492	53,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G05	507 561	6 199 583	52,4	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G06	507 632	6 199 555	53,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G07	507 619	6 199 509	53,5	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G08	507 537	6 199 529	52,3	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G09	507 682	6 199 497	53,8	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G10	507 669	6 199 423	53,1	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G11	507 642	6 199 366	54,3	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G12	507 228	6 198 595	55,8	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G13	507 313	6 198 194	54,4	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G14	509 558	6 201 886	47,1	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G15	509 794	6 201 446	49,3	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G16	509 856	6 201 185	51,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G17	510 988	6 201 034	51,6	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G18	508 962	6 200 071	50,7	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G19	510 413	6 199 759	48,9	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G20	509 553	6 199 558	53,4	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G21	512 320	6 200 121	50,9	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G22	513 368	6 195 217	46,4	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G23	513 633	6 195 185	45,8	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G24	513 680	6 195 355	46,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G25	513 740	6 195 540	45,6	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G26	513 978	6 196 950	47,1	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G27	514 634	6 196 384	46,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G28	514 618	6 196 386	45,9	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G29	514 593	6 196 389	45,7	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G30	514 567	6 196 392	44,3	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G31	514 535	6 196 397	43,3	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G32	514 544	6 196 497	44,3	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G33	514 564	6 196 494	45,2	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G34	514 587	6 196 492	45,9	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G35	514 541	6 196 549	43,6	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G36	510 744	6 195 273	52,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G37	507 058	6 197 245	55,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G38	507 055	6 197 200	55,4	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G39	505 767	6 195 866	56,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G40	506 485	6 195 329	55,6	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G41	504 924	6 194 409	55,7	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G42	510 825	6 194 492	51,1	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G43	510 860	6 194 485	51,5	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G44	511 099	6 194 463	50,7	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G45	511 072	6 194 465	51,4	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G46	511 051	6 194 468	52,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G47	511 018	6 194 470	52,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G48	510 973	6 194 477	51,6	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G49	510 940	6 194 480	51,1	1,0	1,0	1,0	90,0	"Green house mode"	2,0

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Project:

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Calculated:

2024-11-18 16:24/4.1.254

SHADOW - Main Result

Calculation: SHADOW

...continued from previous page

No.	Y	X	Z	Width	Height	Elevation a.g.l.	Slope of window	Direction mode	Eye height (ZVI) a.g.l.
			[m]	[m]	[m]	[m]	[°]		[m]
G50	512 500	6 191 593	49,9	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G51	512 482	6 191 483	48,8	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G52	512 537	6 191 402	49,6	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G53	512 499	6 190 966	48,8	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G54	512 499	6 190 841	50,4	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G55	513 257	6 189 826	47,4	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G56	513 387	6 189 656	46,7	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G57	512 309	6 189 025	50,4	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G58	512 133	6 188 384	48,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0

Calculation Results

Shadow receptor

Shadow, expected values

No.	Shadow hours per year [h/year]	Avoided hours per year [h/year]
G01	4:41	
G02	11:44	
G03	12:44	
G04	14:08	
G05	11:07	
G06	10:43	
G07	11:32	
G08	12:10	
G09	11:05	
G10	12:23	
G11	13:40	
G12	0:00	
G13	1:45	
G14	10:03	
G15	15:16	
G16	25:29	
G17	13:20	
G18	20:33	
G19	17:35	
G20*	2:53	36:52
G21	1:21	
G22	0:00	
G23	0:00	
G24	0:00	
G25	0:00	
G26	4:16	
G27	4:58	
G28	5:05	
G29	5:19	
G30	5:34	
G31	5:53	
G32	5:06	
G33	4:55	
G34	4:46	
G35	4:51	
G36	12:16	
G37	20:38	
G38	23:01	
G39*	29:26	5:20
G40*	28:23	20:05
G41*	29:16	11:35
G42	5:03	
G43	5:16	
G44	5:41	
G45	5:44	
G46	5:43	
G47	5:43	

To be continued on next page...

Project:

UAB Eurostat 1 planuojamos ukines veiklos – vejo elektriniu irengimas Pasvalio r. sav., Pusaloto sen., Pagirrupiu k., Jaciunu k., Matkunu k., Deglenu k., Daukuciu vs., Jakuboniu k., Sermuksniu k., Mickaiciu k., Budininku k., Kidzioniu k., Ozkyciu k. ir Panevezio r. sav., Panevezio sen., Pazuku k., Eimuliskio k., Grikpedziu k., Staciunu k.

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Calculated:

2024-11-18 16:24/4.1.254

SHADOW - Main Result

Calculation: SHADOW

...continued from previous page

Shadow, expected values

No.	Shadow hours per year [h/year]	Avoided hours per year [h/year]
G48	5:36	
G49	5:32	
G50	11:00	
G51	4:13	
G52	4:23	
G53	4:37	
G54	5:21	
G55	0:47	
G56	2:55	
G57	7:19	
G58	15:59	

* Receptors where shadow flicker is reduced by curtailment

Total amount of flickering on the shadow receptors caused by each WTG

No.	Name	Stopped due to flicker curtailment [h/year]	Expected [h/year]
E-VE01	Siemens Gamesa SG 6.6-170 6600 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (9)		13:54
E-VE02	Siemens Gamesa SG 6.6-170 6600 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (10)	17:51	17:29
E-VE03	Siemens Gamesa SG 6.6-170 6600 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (11)		9:20
E-VE04	Siemens Gamesa SG 6.6-170 6600 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (12)		14:24
E-VE05	Siemens Gamesa SG 6.6-170 6600 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (13)		6:58
E-VE06	Siemens Gamesa SG 6.6-170 6600 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (14)	17:50	7:06
E-VE07	Siemens Gamesa SG 6.6-170 6600 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (15)		27:17
E-VE08	Siemens Gamesa SG 6.6-170 6600 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (16)	118:26	5:51
E-VE09	Siemens Gamesa SG 6.6-170 6600 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (17)		18:30
E-VE10	Siemens Gamesa SG 6.6-170 6600 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (18)		4:20
E-VE11	Siemens Gamesa SG 6.6-170 6600 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (19)		1:31
E-VE12	Siemens Gamesa SG 6.6-170 6600 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (20)		2:26
E-VE13	Siemens Gamesa SG 6.6-170 6600 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (21)		1:19
E-VE14	Siemens Gamesa SG 6.6-170 6600 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (22)		0:00
E-VE15	Siemens Gamesa SG 6.6-170 6600 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (23)		12:16
E-VE16	Siemens Gamesa SG 6.6-170 6600 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (24)		16:42
E-VE17	Siemens Gamesa SG 6.6-170 6600 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (25)		15:00
E-VE18	Siemens Gamesa SG 6.6-170 6600 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (26)		3:08
E-VE19	Siemens Gamesa SG 6.6-170 6600 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (27)		0:00
E-VE20	Siemens Gamesa SG 6.6-170 6600 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (36)		6:29
E-VE21	Siemens Gamesa SG 6.6-170 6600 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (29)		0:00
E-VE22	Siemens Gamesa SG 6.6-170 6600 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (30)		0:00
E-VE23	Siemens Gamesa SG 6.6-170 6600 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (31)		0:00
E-VE24	Siemens Gamesa SG 6.6-170 6600 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (32)		0:00
E-VE25	Siemens Gamesa SG 6.6-170 6600 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (33)		0:00
E-VE26	Siemens Gamesa SG 6.6-170 6600 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (34)		27:03
E-VE27	Siemens Gamesa SG 6.6-170 6600 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (35)		13:59
N-VE01	Siemens Gamesa SG 6.6-170 6600 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (1)		0:00
N-VE02	Siemens Gamesa SG 6.6-170 6600 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (2)		24:33
N-VE03	Siemens Gamesa SG 6.6-170 6600 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (3)		0:00
N-VE04	Siemens Gamesa SG 6.6-170 6600 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (4)		14:19
N-VE05	Siemens Gamesa SG 6.6-170 6600 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (5)		21:31
N-VE06	Siemens Gamesa SG 6.6-170 6600 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (6)		13:06
N-VE07	Siemens Gamesa SG 6.6-170 6600 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (7)	153:33	18:17
N-VE08	Siemens Gamesa SG 6.6-170 6600 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (8)		36:06

Total times in Receptor wise and WTG wise tables can differ, as a WTG can lead to flicker at 2 or more receptors simultaneously and/or receptors may receive flicker from 2 or more WTGs simultaneously.

The calculation of the total expected values for a given receptor assumes a weighted average directional reduction for all WTGs contributing to shadow flicker within the same day. In the case where shadow flicker from different WTGs is not concurrent within the day, the total expected time at a given receptor may deviate marginally from the individual flicker time caused by each turbine separately.

**Prognozuojamas PŪV šėšėliavimo
vertinimas "H" alternatyva**

Project:

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Calculated:
2024-11-18 11:22/4.1.254

SHADOW - Main Result

Calculation: SHADOW

Assumptions for shadow calculations

Maximum distance for influence

Calculate only when more than 20 % of sun is covered by the blade

Please look in WTG table

Minimum sun height over horizon for influence

3 °

Day step for calculation

1 days

Time step for calculation

1 minutes

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1,41	2,36	4,03	5,55	8,35	8,36	8,16	7,72	5,06	3,23	1,33	0,98

Operational hours are calculated from WTGs in calculation and wind distribution:

Site data: ATLAS; 12 sectors; Radius: 43 000 m (3)

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
949	503	233	287	574	629	760	1 008	1 179	998	753	542	8 416

Monthly aggregation of real case reduction

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

A ZVI (Zones of Visual Influence) calculation is performed before flicker

calculation so non visible WTG do not contribute to calculated flicker

values. A WTG will be visible if it is visible from any part of the receiver

window. The ZVI calculation is based on the following assumptions:

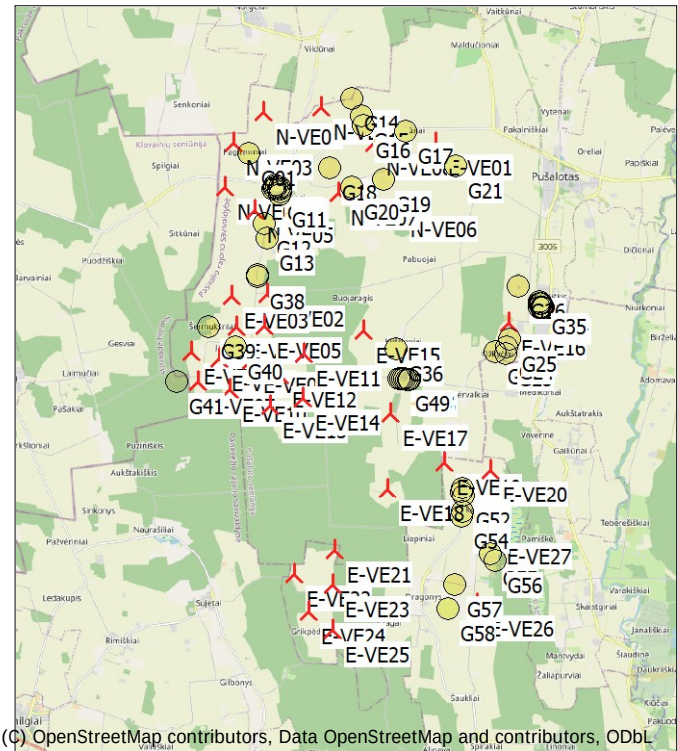
DHM: Project Wizard Elevation Data Grid (SRTM: Shuttle DTM 1 arc-second)

Receptor grid resolution: 1,0 m

Topographic shadow included in calculation

All coordinates are in

Lithuanian TM LKS94-LKS94 (LT)



(C) OpenStreetMap contributors, Data OpenStreetMap and contributors, ODbL

Scale 1:200 000

New WTG

Shadow receptor

WTGs

	Y	X	Z	Row data/Description	WTG type			Power, rated [kW]	Rotor diameter [m]	Hub height [m]	Shadow data				
					Valid	Manufact.	Type-generator				Calculation distance	RPM			
											[m]	[RPM]			
E-VE01	511 774	6 200 739	47,5	Hypothetical	10000	200,0	!...	Yes	Hypothetical	-10 000	10 000	200,0	180,0	2 500	-
E-VE02	507 315	6 196 732	53,0	Hypothetical	10000	200,0	!...	Yes	Hypothetical	-10 000	10 000	200,0	180,0	2 500	-
E-VE03	506 375	6 196 675	54,7	Hypothetical	10000	200,0	!...	Yes	Hypothetical	-10 000	10 000	200,0	180,0	2 500	-
E-VE04	506 501	6 195 859	52,0	Hypothetical	10000	200,0	!...	Yes	Hypothetical	-10 000	10 000	200,0	180,0	2 500	-
E-VE05	507 253	6 195 881	52,2	Hypothetical	10000	200,0	!...	Yes	Hypothetical	-10 000	10 000	200,0	180,0	2 500	-
E-VE06	505 294	6 195 211	55,3	Hypothetical	10000	200,0	!...	Yes	Hypothetical	-10 000	10 000	200,0	180,0	2 500	-
E-VE07	505 491	6 194 401	54,0	Hypothetical	10000	200,0	!...	Yes	Hypothetical	-10 000	10 000	200,0	180,0	2 500	-
E-VE08	506 035	6 195 026	53,7	Hypothetical	10000	200,0	!...	Yes	Hypothetical	-10 000	10 000	200,0	180,0	2 500	-
E-VE09	506 884	6 194 962	53,3	Hypothetical	10000	200,0	!...	Yes	Hypothetical	-10 000	10 000	200,0	180,0	2 500	-
E-VE10	506 331	6 194 190	54,0	Hypothetical	10000	200,0	!...	Yes	Hypothetical	-10 000	10 000	200,0	180,0	2 500	-
E-VE11	508 295	6 195 151	50,4	Hypothetical	10000	200,0	!...	Yes	Hypothetical	-10 000	10 000	200,0	180,0	2 500	-
E-VE12	507 655	6 194 577	52,3	Hypothetical	10000	200,0	!...	Yes	Hypothetical	-10 000	10 000	200,0	180,0	2 500	-
E-VE13	507 391	6 193 769	53,5	Hypothetical	10000	200,0	!...	Yes	Hypothetical	-10 000	10 000	200,0	180,0	2 500	-
E-VE14	508 259	6 193 993	52,0	Hypothetical	10000	200,0	!...	Yes	Hypothetical	-10 000	10 000	200,0	180,0	2 500	-
E-VE15	509 883	6 195 766	50,4	Hypothetical	10000	200,0	!...	Yes	Hypothetical	-10 000	10 000	200,0	180,0	2 500	-
E-VE16	513 718	6 195 996	46,0	Hypothetical	10000	200,0	!...	Yes	Hypothetical	-10 000	10 000	200,0	180,0	2 500	-
E-VE17	510 597	6 193 591	53,2	Hypothetical	10000	200,0	!...	Yes	Hypothetical	-10 000	10 000	200,0	180,0	2 500	-
E-VE18	510 530	6 191 574	50,0	Hypothetical	10000	200,0	!...	Yes	Hypothetical	-10 000	10 000	200,0	180,0	2 500	-
E-VE19	512 020	6 192 269	46,3	Hypothetical	10000	200,0	!...	Yes	Hypothetical	-10 000	10 000	200,0	180,0	2 500	-
E-VE20	513 240	6 192 097	45,3	Hypothetical	10000	200,0	!...	Yes	Hypothetical	-10 000	10 000	200,0	180,0	2 500	-
E-VE21	509 118	6 189 929	53,2	Hypothetical	10000	200,0	!...	Yes	Hypothetical	-10 000	10 000	200,0	180,0	2 500	-
E-VE22	508 045	6 189 297	55,0	Hypothetical	10000	200,0	!...	Yes	Hypothetical	-10 000	10 000	200,0	180,0	2 500	-
E-VE23	509 083	6 189 002	52,3	Hypothetical	10000	200,0	!...	Yes	Hypothetical	-10 000	10 000	200,0	180,0	2 500	-
E-VE24	508 432	6 188 305	52,0	Hypothetical	10000	200,0	!...	Yes	Hypothetical	-10 000	10 000	200,0	180,0	2 500	-
E-VE25	509 068	6 187 814	51,8	Hypothetical	10000	200,0	!...	Yes	Hypothetical	-10 000	10 000	200,0	180,0	2 500	-
E-VE26	512 902	6 188 519	46,5	Hypothetical	10000	200,0	!...	Yes	Hypothetical	-10 000	10 000	200,0	180,0	2 500	-
E-VE27	513 359	6 190 431	47,0	Hypothetical	10000	200,0	!...	Yes	Hypothetical	-10 000	10 000	200,0	180,0	2 500	-
N-VE01	507 209	6 201 524	51,0	Hypothetical	10000	200,0	!...	Yes	Hypothetical	-10 000	10 000	200,0	180,0	2 500	-
N-VE02	508 734	6 201 665	47,0	Hypothetical	10000	200,0	!...	Yes	Hypothetical	-10 000	10 000	200,0	180,0	2 500	-

To be continued on next page...

Project:

UAB Eurostat 1 planuojamos ukinės veiklos – vejo elektriniu irengimas Pasvalio r. sav., Pusaloto sen., Pagirniupių k., Jaciunu k., Matkunu k., Deglenu k., Daukuciu vs., Jakubonių k., Sermuksnių k., Mickaiciu k., Budininku k., Kidzionių k., Ozkyciu k. ir Panevezio r. sav., Panevezio sen., Pazuku k., Eimuliskio k., Grippedziu k., Staciunu k

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SHADOW - Main Result

Calculation: SHADOW

...continued from previous page

	Y	X	Z	Row data/Description	WTG type			Power, rated [kW]	Rotor diameter [m]	Hub height [m]	Shadow data			
					Valid	Manufact.	Type-generator				Calculation distance [m]	RPM [RPM]		
			[m]											
N-VE03	506 435	6 200 737	50,4	Hypothetical	10000	200.0 !...	Yes	Hypothetical	-10 000	10 000	200,0	180,0	2 500	-
N-VE04	506 209	6 199 545	52,6	Hypothetical	10000	200.0 !...	Yes	Hypothetical	-10 000	10 000	200,0	180,0	2 500	-
N-VE05	506 994	6 198 936	50,6	Hypothetical	10000	200.0 !...	Yes	Hypothetical	-10 000	10 000	200,0	180,0	2 500	-
N-VE06	510 789	6 199 120	51,0	Hypothetical	10000	200.0 !...	Yes	Hypothetical	-10 000	10 000	200,0	180,0	2 500	-
N-VE07	509 212	6 199 396	48,3	Hypothetical	10000	200.0 !...	Yes	Hypothetical	-10 000	10 000	200,0	180,0	2 500	-
N-VE08	510 142	6 200 713	47,9	Hypothetical	10000	200.0 !...	Yes	Hypothetical	-10 000	10 000	200,0	180,0	2 500	-

Shadow receptor-Input

No.	Y	X	Z	Width	Height	Elevation a.g.l.	Slope of window	Direction mode	Eye height (ZVI) a.g.l.
			[m]	[m]	[m]	[m]	[°]		[m]
G01	506 843	6 200 422	54,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G02	507 506	6 199 600	51,9	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G03	507 490	6 199 545	52,7	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G04	507 464	6 199 492	53,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G05	507 561	6 199 583	52,4	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G06	507 632	6 199 555	53,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G07	507 619	6 199 509	53,5	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G08	507 537	6 199 529	52,3	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G09	507 682	6 199 497	53,8	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G10	507 669	6 199 423	53,1	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G11	507 642	6 199 366	54,3	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G12	507 228	6 198 595	55,8	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G13	507 313	6 198 194	54,4	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G14	509 558	6 201 886	47,1	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G15	509 794	6 201 446	49,3	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G16	509 856	6 201 185	51,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G17	510 988	6 201 034	51,6	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G18	508 962	6 200 071	50,7	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G19	510 413	6 199 759	48,9	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G20	509 553	6 199 558	53,4	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G21	512 320	6 200 121	50,9	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G22	513 368	6 195 217	46,4	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G23	513 633	6 195 185	45,8	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G24	513 680	6 195 355	46,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G25	513 740	6 195 540	45,6	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G26	513 978	6 196 950	47,1	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G27	514 634	6 196 384	46,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G28	514 618	6 196 386	45,9	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G29	514 593	6 196 389	45,7	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G30	514 567	6 196 392	44,3	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G31	514 535	6 196 397	43,3	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G32	514 544	6 196 497	44,3	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G33	514 564	6 196 494	45,2	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G34	514 587	6 196 492	45,9	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G35	514 541	6 196 549	43,6	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G36	510 744	6 195 273	52,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G37	507 058	6 197 245	55,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G38	507 055	6 197 200	55,4	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G39	505 767	6 195 866	56,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G40	506 485	6 195 329	55,6	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G41	504 924	6 194 409	55,7	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G42	510 825	6 194 492	51,1	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G43	510 860	6 194 485	51,5	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G44	511 099	6 194 463	50,7	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G45	511 072	6 194 465	51,4	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G46	511 051	6 194 468	52,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G47	511 018	6 194 470	52,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G48	510 973	6 194 477	51,6	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G49	510 940	6 194 480	51,1	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G50	512 500	6 191 593	49,9	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G51	512 482	6 191 483	48,8	1,0	1,0	1,0	90,0	"Green house mode"	2,0

To be continued on next page...

Project:

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SHADOW - Main Result

Calculation: SHADOW

...continued from previous page

No.	Y	X	Z	Width	Height	Elevation a.g.l.	Slope of window	Direction mode	Eye height (ZVI) a.g.l.
			[m]	[m]	[m]	[m]	[°]		[m]
G52	512 537	6 191 402	49,6	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G53	512 499	6 190 966	48,8	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G54	512 499	6 190 841	50,4	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G55	513 257	6 189 826	47,4	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G56	513 387	6 189 656	46,7	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G57	512 309	6 189 025	50,4	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G58	512 133	6 188 384	48,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0

Calculation Results

Shadow receptor

Shadow, expected values

No. Shadow hours

per year

[h/year]

G01	12:01
G02	16:17
G03	17:45
G04	19:47
G05	15:29
G06	14:59
G07	16:08
G08	17:02
G09	15:28
G10	17:12
G11	19:04
G12	2:48
G13	8:16
G14	16:02
G15	22:39
G16	37:14
G17	20:53
G18	29:48
G19	22:48
G20	57:23
G21	3:44
G22	0:00
G23	0:00
G24	0:00
G25	0:00
G26	6:02
G27	6:54
G28	7:07
G29	7:25
G30	7:46
G31	8:11
G32	7:05
G33	6:52
G34	6:36
G35	6:43
G36	15:11
G37	30:23
G38	33:57
G39	51:12
G40	68:02
G41	57:58
G42	7:00
G43	7:14
G44	7:26
G45	7:30
G46	7:32
G47	7:35
G48	7:31
G49	7:28

To be continued on next page...

SHADOW - Main Result

Calculation: SHADOW

...continued from previous page

Shadow, expected values

No. Shadow hours

per year

[h/year]

G50	13:37
G51	5:46
G52	6:04
G53	9:03
G54	10:22
G55	1:58
G56	4:14
G57	10:06
G58	24:34

Total amount of flickering on the shadow receptors caused by each WTG

No.	Name	Expected [h/year]
E-VE01	Hypothetical 10000 200.0 !O! hub: 180,0 m (TOT: 280,0 m) (9)	19:38
E-VE02	Hypothetical 10000 200.0 !O! hub: 180,0 m (TOT: 280,0 m) (10)	32:19
E-VE03	Hypothetical 10000 200.0 !O! hub: 180,0 m (TOT: 280,0 m) (11)	12:43
E-VE04	Hypothetical 10000 200.0 !O! hub: 180,0 m (TOT: 280,0 m) (12)	21:20
E-VE05	Hypothetical 10000 200.0 !O! hub: 180,0 m (TOT: 280,0 m) (13)	10:08
E-VE06	Hypothetical 10000 200.0 !O! hub: 180,0 m (TOT: 280,0 m) (14)	15:13
E-VE07	Hypothetical 10000 200.0 !O! hub: 180,0 m (TOT: 280,0 m) (15)	41:53
E-VE08	Hypothetical 10000 200.0 !O! hub: 180,0 m (TOT: 280,0 m) (16)	44:07
E-VE09	Hypothetical 10000 200.0 !O! hub: 180,0 m (TOT: 280,0 m) (17)	25:14
E-VE10	Hypothetical 10000 200.0 !O! hub: 180,0 m (TOT: 280,0 m) (18)	6:57
E-VE11	Hypothetical 10000 200.0 !O! hub: 180,0 m (TOT: 280,0 m) (19)	3:54
E-VE12	Hypothetical 10000 200.0 !O! hub: 180,0 m (TOT: 280,0 m) (20)	3:32
E-VE13	Hypothetical 10000 200.0 !O! hub: 180,0 m (TOT: 280,0 m) (21)	2:02
E-VE14	Hypothetical 10000 200.0 !O! hub: 180,0 m (TOT: 280,0 m) (22)	1:01
E-VE15	Hypothetical 10000 200.0 !O! hub: 180,0 m (TOT: 280,0 m) (23)	14:11
E-VE16	Hypothetical 10000 200.0 !O! hub: 180,0 m (TOT: 280,0 m) (24)	21:51
E-VE17	Hypothetical 10000 200.0 !O! hub: 180,0 m (TOT: 280,0 m) (25)	18:20
E-VE18	Hypothetical 10000 200.0 !O! hub: 180,0 m (TOT: 280,0 m) (26)	8:52
E-VE19	Hypothetical 10000 200.0 !O! hub: 180,0 m (TOT: 280,0 m) (27)	0:00
E-VE20	Hypothetical 10000 200.0 !O! hub: 180,0 m (TOT: 280,0 m) (28)	7:37
E-VE21	Hypothetical 10000 200.0 !O! hub: 180,0 m (TOT: 280,0 m) (29)	0:00
E-VE22	Hypothetical 10000 200.0 !O! hub: 180,0 m (TOT: 280,0 m) (30)	0:00
E-VE23	Hypothetical 10000 200.0 !O! hub: 180,0 m (TOT: 280,0 m) (31)	0:00
E-VE24	Hypothetical 10000 200.0 !O! hub: 180,0 m (TOT: 280,0 m) (32)	0:00
E-VE25	Hypothetical 10000 200.0 !O! hub: 180,0 m (TOT: 280,0 m) (33)	0:00
E-VE26	Hypothetical 10000 200.0 !O! hub: 180,0 m (TOT: 280,0 m) (34)	40:47
E-VE27	Hypothetical 10000 200.0 !O! hub: 180,0 m (TOT: 280,0 m) (35)	17:59
N-VE01	Hypothetical 10000 200.0 !O! hub: 180,0 m (TOT: 280,0 m) (1)	2:02
N-VE02	Hypothetical 10000 200.0 !O! hub: 180,0 m (TOT: 280,0 m) (2)	43:46
N-VE03	Hypothetical 10000 200.0 !O! hub: 180,0 m (TOT: 280,0 m) (3)	0:00
N-VE04	Hypothetical 10000 200.0 !O! hub: 180,0 m (TOT: 280,0 m) (4)	18:34
N-VE05	Hypothetical 10000 200.0 !O! hub: 180,0 m (TOT: 280,0 m) (5)	28:03
N-VE06	Hypothetical 10000 200.0 !O! hub: 180,0 m (TOT: 280,0 m) (6)	19:22
N-VE07	Hypothetical 10000 200.0 !O! hub: 180,0 m (TOT: 280,0 m) (7)	86:59
N-VE08	Hypothetical 10000 200.0 !O! hub: 180,0 m (TOT: 280,0 m) (8)	48:31

Total times in Receptor wise and WTG wise tables can differ, as a WTG can lead to flicker at 2 or more receptors simultaneously and/or receptors may receive flicker from 2 or more WTGs simultaneously.

The calculation of the total expected values for a given receptor assumes a weighted average directional reduction for all WTGs contributing to shadow flicker within the same day. In the case where shadow flicker from different WTGs is not concurrent within the day, the total expected time at a given receptor may deviate marginally from the individual flicker time caused by each turbine separately.

Project:

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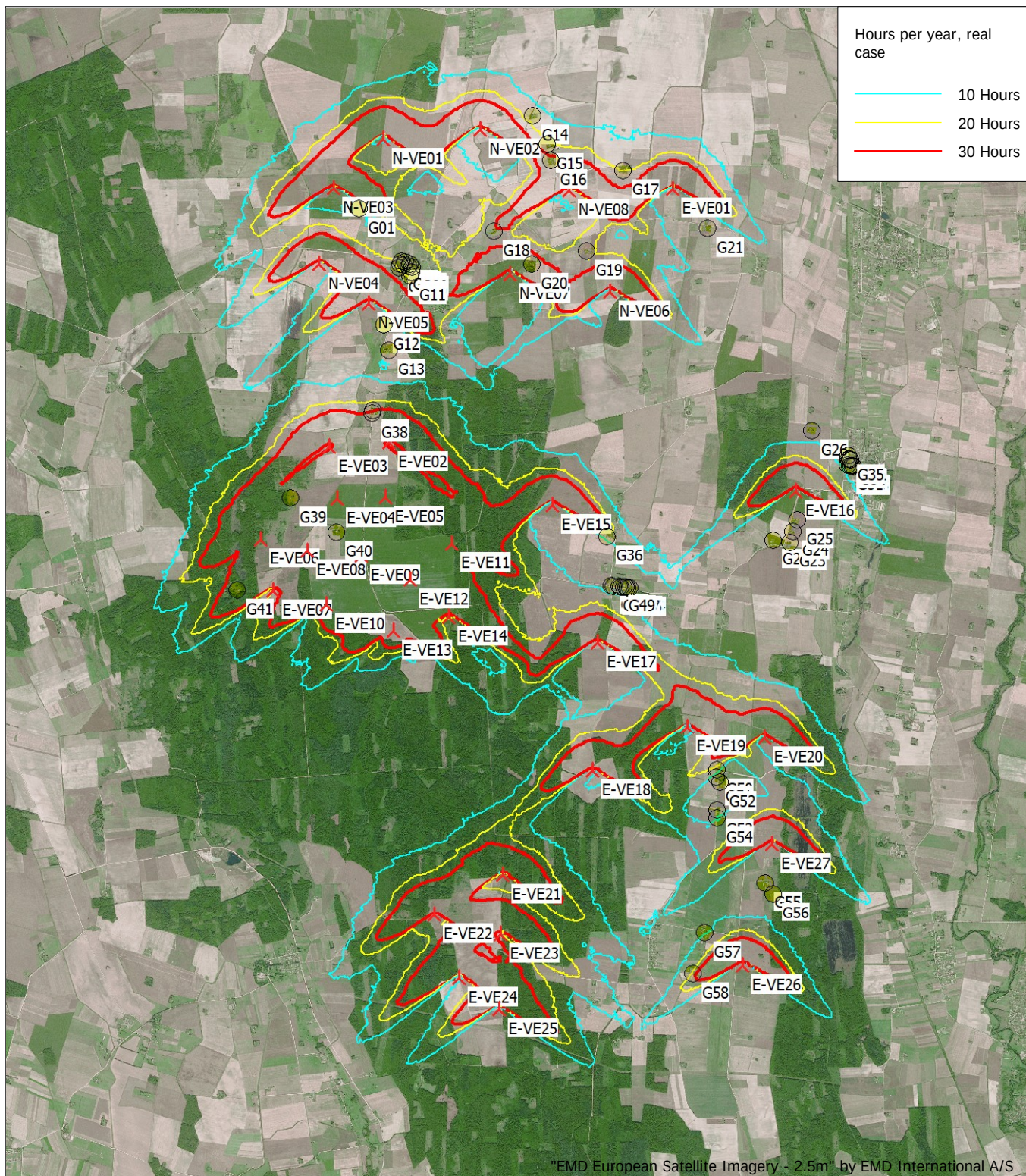
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SHADOW - Map

Calculation: SHADOW



Map: windPRO European Satellite Imagery - 2.5m , Print scale 1:90 000, Map center Lithuanian TM LKS94-LKS94 (LT) East: 509 712 North: 6 194 753
New WTG Shadow receptor
Flicker map level: Project Wizard Elevation Data Grid (SRTM: Shuttle DTM 1 arc-second)
Time step: 4 minutes, Day step: 14 days, Map resolution: 30 m, Visibility resolution: 15 m, Eye height: 1,5 m

**PŪV šėšėliavimo mažinimas
(shadow shut-down)
"H" alternatyva**

Project:

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SHADOW - Main Result

Calculation: SHADOW

Assumptions for shadow calculations

Maximum distance for influence

Calculate only when more than 20 % of sun is covered by the blade

Please look in WTG table

Minimum sun height over horizon for influence

3 °

Day step for calculation

1 days

Time step for calculation

1 minutes

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1,41	2,36	4,03	5,55	8,35	8,36	8,16	7,72	5,06	3,23	1,33	0,98

Operational hours are calculated from WTGs in calculation and wind distribution:

Site data: ATLAS; 12 sectors; Radius: 43 000 m (3)

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
949	503	233	287	574	629	760	1 008	1 179	998	753	542	8 416

Monthly aggregation of real case reduction

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

Flicker curtailment by stopping specific turbines

A ZVI (Zones of Visual Influence) calculation is performed before flicker calculation so non visible WTG do not contribute to calculated flicker values. A WTG will be visible if it is visible from any part of the receiver window. The ZVI calculation is based on the following assumptions:

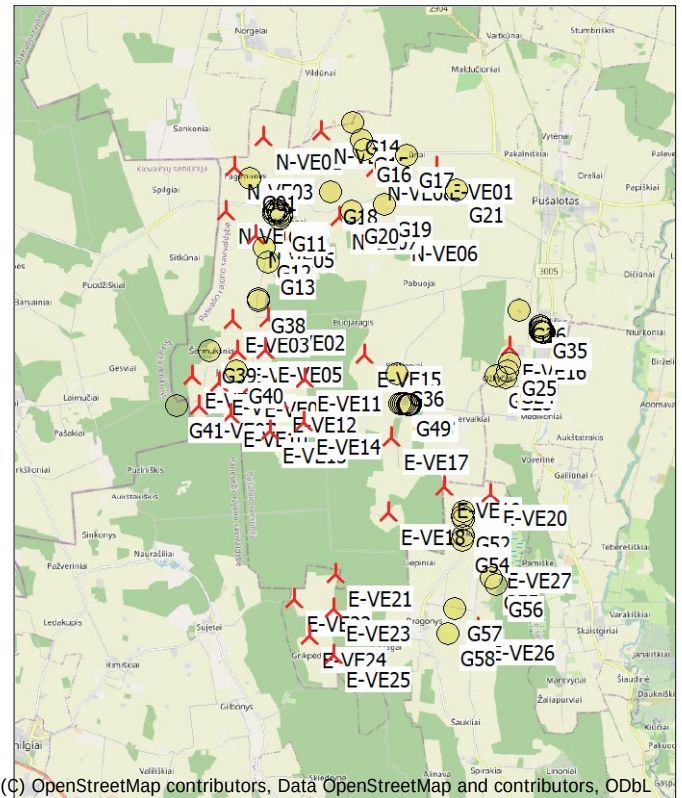
DHM: Project Wizard Elevation Data Grid (SRTM: Shuttle DTM 1 arc-second)

Receptor grid resolution: 1,0 m

Topographic shadow included in calculation

All coordinates are in

Lithuanian TM LKS94-LKS94 (LT)



(C) OpenStreetMap contributors, Data OpenStreetMap and contributors, ODbL

Scale 1:200 000

New WTG

Shadow receptor

WTGs

	Y	X	Z	Row data/Description	WTG type					Shadow data					
					Valid	Manufact.	Type-generator	Power, rated [kW]	Rotor diameter [m]	Hub height [m]	Calculation distance [m]	RPM			
E-VE01	511 774	6 200 739	47,5	Hypothetical	10000	200,0	!...	Yes	Hypothetical	-10 000	10 000	200,0	180,0	2 500	-
E-VE02	507 315	6 196 732	53,0	Hypothetical	10000	200,0	!...	Yes	Hypothetical	-10 000	10 000	200,0	180,0	2 500	-
E-VE03	506 375	6 196 675	54,7	Hypothetical	10000	200,0	!...	Yes	Hypothetical	-10 000	10 000	200,0	180,0	2 500	-
E-VE04	506 501	6 195 859	52,0	Hypothetical	10000	200,0	!...	Yes	Hypothetical	-10 000	10 000	200,0	180,0	2 500	-
E-VE05	507 253	6 195 881	52,2	Hypothetical	10000	200,0	!...	Yes	Hypothetical	-10 000	10 000	200,0	180,0	2 500	-
E-VE06	505 294	6 195 211	55,3	Hypothetical	10000	200,0	!...	Yes	Hypothetical	-10 000	10 000	200,0	180,0	2 500	-
E-VE07	505 491	6 194 401	54,0	Hypothetical	10000	200,0	!...	Yes	Hypothetical	-10 000	10 000	200,0	180,0	2 500	-
E-VE08	506 035	6 195 026	53,7	Hypothetical	10000	200,0	!...	Yes	Hypothetical	-10 000	10 000	200,0	180,0	2 500	-
E-VE09	506 884	6 194 962	53,3	Hypothetical	10000	200,0	!...	Yes	Hypothetical	-10 000	10 000	200,0	180,0	2 500	-
E-VE10	506 331	6 194 190	54,0	Hypothetical	10000	200,0	!...	Yes	Hypothetical	-10 000	10 000	200,0	180,0	2 500	-
E-VE11	508 295	6 195 151	50,4	Hypothetical	10000	200,0	!...	Yes	Hypothetical	-10 000	10 000	200,0	180,0	2 500	-
E-VE12	507 655	6 194 577	52,3	Hypothetical	10000	200,0	!...	Yes	Hypothetical	-10 000	10 000	200,0	180,0	2 500	-
E-VE13	507 391	6 193 769	53,5	Hypothetical	10000	200,0	!...	Yes	Hypothetical	-10 000	10 000	200,0	180,0	2 500	-
E-VE14	508 259	6 193 993	52,0	Hypothetical	10000	200,0	!...	Yes	Hypothetical	-10 000	10 000	200,0	180,0	2 500	-
E-VE15	509 883	6 195 766	50,4	Hypothetical	10000	200,0	!...	Yes	Hypothetical	-10 000	10 000	200,0	180,0	2 500	-
E-VE16	513 718	6 195 996	46,0	Hypothetical	10000	200,0	!...	Yes	Hypothetical	-10 000	10 000	200,0	180,0	2 500	-
E-VE17	510 597	6 193 591	53,2	Hypothetical	10000	200,0	!...	Yes	Hypothetical	-10 000	10 000	200,0	180,0	2 500	-
E-VE18	510 530	6 191 574	50,0	Hypothetical	10000	200,0	!...	Yes	Hypothetical	-10 000	10 000	200,0	180,0	2 500	-
E-VE19	512 020	6 192 269	46,3	Hypothetical	10000	200,0	!...	Yes	Hypothetical	-10 000	10 000	200,0	180,0	2 500	-
E-VE20	513 240	6 192 097	45,3	Hypothetical	10000	200,0	!...	Yes	Hypothetical	-10 000	10 000	200,0	180,0	2 500	-
E-VE21	509 118	6 189 929	53,2	Hypothetical	10000	200,0	!...	Yes	Hypothetical	-10 000	10 000	200,0	180,0	2 500	-
E-VE22	508 045	6 189 297	55,0	Hypothetical	10000	200,0	!...	Yes	Hypothetical	-10 000	10 000	200,0	180,0	2 500	-
E-VE23	509 083	6 189 002	52,3	Hypothetical	10000	200,0	!...	Yes	Hypothetical	-10 000	10 000	200,0	180,0	2 500	-
E-VE24	508 432	6 188 305	52,0	Hypothetical	10000	200,0	!...	Yes	Hypothetical	-10 000	10 000	200,0	180,0	2 500	-
E-VE25	509 068	6 187 814	51,8	Hypothetical	10000	200,0	!...	Yes	Hypothetical	-10 000	10 000	200,0	180,0	2 500	-
E-VE26	512 902	6 188 519	46,5	Hypothetical	10000	200,0	!...	Yes	Hypothetical	-10 000	10 000	200,0	180,0	2 500	-
E-VE27	513 359	6 190 431	47,0	Hypothetical	10000	200,0	!...	Yes	Hypothetical	-10 000	10 000	200,0	180,0	2 500	-

To be continued on next page...

Project:

UAB Eurostat 1 planuojamos ukinės veiklos – vejo elektriniu irengimas Pasvalio r. sav., Pusaloto sen., Pagirniupių k., Jaciunu k., Matkunu k., Deglenu k., Daukuciu vs., Jakubonių k., Sermuksnių k., Mickaiciu k., Budininku k., Kidzionių k., Ozkyciu k. ir Panevezio r. sav., Panevezio sen., Pazuku k., Eimuliskio k., Grikpedzių k., Staciunu k.

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SHADOW - Main Result

Calculation: SHADOW

...continued from previous page

									WTG type			Shadow data				
	Y		X		Z	Row data/Description			Valid	Manufact.	Type-generator	Power, rated	Rotor diameter	Hub height	Calculation distance	RPM
					[m]							[kW]	[m]	[m]	[m]	[RPM]
N-VE01	507 209	6 201 524	51,0	Hypothetical	10000	200.0	!...	Yes	Hypothetical	-10 000	10 000	200,0	180,0	2 500	-	
N-VE02	508 734	6 201 665	47,0	Hypothetical	10000	200.0	!...	Yes	Hypothetical	-10 000	10 000	200,0	180,0	2 500	-	
N-VE03	506 435	6 200 737	50,4	Hypothetical	10000	200.0	!...	Yes	Hypothetical	-10 000	10 000	200,0	180,0	2 500	-	
N-VE04	506 209	6 199 545	52,6	Hypothetical	10000	200.0	!...	Yes	Hypothetical	-10 000	10 000	200,0	180,0	2 500	-	
N-VE05	506 994	6 198 936	50,6	Hypothetical	10000	200.0	!...	Yes	Hypothetical	-10 000	10 000	200,0	180,0	2 500	-	
N-VE06	510 789	6 199 120	51,0	Hypothetical	10000	200.0	!...	Yes	Hypothetical	-10 000	10 000	200,0	180,0	2 500	-	
N-VE07	509 212	6 199 396	48,3	Hypothetical	10000	200.0	!...	Yes	Hypothetical	-10 000	10 000	200,0	180,0	2 500	-	
N-VE08	510 142	6 200 713	47,9	Hypothetical	10000	200.0	!...	Yes	Hypothetical	-10 000	10 000	200,0	180,0	2 500	-	

Shadow receptor-Input

No.	Y	X	Z	Width	Height	Elevation a.g.l.	Slope of window	Direction mode	Eye height (ZVI) a.g.l.
			[m]	[m]	[m]	[m]	[°]		[m]
G01	506 843	6 200 422	54,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G02	507 506	6 199 600	51,9	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G03	507 490	6 199 545	52,7	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G04	507 464	6 199 492	53,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G05	507 561	6 199 583	52,4	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G06	507 632	6 199 555	53,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G07	507 619	6 199 509	53,5	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G08	507 537	6 199 529	52,3	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G09	507 682	6 199 497	53,8	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G10	507 669	6 199 423	53,1	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G11	507 642	6 199 366	54,3	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G12	507 228	6 198 595	55,8	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G13	507 313	6 198 194	54,4	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G14	509 558	6 201 886	47,1	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G15	509 794	6 201 446	49,3	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G16	509 856	6 201 185	51,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G17	510 988	6 201 034	51,6	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G18	508 962	6 200 071	50,7	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G19	510 413	6 199 759	48,9	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G20	509 553	6 199 558	53,4	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G21	512 320	6 200 121	50,9	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G22	513 368	6 195 217	46,4	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G23	513 633	6 195 185	45,8	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G24	513 680	6 195 355	46,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G25	513 740	6 195 540	45,6	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G26	513 978	6 196 950	47,1	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G27	514 634	6 196 384	46,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G28	514 618	6 196 386	45,9	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G29	514 593	6 196 389	45,7	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G30	514 567	6 196 392	44,3	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G31	514 535	6 196 397	43,3	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G32	514 544	6 196 497	44,3	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G33	514 564	6 196 494	45,2	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G34	514 587	6 196 492	45,9	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G35	514 541	6 196 549	43,6	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G36	510 744	6 195 273	52,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G37	507 058	6 197 245	55,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G38	507 055	6 197 200	55,4	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G39	505 767	6 195 866	56,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G40	506 485	6 195 329	55,6	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G41	504 924	6 194 409	55,7	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G42	510 825	6 194 492	51,1	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G43	510 860	6 194 485	51,5	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G44	511 099	6 194 463	50,7	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G45	511 072	6 194 465	51,4	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G46	511 051	6 194 468	52,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G47	511 018	6 194 470	52,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G48	510 973	6 194 477	51,6	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G49	510 940	6 194 480	51,1	1,0	1,0	1,0	90,0	"Green house mode"	2,0

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Project:

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SHADOW - Main Result

Calculation: SHADOW

...continued from previous page

No.	Y	X	Z	Width	Height	Elevation a.g.l.	Slope of window	Direction mode	Eye height (ZVI) a.g.l.
			[m]	[m]	[m]	[m]	[°]		[m]
G50	512 500	6 191 593	49,9	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G51	512 482	6 191 483	48,8	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G52	512 537	6 191 402	49,6	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G53	512 499	6 190 966	48,8	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G54	512 499	6 190 841	50,4	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G55	513 257	6 189 826	47,4	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G56	513 387	6 189 656	46,7	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G57	512 309	6 189 025	50,4	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G58	512 133	6 188 384	48,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0

Calculation Results

Shadow receptor

Shadow, expected values

No.	Shadow hours per year [h/year]	Avoided hours per year [h/year]
G01	12:01	
G02	16:17	
G03	17:45	
G04	19:47	
G05	15:29	
G06	14:59	
G07	16:08	
G08	17:02	
G09	15:28	
G10	17:12	
G11	19:04	
G12	2:48	
G13	8:16	
G14	16:02	
G15	22:39	
G16*	21:12	16:02
G17	20:53	
G18	29:48	
G19	22:48	
G20*	4:02	53:21
G21	3:44	
G22	0:00	
G23	0:00	
G24	0:00	
G25	0:00	
G26	6:02	
G27	6:54	
G28	7:07	
G29	7:25	
G30	7:46	
G31	8:11	
G32	7:05	
G33	6:52	
G34	6:36	
G35	6:43	
G36	15:11	
G37*	21:40	8:42
G38*	23:10	10:46
G39*	26:00	25:12
G40*	25:18	42:43
G41*	20:00	37:57
G42	7:00	
G43	7:14	
G44	7:26	
G45	7:30	
G46	7:32	
G47	7:35	

To be continued on next page...

SHADOW - Main Result

Calculation: SHADOW

...continued from previous page

Shadow, expected values

No.	Shadow hours per year [h/year]	Avoided hours per year [h/year]
G48	7:31	
G49	7:28	
G50	13:37	
G51	5:46	
G52	6:04	
G53	9:03	
G54	10:22	
G55	1:58	
G56	4:14	
G57	10:06	
G58	24:34	

* Receptors where shadow flicker is reduced by curtailment

Total amount of flickering on the shadow receptors caused by each WTG

No.	Name	Stopped due to flicker curtailment [h/year]	Expected [h/year]
E-VE01 Hypothetical	10000 200.0 !O! hub: 180,0 m (TOT: 280,0 m) (9)		19:38
E-VE02 Hypothetical	10000 200.0 !O! hub: 180,0 m (TOT: 280,0 m) (10)		32:19
E-VE03 Hypothetical	10000 200.0 !O! hub: 180,0 m (TOT: 280,0 m) (11)	50:07	3:58
E-VE04 Hypothetical	10000 200.0 !O! hub: 180,0 m (TOT: 280,0 m) (12)	93:13	0:24
E-VE05 Hypothetical	10000 200.0 !O! hub: 180,0 m (TOT: 280,0 m) (13)		10:08
E-VE06 Hypothetical	10000 200.0 !O! hub: 180,0 m (TOT: 280,0 m) (14)		15:13
E-VE07 Hypothetical	10000 200.0 !O! hub: 180,0 m (TOT: 280,0 m) (15)	137:10	3:46
E-VE08 Hypothetical	10000 200.0 !O! hub: 180,0 m (TOT: 280,0 m) (16)	185:49	13:49
E-VE09 Hypothetical	10000 200.0 !O! hub: 180,0 m (TOT: 280,0 m) (17)	110:51	4:45
E-VE10 Hypothetical	10000 200.0 !O! hub: 180,0 m (TOT: 280,0 m) (18)		6:57
E-VE11 Hypothetical	10000 200.0 !O! hub: 180,0 m (TOT: 280,0 m) (19)		3:54
E-VE12 Hypothetical	10000 200.0 !O! hub: 180,0 m (TOT: 280,0 m) (20)		3:32
E-VE13 Hypothetical	10000 200.0 !O! hub: 180,0 m (TOT: 280,0 m) (21)		2:02
E-VE14 Hypothetical	10000 200.0 !O! hub: 180,0 m (TOT: 280,0 m) (22)		1:01
E-VE15 Hypothetical	10000 200.0 !O! hub: 180,0 m (TOT: 280,0 m) (23)		14:11
E-VE16 Hypothetical	10000 200.0 !O! hub: 180,0 m (TOT: 280,0 m) (24)		21:51
E-VE17 Hypothetical	10000 200.0 !O! hub: 180,0 m (TOT: 280,0 m) (25)		18:20
E-VE18 Hypothetical	10000 200.0 !O! hub: 180,0 m (TOT: 280,0 m) (26)		8:52
E-VE19 Hypothetical	10000 200.0 !O! hub: 180,0 m (TOT: 280,0 m) (27)		0:00
E-VE20 Hypothetical	10000 200.0 !O! hub: 180,0 m (TOT: 280,0 m) (28)		7:37
E-VE21 Hypothetical	10000 200.0 !O! hub: 180,0 m (TOT: 280,0 m) (29)		0:00
E-VE22 Hypothetical	10000 200.0 !O! hub: 180,0 m (TOT: 280,0 m) (30)		0:00
E-VE23 Hypothetical	10000 200.0 !O! hub: 180,0 m (TOT: 280,0 m) (31)		0:00
E-VE24 Hypothetical	10000 200.0 !O! hub: 180,0 m (TOT: 280,0 m) (32)		0:00
E-VE25 Hypothetical	10000 200.0 !O! hub: 180,0 m (TOT: 280,0 m) (33)		0:00
E-VE26 Hypothetical	10000 200.0 !O! hub: 180,0 m (TOT: 280,0 m) (34)		40:47
E-VE27 Hypothetical	10000 200.0 !O! hub: 180,0 m (TOT: 280,0 m) (35)		17:59
N-VE01 Hypothetical	10000 200.0 !O! hub: 180,0 m (TOT: 280,0 m) (1)		2:02
N-VE02 Hypothetical	10000 200.0 !O! hub: 180,0 m (TOT: 280,0 m) (2)	54:15	27:44
N-VE03 Hypothetical	10000 200.0 !O! hub: 180,0 m (TOT: 280,0 m) (3)		0:00
N-VE04 Hypothetical	10000 200.0 !O! hub: 180,0 m (TOT: 280,0 m) (4)		18:34
N-VE05 Hypothetical	10000 200.0 !O! hub: 180,0 m (TOT: 280,0 m) (5)		28:03
N-VE06 Hypothetical	10000 200.0 !O! hub: 180,0 m (TOT: 280,0 m) (6)		19:22
N-VE07 Hypothetical	10000 200.0 !O! hub: 180,0 m (TOT: 280,0 m) (7)	213:26	33:38
N-VE08 Hypothetical	10000 200.0 !O! hub: 180,0 m (TOT: 280,0 m) (8)		48:31

Total times in Receptor wise and WTG wise tables can differ, as a WTG can lead to flicker at 2 or more receptors simultaneously and/or receptors may receive flicker from 2 or more WTGs simultaneously.

The calculation of the total expected values for a given receptor assumes a weighted average directional reduction for all WTGs contributing to shadow flicker within the same day. In the case where shadow flicker from different WTGs is not concurrent within the day, the total expected time at a given receptor may deviate marginally from the individual flicker time caused by each turbine separately.

**Prognozuojamas PŪV SUMINIS šėšėliavimo vertinimas
"1" alternatyva**

2024-11-21 17:48/4.1.254

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SHADOW - Main Result

Calculation: SHADOW

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	Y	X	Z	Row data/Description	WTG type		Type-generator	Power, rated [kW]	Rotor diameter [m]	Hub height [m]	Shadow data	
					Valid	Manufact.					Calculation distance [m]	RPM
			[m]									[RPM]
E-VE11	508 295	6 195 151	50,4	NORDEX N175/6.X 6...	Yes	NORDEX	N175/6.X-6 800	6 800	175,0	179,0	1 893	10,8
E-VE12	507 655	6 194 577	52,3	NORDEX N175/6.X 6...	Yes	NORDEX	N175/6.X-6 800	6 800	175,0	179,0	1 893	10,8
E-VE13	507 391	6 193 769	53,5	NORDEX N175/6.X 6...	Yes	NORDEX	N175/6.X-6 800	6 800	175,0	179,0	1 893	10,8
E-VE14	508 259	6 193 993	52,0	NORDEX N175/6.X 6...	Yes	NORDEX	N175/6.X-6 800	6 800	175,0	179,0	1 893	10,8
E-VE15	509 883	6 195 766	50,4	NORDEX N175/6.X 6...	Yes	NORDEX	N175/6.X-6 800	6 800	175,0	179,0	1 893	10,8
E-VE16	513 718	6 195 996	46,0	NORDEX N175/6.X 6...	Yes	NORDEX	N175/6.X-6 800	6 800	175,0	179,0	1 893	10,8
E-VE17	510 597	6 193 591	53,2	NORDEX N175/6.X 6...	Yes	NORDEX	N175/6.X-6 800	6 800	175,0	179,0	1 893	10,8
E-VE18	510 530	6 191 574	50,0	NORDEX N175/6.X 6...	Yes	NORDEX	N175/6.X-6 800	6 800	175,0	179,0	1 893	10,8
E-VE19	512 020	6 192 269	46,3	NORDEX N175/6.X 6...	Yes	NORDEX	N175/6.X-6 800	6 800	175,0	179,0	1 893	10,8
E-VE20	513 240	6 192 097	45,3	NORDEX N175/6.X 6...	Yes	NORDEX	N175/6.X-6 800	6 800	175,0	179,0	1 893	10,8
E-VE21	509 118	6 189 929	53,2	NORDEX N175/6.X 6...	Yes	NORDEX	N175/6.X-6 800	6 800	175,0	179,0	1 893	10,8
E-VE22	508 045	6 189 297	55,0	NORDEX N175/6.X 6...	Yes	NORDEX	N175/6.X-6 800	6 800	175,0	179,0	1 893	10,8
E-VE23	509 083	6 189 002	52,3	NORDEX N175/6.X 6...	Yes	NORDEX	N175/6.X-6 800	6 800	175,0	179,0	1 893	10,8
E-VE24	508 432	6 188 305	52,0	NORDEX N175/6.X 6...	Yes	NORDEX	N175/6.X-6 800	6 800	175,0	179,0	1 893	10,8
E-VE25	509 068	6 187 814	51,8	NORDEX N175/6.X 6...	Yes	NORDEX	N175/6.X-6 800	6 800	175,0	179,0	1 893	10,8
E-VE26	512 902	6 188 519	46,5	NORDEX N175/6.X 6...	Yes	NORDEX	N175/6.X-6 800	6 800	175,0	179,0	1 893	10,8
E-VE27	513 359	6 190 431	47,0	NORDEX N175/6.X 6...	Yes	NORDEX	N175/6.X-6 800	6 800	175,0	179,0	1 893	10,8
N-VE01	507 209	6 201 524	51,0	NORDEX N175/6.X 6...	Yes	NORDEX	N175/6.X-6 800	6 800	175,0	179,0	1 893	10,8
N-VE02	508 734	6 201 665	47,0	NORDEX N175/6.X 6...	Yes	NORDEX	N175/6.X-6 800	6 800	175,0	179,0	1 893	10,8
N-VE03	506 435	6 200 737	50,4	NORDEX N175/6.X 6...	Yes	NORDEX	N175/6.X-6 800	6 800	175,0	179,0	1 893	10,8
N-VE04	506 209	6 199 545	52,6	NORDEX N175/6.X 6...	Yes	NORDEX	N175/6.X-6 800	6 800	175,0	179,0	1 893	10,8
N-VE05	506 994	6 198 936	50,6	NORDEX N175/6.X 6...	Yes	NORDEX	N175/6.X-6 800	6 800	175,0	179,0	1 893	10,8
N-VE06	510 789	6 199 120	51,0	NORDEX N175/6.X 6...	Yes	NORDEX	N175/6.X-6 800	6 800	175,0	179,0	1 893	10,8
N-VE07	509 212	6 199 396	48,3	NORDEX N175/6.X 6...	Yes	NORDEX	N175/6.X-6 800	6 800	175,0	179,0	1 893	10,8
N-VE08	510 142	6 200 713	47,9	NORDEX N175/6.X 6...	Yes	NORDEX	N175/6.X-6 800	6 800	175,0	179,0	1 893	10,8
VE06	503 373	6 195 727	55,0	Hypotetic 8.0 8000 1...	No	Hypotetic	8.0-8 000	8 000	180,0	169,0	2 500	-
VE07	503 573	6 194 904	55,1	Hypotetic 8.0 8000 1...	No	Hypotetic	8.0-8 000	8 000	180,0	169,0	2 500	-
VE1	512 050	6 190 536	47,9	Hypotetic 8.0 8000 1...	No	Hypotetic	8.0-8 000	8 000	180,0	170,0	2 500	-
VE1	511 301	6 198 923	51,5	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	165,0	2 037	8,8
VE10	510 088	6 196 004	50,2	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	165,0	2 037	8,8
VE11	509 806	6 194 891	51,0	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	165,0	2 037	8,8
VE12	510 539	6 193 414	50,1	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	165,0	2 037	8,8
VE13	511 243	6 192 588	48,0	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	165,0	2 037	8,8
VE14	510 388	6 191 665	50,0	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	165,0	2 037	8,8
VE15	512 026	6 200 837	46,0	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	165,0	2 037	8,8
VE16	509 529	6 193 999	50,7	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	165,0	2 037	8,8
VE17	510 273	6 198 161	47,0	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	165,0	2 037	8,8
VE18	510 269	6 192 543	51,0	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	165,0	2 037	8,8
VE19	510 745	6 202 082	46,0	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	165,0	2 037	8,8
VE2	511 090	6 189 666	49,3	Hypotetic 8.0 8000 1...	No	Hypotetic	8.0-8 000	8 000	180,0	170,0	2 500	-
VE2	511 042	6 200 317	48,9	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	165,0	2 037	8,8
VE20	512 003	6 201 911	48,6	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	165,0	2 037	8,8
VE21	509 115	6 201 121	48,0	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	165,0	2 037	8,8
VE27	512 196	6 192 765	43,3	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	165,0	2 037	8,8
VE29	512 502	6 201 414	49,7	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	165,0	2 037	8,8
VE3	512 280	6 189 536	48,6	Hypotetic 8.0 8000 1...	No	Hypotetic	8.0-8 000	8 000	180,0	170,0	2 500	-
VE3	512 241	6 198 372	46,5	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	165,0	2 037	8,8
VE4	509 643	6 187 021	52,0	Hypotetic 8.0 8000 1...	No	Hypotetic	8.0-8 000	8 000	180,0	170,0	2 500	-
VE4	510 190	6 197 025	50,4	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	165,0	2 037	8,8
VE5	510 233	6 198 924	49,3	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	165,0	2 037	8,8
VE6	509 964	6 200 239	47,0	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	165,0	2 037	8,8
VE6	513 271	6 186 583	45,3	Hypotetic 8.0 8000 1...	No	Hypotetic	8.0-8 000	8 000	180,0	170,0	2 500	-
VE7	513 029	6 197 660	47,0	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	165,0	2 037	8,8
VE8	512 122	6 196 524	48,3	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	165,0	2 037	8,8
VE9	511 961	6 195 326	48,8	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	165,0	2 037	8,8

Shadow receptor-Input

No.	Y	X	Z	Width	Height	Elevation a.g.l.	Slope of window	Direction mode	Eye height (ZVI) a.g.l.
			[m]	[m]	[m]	[m]	[°]		[m]
G01	506 843	6 200 422	54,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G02	507 506	6 199 600	51,9	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G03	507 490	6 199 545	52,7	1,0	1,0	1,0	90,0	"Green house mode"	2,0

To be continued on next page...

UAB Eurostat 1 planuojamos ukines veiklos – vejo elektriniu irengimas Pasvalio r. sav., Pusaloto sen., Pagirniupiu k., Jaciunu k., Matkunu k., Deglenu k., Daukuciu vs., Jakuboniu k., Sermuksniu k., Mickaiciu k., Budininku k., Kidzioniu k., Ozkyciu k. ir Panevezio r. sav., Panevezio sen., Pazuku k., Eimuliskio k., Grippedziu k., Staciunu k.

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2024-11-21 17:48/4.1.254

SHADOW - Main Result

Calculation: SHADOW

...continued from previous page

No.	Y	X	Z	Width	Height	Elevation a.g.l.	Slope of window	Direction mode	Eye height (ZVI) a.g.l.
			[m]	[m]	[m]	[m]	[°]		[m]
G04	507 464	6 199 492	53,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G05	507 561	6 199 583	52,4	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G06	507 632	6 199 555	53,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G07	507 619	6 199 509	53,5	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G08	507 537	6 199 529	52,3	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G09	507 682	6 199 497	53,8	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G10	507 669	6 199 423	53,1	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G11	507 642	6 199 366	54,3	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G12	507 228	6 198 595	55,8	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G13	507 313	6 198 194	54,4	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G14	509 558	6 201 886	47,1	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G15	509 794	6 201 446	49,3	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G16	509 856	6 201 185	51,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G17	510 988	6 201 034	51,6	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G18	508 962	6 200 071	50,7	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G19	510 413	6 199 759	48,9	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G20	509 553	6 199 558	53,4	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G21	512 320	6 200 121	50,9	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G22	513 368	6 195 217	46,4	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G23	513 633	6 195 185	45,8	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G24	513 680	6 195 355	46,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G25	513 740	6 195 540	45,6	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G26	513 978	6 196 950	47,1	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G27	514 634	6 196 384	46,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G28	514 618	6 196 386	45,9	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G29	514 593	6 196 389	45,7	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G30	514 567	6 196 392	44,3	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G31	514 535	6 196 397	43,3	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G32	514 544	6 196 497	44,3	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G33	514 564	6 196 494	45,2	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G34	514 587	6 196 492	45,9	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G35	514 541	6 196 549	43,6	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G36	510 744	6 195 273	52,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G37	507 058	6 197 245	55,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G38	507 055	6 197 200	55,4	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G39	505 767	6 195 866	56,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G40	506 485	6 195 329	55,6	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G41	504 924	6 194 409	55,7	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G42	510 825	6 194 492	51,1	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G43	510 860	6 194 485	51,5	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G44	511 099	6 194 463	50,7	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G45	511 072	6 194 465	51,4	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G46	511 051	6 194 468	52,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G47	511 018	6 194 470	52,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G48	510 973	6 194 477	51,6	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G49	510 940	6 194 480	51,1	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G50	512 500	6 191 593	49,9	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G51	512 482	6 191 483	48,8	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G52	512 537	6 191 402	49,6	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G53	512 499	6 190 966	48,8	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G54	512 499	6 190 841	50,4	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G55	513 257	6 189 826	47,4	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G56	513 387	6 189 656	46,7	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G57	512 309	6 189 025	50,4	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G58	512 133	6 188 384	48,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0

Project:

UAB Eurostat 1 planuojamos ukines veiklos – vejo elektriniu irengimas Pasvalio r. sav.,
Pusaloto sen., Pagirnupiu k., Jaciunu k., Matkunu k., Deglenu k., Daukuciu vs.,
Jakuboniu k., Sermuksniu k., Mickaiciu k., Budininku k., Kidzioniu k., Ozkyciu k. ir
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Calculated:

2024-11-21 17:48/4.1.254

SHADOW - Main Result

Calculation: SHADOW

Calculation Results

Shadow receptor

Shadow, expected values

No. Shadow hours

per year

[h/year]

G01	26:48
G02	35:46
G03	38:38
G04	39:43
G05	31:44
G06	27:31
G07	32:21
G08	35:56
G09	28:14
G10	33:42
G11	35:42
G12	26:33
G13	22:26
G14	26:31
G15	36:25
G16	45:38
G17	35:52
G18	34:56
G19	33:11
G20	63:25
G21	8:18
G22	7:14
G23	10:11
G24	11:31
G25	12:15
G26	10:38
G27	5:23
G28	7:05
G29	6:59
G30	6:53
G31	6:49
G32	8:26
G33	8:36
G34	8:47
G35	9:30
G36	27:45
G37	54:27
G38	51:04
G39	41:11
G40	51:02
G41	49:39
G42	26:43
G43	23:35
G44	15:24
G45	14:33
G46	14:50
G47	15:23
G48	16:11
G49	17:19
G50	15:31
G51	9:47
G52	10:47
G53	19:26
G54	26:18
G55	18:40
G56	17:25
G57	19:47
G58	19:28

SHADOW - Main Result

Calculation: SHADOW

Total amount of flickering on the shadow receptors caused by each WTG

No.	Name	Expected [h/year]
2	Siemens Gamesa SG 6.0-170 6600 170.0 !O! hub: 169,0 m (TOT: 254,0 m) (1)	14:08
3	Siemens Gamesa SG 6.0-170 6600 170.0 !O! hub: 169,0 m (TOT: 254,0 m) (2)	0:36
4	Siemens Gamesa SG 6.0-170 6600 170.0 !O! hub: 169,0 m (TOT: 254,0 m) (3)	0:00
5	Siemens Gamesa SG 6.0-170 6600 170.0 !O! hub: 169,0 m (TOT: 254,0 m) (4)	27:01
26	ENERCON E-175 EP5 6000 175.0 !O! hub: 182,5 m (TOT: 270,0 m) (47)	0:00
27	ENERCON E-175 EP5 6000 175.0 !O! hub: 182,5 m (TOT: 270,0 m) (48)	0:00
28	ENERCON E-175 EP5 6000 175.0 !O! hub: 182,5 m (TOT: 270,0 m) (49)	0:00
29	ENERCON E-175 EP5 6000 175.0 !O! hub: 182,5 m (TOT: 270,0 m) (50)	0:00
30	ENERCON E-175 EP5 6000 175.0 !O! hub: 182,5 m (TOT: 270,0 m) (51)	0:00
31	ENERCON E-175 EP5 6000 175.0 !O! hub: 182,5 m (TOT: 270,0 m) (52)	0:00
32	ENERCON E-175 EP5 6000 175.0 !O! hub: 182,5 m (TOT: 270,0 m) (53)	2:39
32	Hypotetic 8.0 8000 180.0 !-! hub: 170,0 m (TOT: 260,0 m) (44)	9:01
33	ENERCON E-175 EP5 6000 175.0 !O! hub: 182,5 m (TOT: 270,0 m) (54)	0:00
33	Hypotetic 8.0 8000 180.0 !-! hub: 170,0 m (TOT: 260,0 m) (45)	33:36
50	Hypotetic 8.0 8000 180.0 !-! hub: 170,0 m (TOT: 260,0 m) (43)	13:18
52	Hypotetic 8.0 8000 180.0 !-! hub: 170,0 m (TOT: 260,0 m) (38)	11:34
53	Hypotetic 8.0 8000 180.0 !-! hub: 170,0 m (TOT: 260,0 m) (39)	23:46
54	Hypotetic 8.0 8000 180.0 !-! hub: 170,0 m (TOT: 260,0 m) (40)	2:47
55	Hypotetic 8.0 8000 180.0 !-! hub: 170,0 m (TOT: 260,0 m) (41)	22:04
56	Hypotetic 8.0 8000 180.0 !-! hub: 170,0 m (TOT: 260,0 m) (42)	48:30
E-VE01	NORDEX N175/6.X 6800 175.0 !-! hub: 179,0 m (TOT: 266,5 m) (9)	13:08
E-VE02	NORDEX N175/6.X 6800 175.0 !-! hub: 179,0 m (TOT: 266,5 m) (10)	25:00
E-VE03	NORDEX N175/6.X 6800 175.0 !-! hub: 179,0 m (TOT: 266,5 m) (11)	10:15
E-VE04	NORDEX N175/6.X 6800 175.0 !-! hub: 179,0 m (TOT: 266,5 m) (12)	16:30
E-VE05	NORDEX N175/6.X 6800 175.0 !-! hub: 179,0 m (TOT: 266,5 m) (13)	5:56
E-VE06	NORDEX N175/6.X 6800 175.0 !-! hub: 179,0 m (TOT: 266,5 m) (14)	11:47
E-VE07	NORDEX N175/6.X 6800 175.0 !-! hub: 179,0 m (TOT: 266,5 m) (15)	31:07
E-VE08	NORDEX N175/6.X 6800 175.0 !-! hub: 179,0 m (TOT: 266,5 m) (16)	35:45
E-VE09	NORDEX N175/6.X 6800 175.0 !-! hub: 179,0 m (TOT: 266,5 m) (17)	18:16
E-VE10	NORDEX N175/6.X 6800 175.0 !-! hub: 179,0 m (TOT: 266,5 m) (18)	5:19
E-VE11	NORDEX N175/6.X 6800 175.0 !-! hub: 179,0 m (TOT: 266,5 m) (19)	1:45
E-VE12	NORDEX N175/6.X 6800 175.0 !-! hub: 179,0 m (TOT: 266,5 m) (20)	2:38
E-VE13	NORDEX N175/6.X 6800 175.0 !-! hub: 179,0 m (TOT: 266,5 m) (21)	1:40
E-VE14	NORDEX N175/6.X 6800 175.0 !-! hub: 179,0 m (TOT: 266,5 m) (22)	0:00
E-VE15	NORDEX N175/6.X 6800 175.0 !-! hub: 179,0 m (TOT: 266,5 m) (23)	11:26
E-VE16	NORDEX N175/6.X 6800 175.0 !-! hub: 179,0 m (TOT: 266,5 m) (24)	18:19
E-VE17	NORDEX N175/6.X 6800 175.0 !-! hub: 179,0 m (TOT: 266,5 m) (25)	16:33
E-VE18	NORDEX N175/6.X 6800 175.0 !-! hub: 179,0 m (TOT: 266,5 m) (26)	0:00
E-VE19	NORDEX N175/6.X 6800 175.0 !-! hub: 179,0 m (TOT: 266,5 m) (27)	0:00
E-VE20	NORDEX N175/6.X 6800 175.0 !-! hub: 179,0 m (TOT: 266,5 m) (28)	4:34
E-VE21	NORDEX N175/6.X 6800 175.0 !-! hub: 179,0 m (TOT: 266,5 m) (29)	0:00
E-VE22	NORDEX N175/6.X 6800 175.0 !-! hub: 179,0 m (TOT: 266,5 m) (30)	0:00
E-VE23	NORDEX N175/6.X 6800 175.0 !-! hub: 179,0 m (TOT: 266,5 m) (31)	0:00
E-VE24	NORDEX N175/6.X 6800 175.0 !-! hub: 179,0 m (TOT: 266,5 m) (32)	0:00
E-VE25	NORDEX N175/6.X 6800 175.0 !-! hub: 179,0 m (TOT: 266,5 m) (33)	0:00
E-VE26	NORDEX N175/6.X 6800 175.0 !-! hub: 179,0 m (TOT: 266,5 m) (34)	31:12
E-VE27	NORDEX N175/6.X 6800 175.0 !-! hub: 179,0 m (TOT: 266,5 m) (35)	14:44
N-VE01	NORDEX N175/6.X 6800 175.0 !-! hub: 179,0 m (TOT: 266,5 m) (1)	0:00
N-VE02	NORDEX N175/6.X 6800 175.0 !-! hub: 179,0 m (TOT: 266,5 m) (2)	28:39
N-VE03	NORDEX N175/6.X 6800 175.0 !-! hub: 179,0 m (TOT: 266,5 m) (3)	0:00
N-VE04	NORDEX N175/6.X 6800 175.0 !-! hub: 179,0 m (TOT: 266,5 m) (4)	15:01
N-VE05	NORDEX N175/6.X 6800 175.0 !-! hub: 179,0 m (TOT: 266,5 m) (5)	22:50
N-VE06	NORDEX N175/6.X 6800 175.0 !-! hub: 179,0 m (TOT: 266,5 m) (6)	13:39
N-VE07	NORDEX N175/6.X 6800 175.0 !-! hub: 179,0 m (TOT: 266,5 m) (7)	60:54
N-VE08	NORDEX N175/6.X 6800 175.0 !-! hub: 179,0 m (TOT: 266,5 m) (8)	38:37
VE06	Hypotetic 8.0 8000 180.0 !-! hub: 169,0 m (TOT: 259,0 m) (5)	1:09
VE07	Hypotetic 8.0 8000 180.0 !-! hub: 169,0 m (TOT: 259,0 m) (6)	6:54
VE1	Hypotetic 8.0 8000 180.0 !-! hub: 170,0 m (TOT: 260,0 m) (7)	49:12
VE1	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (21)	6:26
VE10	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (15)	0:00
VE11	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (14)	20:10
VE12	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (13)	9:41
VE13	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (26)	2:08
VE14	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (12)	0:00
VE15	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (24)	10:53

To be continued on next page...

UAB Eurostat 1 planuojamos ukinės veiklos – vejo elektriniu irengimas Pasvalio r. sav., Pusaloto sen., Pagirnupiu k., Jaciunu k., Matkunu k., Deglenu k., Daukuciu vs., Jakuboniu k., Sermuksniu k., Mickaiciu k., Budininku k., Kidzioniu k., Ozkyciu k. ir Panevezio r. sav., Panevezio sen., Pazuku k., Eimuliskio k., Grikpedziu k., Staciunu k.

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2024-11-21 17:48/4.1.254

SHADOW - Main Result

Calculation: SHADOW

...continued from previous page

No.	Name	Expected [h/year]
VE16	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (27)	5:31
VE17	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (28)	1:34
VE18	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (25)	0:00
VE19	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (31)	13:43
VE2	Hypotetic 8.0 8000 180.0 !-! hub: 170,0 m (TOT: 260,0 m) (8)	18:38
VE2	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (32)	22:16
VE20	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (30)	0:00
VE21	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (29)	29:16
VE27	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (55)	1:11
VE29	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (56)	3:24
VE3	Hypotetic 8.0 8000 180.0 !-! hub: 170,0 m (TOT: 260,0 m) (9)	11:32
VE3	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (20)	0:00
VE4	Hypotetic 8.0 8000 180.0 !-! hub: 170,0 m (TOT: 260,0 m) (11)	0:00
VE4	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (19)	0:00
VE5	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (22)	11:49
VE6	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (23)	15:09
VE6	Hypotetic 8.0 8000 180.0 !-! hub: 170,0 m (TOT: 260,0 m) (10)	1:04
VE7	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (17)	5:00
VE8	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (18)	11:21
VE9	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (16)	17:13

Total times in Receptor wise and WTG wise tables can differ, as a WTG can lead to flicker at 2 or more receptors simultaneously and/or receptors may receive flicker from 2 or more WTGs simultaneously.

The calculation of the total expected values for a given receptor assumes a weighted average directional reduction for all WTGs contributing to shadow flicker within the same day. In the case where shadow flicker from different WTGs is not concurrent within the day, the total expected time at a given receptor may deviate marginally from the individual flicker time caused by each turbine separately.

Project:

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Licensed user:

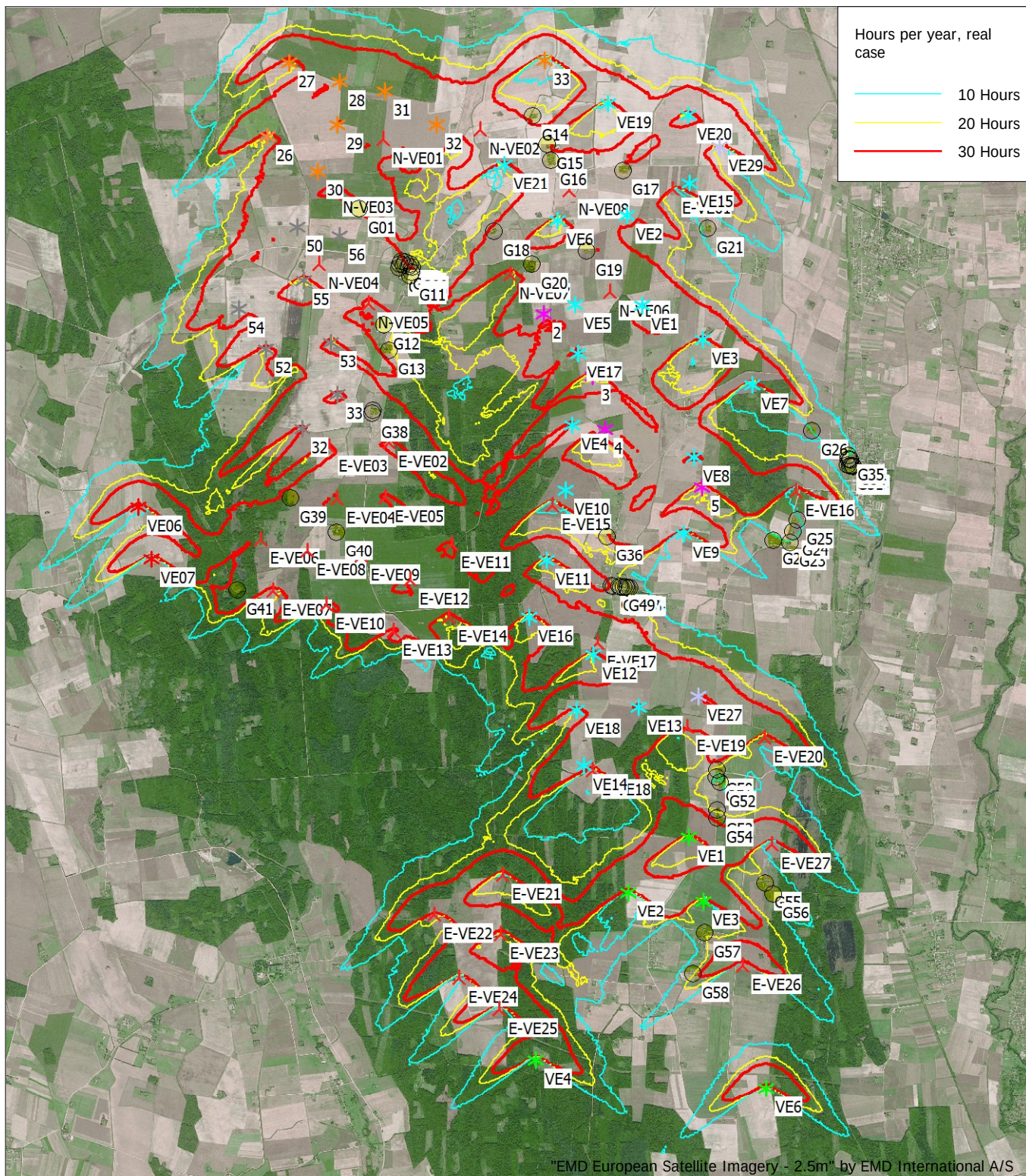
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Calculated:

2024-11-21 17:48/4.1.254

SHADOW - Map

Calculation: SHADOW



Map: windPRO European Satellite Imagery - 2.5 m , Print scale 1:90 000, Map center Lithuanian TM LKS94-LKS94 (LT) East: 509 712 North: 6 194 753
▲ New WTG ★ Existing WTG ● Shadow receptor
Flicker map level: Project Wizard Elevation Data Grid (SRTM: Shuttle DTM 1 arc-second)
Time step: 4 minutes, Day step: 14 days, Map resolution: 30 m, Visibility resolution: 15 m, Eye height: 1,5 m

**PŪV SUMINIS šėšėliavimo
mažinimas (shadow shut-down)
"1" alternatyva**

Project:

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Calculated:

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SHADOW - Main Result

Calculation: SHADOW

Assumptions for shadow calculations

Maximum distance for influence

Calculate only when more than 20 % of sun is covered by the blade

Please look in WTG table

Minimum sun height over horizon for influence

3 °

Day step for calculation

1 days

Time step for calculation

1 minutes

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1,41	2,36	4,03	5,55	8,35	8,36	8,16	7,72	5,06	3,23	1,33	0,98

Operational hours are calculated from WTGs in calculation and wind distribution:

Site data: ATLAS; 12 sectors; Radius: 43 000 m (3)

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
966	512	237	292	585	640	774	1 026	1 200	1 016	767	552	8 567

Monthly aggregation of real case reduction

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

Flicker curtailment by stopping specific turbines

A ZVI (Zones of Visual Influence) calculation is performed before flicker calculation so non visible WTG do not contribute to calculated flicker values. A WTG will be visible if it is visible from any part of the receiver window. The ZVI calculation is based on the following assumptions:

DHM: Project Wizard Elevation Data Grid (SRTM: Shuttle DTM 1 arc-second)

Receptor grid resolution: 1,0 m

Topographic shadow included in calculation

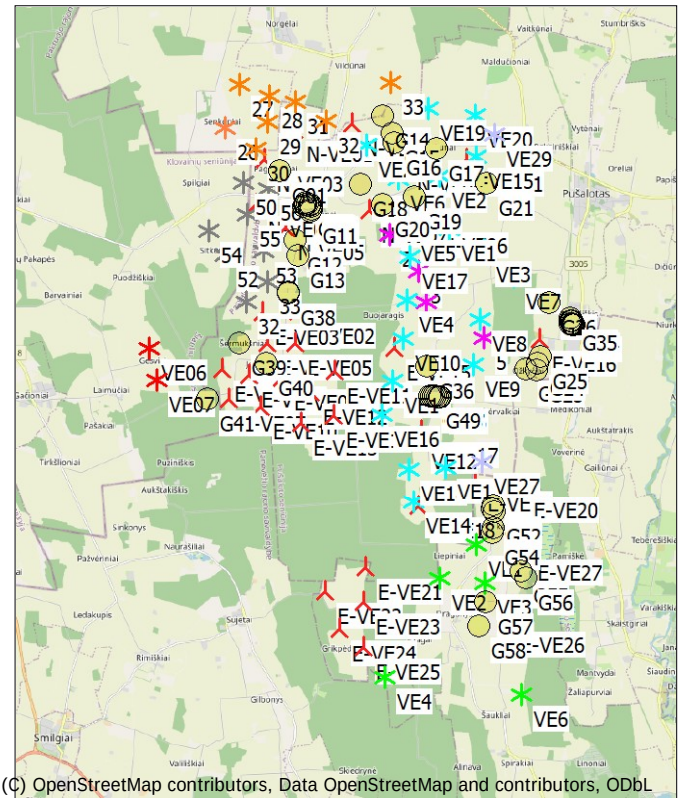
All coordinates are in

Lithuanian TM LKS94-LKS94 (LT)

WTGs

	Y	X	Z	Row data/Description	WTG type			Power, rated [kW]	Rotor diameter [m]	Hub height [m]	Shadow data	
					Valid	Manufact.	Type-generator				Calculation distance [m]	RPM
												[RPM]
2	509 738	6 198 776	48,0	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 600	6 600	170,0	169,0	2 037	8,8
3	510 515	6 197 797	51,2	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 600	6 600	170,0	169,0	2 037	8,8
4	510 709	6 196 958	48,6	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 600	6 600	170,0	169,0	2 037	8,8
5	512 239	6 196 056	46,0	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 600	6 600	170,0	169,0	2 037	8,8
26	505 388	6 201 560	51,3	ENERCON E-175 EP5 ...	Yes	ENERCON	E-175 EP5-6 000	6 000	175,0	182,5	1 735	-
27	505 734	6 202 721	51,9	ENERCON E-175 EP5 ...	Yes	ENERCON	E-175 EP5-6 000	6 000	175,0	182,5	1 735	-
28	506 531	6 202 422	50,0	ENERCON E-175 EP5 ...	Yes	ENERCON	E-175 EP5-6 000	6 000	175,0	182,5	1 735	-
29	506 492	6 201 745	49,9	ENERCON E-175 EP5 ...	Yes	ENERCON	E-175 EP5-6 000	6 000	175,0	182,5	1 735	-
30	506 188	6 201 006	51,7	ENERCON E-175 EP5 ...	Yes	ENERCON	E-175 EP5-6 000	6 000	175,0	182,5	1 735	-
31	507 234	6 202 266	51,5	ENERCON E-175 EP5 ...	Yes	ENERCON	E-175 EP5-6 000	6 000	175,0	182,5	1 735	-
32	508 050	6 201 749	49,0	ENERCON E-175 EP5 ...	Yes	ENERCON	E-175 EP5-6 000	6 000	175,0	182,5	1 735	-
32	505 943	6 196 959	51,3	Hypotetic 8.0 8000 1...	No	Hypotetic	8.0-8 000	8 000	180,0	170,0	2 500	-
33	509 743	6 202 761	45,3	ENERCON E-175 EP5 ...	Yes	ENERCON	E-175 EP5-6 000	6 000	175,0	182,5	1 735	-
33	506 501	6 197 500	52,2	Hypotetic 8.0 8000 1...	No	Hypotetic	8.0-8 000	8 000	180,0	170,0	2 500	-
50	505 860	6 200 126	53,8	Hypotetic 8.0 8000 1...	No	Hypotetic	8.0-8 000	8 000	180,0	170,0	2 500	-
52	505 377	6 198 220	53,0	Hypotetic 8.0 8000 1...	No	Hypotetic	8.0-8 000	8 000	180,0	170,0	2 500	-
53	506 394	6 198 319	53,1	Hypotetic 8.0 8000 1...	No	Hypotetic	8.0-8 000	8 000	180,0	170,0	2 500	-
54	504 944	6 198 838	51,4	Hypotetic 8.0 8000 1...	No	Hypotetic	8.0-8 000	8 000	180,0	170,0	2 500	-
55	505 959	6 199 299	51,4	Hypotetic 8.0 8000 1...	No	Hypotetic	8.0-8 000	8 000	180,0	170,0	2 500	-
56	506 528	6 199 986	49,3	Hypotetic 8.0 8000 1...	No	Hypotetic	8.0-8 000	8 000	180,0	170,0	2 500	-
E-VE01	511 774	6 200 739	47,5	NORDEX N175/6.X 6...	Yes	NORDEX	N175/6.X-6 800	6 800	175,0	179,0	1 893	10,8
E-VE02	507 315	6 196 732	53,0	NORDEX N175/6.X 6...	Yes	NORDEX	N175/6.X-6 800	6 800	175,0	179,0	1 893	10,8
E-VE03	506 375	6 196 675	54,7	NORDEX N175/6.X 6...	Yes	NORDEX	N175/6.X-6 800	6 800	175,0	179,0	1 893	10,8
E-VE04	506 501	6 195 859	52,0	NORDEX N175/6.X 6...	Yes	NORDEX	N175/6.X-6 800	6 800	175,0	179,0	1 893	10,8
E-VE05	507 253	6 195 881	52,2	NORDEX N175/6.X 6...	Yes	NORDEX	N175/6.X-6 800	6 800	175,0	179,0	1 893	10,8
E-VE06	505 294	6 195 211	55,3	NORDEX N175/6.X 6...	Yes	NORDEX	N175/6.X-6 800	6 800	175,0	179,0	1 893	10,8
E-VE07	505 491	6 194 401	54,0	NORDEX N175/6.X 6...	Yes	NORDEX	N175/6.X-6 800	6 800	175,0	179,0	1 893	10,8

To be continued on next page...



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Scale 1:200 000

New WTG

Existing WTG

Shadow receptor

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SHADOW - Main Result

Calculation: SHADOW

...continued from previous page

	Y	X	Z	Row data/Description	WTG type		Type-generator	Power, rated [kW]	Rotor diameter [m]	Hub height [m]	Shadow data	
					Valid	Manufact.					Calculation distance [m]	RPM
			[m]									[RPM]
E-VE08	506 035	6 195 026	53,7	NORDEX N175/6.X 6...	Yes	NORDEX	N175/6.X-6 800	6 800	175,0	179,0	1 893	10,8
E-VE09	506 884	6 194 962	53,3	NORDEX N175/6.X 6...	Yes	NORDEX	N175/6.X-6 800	6 800	175,0	179,0	1 893	10,8
E-VE10	506 331	6 194 190	54,0	NORDEX N175/6.X 6...	Yes	NORDEX	N175/6.X-6 800	6 800	175,0	179,0	1 893	10,8
E-VE11	508 295	6 195 151	50,4	NORDEX N175/6.X 6...	Yes	NORDEX	N175/6.X-6 800	6 800	175,0	179,0	1 893	10,8
E-VE12	507 655	6 194 577	52,3	NORDEX N175/6.X 6...	Yes	NORDEX	N175/6.X-6 800	6 800	175,0	179,0	1 893	10,8
E-VE13	507 391	6 193 769	53,5	NORDEX N175/6.X 6...	Yes	NORDEX	N175/6.X-6 800	6 800	175,0	179,0	1 893	10,8
E-VE14	508 259	6 193 993	52,0	NORDEX N175/6.X 6...	Yes	NORDEX	N175/6.X-6 800	6 800	175,0	179,0	1 893	10,8
E-VE15	509 883	6 195 766	50,4	NORDEX N175/6.X 6...	Yes	NORDEX	N175/6.X-6 800	6 800	175,0	179,0	1 893	10,8
E-VE16	513 718	6 195 996	46,0	NORDEX N175/6.X 6...	Yes	NORDEX	N175/6.X-6 800	6 800	175,0	179,0	1 893	10,8
E-VE17	510 597	6 193 591	53,2	NORDEX N175/6.X 6...	Yes	NORDEX	N175/6.X-6 800	6 800	175,0	179,0	1 893	10,8
E-VE18	510 530	6 191 574	50,0	NORDEX N175/6.X 6...	Yes	NORDEX	N175/6.X-6 800	6 800	175,0	179,0	1 893	10,8
E-VE19	512 020	6 192 269	46,3	NORDEX N175/6.X 6...	Yes	NORDEX	N175/6.X-6 800	6 800	175,0	179,0	1 893	10,8
E-VE20	513 240	6 192 097	45,3	NORDEX N175/6.X 6...	Yes	NORDEX	N175/6.X-6 800	6 800	175,0	179,0	1 893	10,8
E-VE21	509 118	6 189 929	53,2	NORDEX N175/6.X 6...	Yes	NORDEX	N175/6.X-6 800	6 800	175,0	179,0	1 893	10,8
E-VE22	508 045	6 189 297	55,0	NORDEX N175/6.X 6...	Yes	NORDEX	N175/6.X-6 800	6 800	175,0	179,0	1 893	10,8
E-VE23	509 083	6 189 002	52,3	NORDEX N175/6.X 6...	Yes	NORDEX	N175/6.X-6 800	6 800	175,0	179,0	1 893	10,8
E-VE24	508 432	6 188 305	52,0	NORDEX N175/6.X 6...	Yes	NORDEX	N175/6.X-6 800	6 800	175,0	179,0	1 893	10,8
E-VE25	509 068	6 187 814	51,8	NORDEX N175/6.X 6...	Yes	NORDEX	N175/6.X-6 800	6 800	175,0	179,0	1 893	10,8
E-VE26	512 902	6 188 519	46,5	NORDEX N175/6.X 6...	Yes	NORDEX	N175/6.X-6 800	6 800	175,0	179,0	1 893	10,8
E-VE27	513 359	6 190 431	47,0	NORDEX N175/6.X 6...	Yes	NORDEX	N175/6.X-6 800	6 800	175,0	179,0	1 893	10,8
N-VE01	507 209	6 201 524	51,0	NORDEX N175/6.X 6...	Yes	NORDEX	N175/6.X-6 800	6 800	175,0	179,0	1 893	10,8
N-VE02	508 734	6 201 665	47,0	NORDEX N175/6.X 6...	Yes	NORDEX	N175/6.X-6 800	6 800	175,0	179,0	1 893	10,8
N-VE03	506 435	6 200 737	50,4	NORDEX N175/6.X 6...	Yes	NORDEX	N175/6.X-6 800	6 800	175,0	179,0	1 893	10,8
N-VE04	506 209	6 199 545	52,6	NORDEX N175/6.X 6...	Yes	NORDEX	N175/6.X-6 800	6 800	175,0	179,0	1 893	10,8
N-VE05	506 994	6 198 936	50,6	NORDEX N175/6.X 6...	Yes	NORDEX	N175/6.X-6 800	6 800	175,0	179,0	1 893	10,8
N-VE06	510 789	6 199 120	51,0	NORDEX N175/6.X 6...	Yes	NORDEX	N175/6.X-6 800	6 800	175,0	179,0	1 893	10,8
N-VE07	509 212	6 199 396	48,3	NORDEX N175/6.X 6...	Yes	NORDEX	N175/6.X-6 800	6 800	175,0	179,0	1 893	10,8
N-VE08	510 142	6 200 713	47,9	NORDEX N175/6.X 6...	Yes	NORDEX	N175/6.X-6 800	6 800	175,0	179,0	1 893	10,8
VE06	503 373	6 195 727	55,0	Hypotetic 8.0 8000 1...	No	Hypotetic	8.0-8 000	8 000	180,0	169,0	2 500	-
VE07	503 573	6 194 904	55,1	Hypotetic 8.0 8000 1...	No	Hypotetic	8.0-8 000	8 000	180,0	169,0	2 500	-
VE1	512 050	6 190 536	47,9	Hypotetic 8.0 8000 1...	No	Hypotetic	8.0-8 000	8 000	180,0	170,0	2 500	-
VE1	511 301	6 198 923	51,5	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	165,0	2 037	8,8
VE10	510 088	6 196 004	50,2	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	165,0	2 037	8,8
VE11	509 806	6 194 891	51,0	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	165,0	2 037	8,8
VE12	510 539	6 193 414	50,1	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	165,0	2 037	8,8
VE13	511 243	6 192 588	48,0	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	165,0	2 037	8,8
VE14	510 388	6 191 665	50,0	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	165,0	2 037	8,8
VE15	512 026	6 200 837	46,0	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	165,0	2 037	8,8
VE16	509 529	6 193 999	50,7	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	165,0	2 037	8,8
VE17	510 273	6 198 161	47,0	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	165,0	2 037	8,8
VE18	510 269	6 192 543	51,0	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	165,0	2 037	8,8
VE19	510 745	6 202 082	46,0	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	165,0	2 037	8,8
VE2	511 090	6 189 666	49,3	Hypotetic 8.0 8000 1...	No	Hypotetic	8.0-8 000	8 000	180,0	170,0	2 500	-
VE2	511 042	6 200 317	48,9	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	165,0	2 037	8,8
VE20	512 003	6 201 911	48,6	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	165,0	2 037	8,8
VE21	509 115	6 201 121	48,0	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	165,0	2 037	8,8
VE27	512 196	6 192 765	43,3	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	165,0	2 037	8,8
VE29	512 502	6 201 414	49,7	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	165,0	2 037	8,8
VE3	512 280	6 189 536	48,6	Hypotetic 8.0 8000 1...	No	Hypotetic	8.0-8 000	8 000	180,0	170,0	2 500	-
VE3	512 241	6 198 372	46,5	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	165,0	2 037	8,8
VE4	509 643	6 187 021	52,0	Hypotetic 8.0 8000 1...	No	Hypotetic	8.0-8 000	8 000	180,0	170,0	2 500	-
VE4	510 190	6 197 025	50,4	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	165,0	2 037	8,8
VE5	510 233	6 198 924	49,3	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	165,0	2 037	8,8
VE6	509 964	6 200 239	47,0	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	165,0	2 037	8,8
VE6	513 271	6 186 583	45,3	Hypotetic 8.0 8000 1...	No	Hypotetic	8.0-8 000	8 000	180,0	170,0	2 500	-
VE7	513 029	6 197 660	47,0	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	165,0	2 037	8,8
VE8	512 122	6 196 524	48,3	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	165,0	2 037	8,8
VE9	511 961	6 195 326	48,8	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	165,0	2 037	8,8

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2024-11-22 13:23/4.1.254

SHADOW - Main Result

Calculation: SHADOW

Shadow receptor-Input

No.	Y	X	Z	Width	Height	Elevation a.g.l.	Slope of window	Direction mode	Eye height (ZVI) a.g.l.
			[m]	[m]	[m]	[m]	[°]		[m]
G01	506 843	6 200 422	54,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G02	507 506	6 199 600	51,9	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G03	507 490	6 199 545	52,7	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G04	507 464	6 199 492	53,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G05	507 561	6 199 583	52,4	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G06	507 632	6 199 555	53,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G07	507 619	6 199 509	53,5	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G08	507 537	6 199 529	52,3	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G09	507 682	6 199 497	53,8	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G10	507 669	6 199 423	53,1	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G11	507 642	6 199 366	54,3	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G12	507 228	6 198 595	55,8	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G13	507 313	6 198 194	54,4	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G14	509 558	6 201 886	47,1	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G15	509 794	6 201 446	49,3	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G16	509 856	6 201 185	51,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G17	510 988	6 201 034	51,6	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G18	508 962	6 200 071	50,7	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G19	510 413	6 199 759	48,9	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G20	509 553	6 199 558	53,4	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G21	512 320	6 200 121	50,9	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G22	513 368	6 195 217	46,4	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G23	513 633	6 195 185	45,8	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G24	513 680	6 195 355	46,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G25	513 740	6 195 540	45,6	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G26	513 978	6 196 950	47,1	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G27	514 634	6 196 384	46,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G28	514 618	6 196 386	45,9	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G29	514 593	6 196 389	45,7	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G30	514 567	6 196 392	44,3	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G31	514 535	6 196 397	43,3	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G32	514 544	6 196 497	44,3	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G33	514 564	6 196 494	45,2	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G34	514 587	6 196 492	45,9	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G35	514 541	6 196 549	43,6	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G36	510 744	6 195 273	52,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G37	507 058	6 197 245	55,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G38	507 055	6 197 200	55,4	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G39	505 767	6 195 866	56,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G40	506 485	6 195 329	55,6	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G41	504 924	6 194 409	55,7	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G42	510 825	6 194 492	51,1	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G43	510 860	6 194 485	51,5	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G44	511 099	6 194 463	50,7	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G45	511 072	6 194 465	51,4	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G46	511 051	6 194 468	52,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G47	511 018	6 194 470	52,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G48	510 973	6 194 477	51,6	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G49	510 940	6 194 480	51,1	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G50	512 500	6 191 593	49,9	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G51	512 482	6 191 483	48,8	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G52	512 537	6 191 402	49,6	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G53	512 499	6 190 966	48,8	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G54	512 499	6 190 841	50,4	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G55	513 257	6 189 826	47,4	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G56	513 387	6 189 656	46,7	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G57	512 309	6 189 025	50,4	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G58	512 133	6 188 384	48,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0

Project:

UAB Eurostat 1 planuojamos ukines veiklos – vejo elektriniu irengimas Pasvalio r. sav., Pusaloto sen., Pagirnapiu k., Jaciunu k., Matkunu k., Deglenu k., Daukuciu vs., Jakuboniu k., Sermuksniu k., Mickaiciu k., Budininku k., Kidzioniu k., Ozkyciu k. ir Panevezio r. sav., Panevezio sen., Pazuku k., Eimuliskio k., Grippedziu k., Staciunu k.

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Calculated:

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SHADOW - Main Result

Calculation: SHADOW

Calculation Results

Shadow receptor

No.	Shadow, expected values	
	Shadow hours per year [h/year]	Avoided hours per year [h/year]
G01	26:48	
G02*	26:30	9:15
G03*	27:45	10:53
G04*	28:07	11:36
G05*	24:26	7:18
G06*	22:19	5:11
G07*	26:38	5:42
G08*	27:11	8:44
G09*	23:17	4:57
G10*	27:45	5:56
G11*	29:16	6:26
G12	26:33	
G13	22:26	
G14*	23:37	2:54
G15*	27:51	8:33
G16*	29:20	16:18
G17*	28:06	7:46
G18*	24:33	10:22
G19*	28:27	4:44
G20*	22:41	40:44
G21	8:18	
G22	7:14	
G23	10:11	
G24	11:31	
G25	12:15	
G26	10:38	
G27	5:23	
G28	7:05	
G29	6:59	
G30	6:53	
G31	6:49	
G32	8:26	
G33	8:36	
G34	8:47	
G35	9:30	
G36	27:45	
G37*	31:59	22:28
G38*	29:51	21:13
G39*	27:49	13:21
G40*	28:28	22:33
G41*	21:06	28:32
G42	26:43	
G43	23:35	
G44	15:24	
G45	14:33	
G46	14:50	
G47	15:23	
G48	16:11	
G49	17:19	
G50	15:31	
G51	9:47	
G52	10:47	
G53	19:26	
G54	26:18	
G55	18:40	
G56	17:25	
G57	19:47	
G58	19:28	

* Receptors where shadow flicker is reduced by curtailment

UAB Eurostat 1 planuojamos ukinės veiklos – vejo elektriniu irengimas Pasvalio r. sav., Pusaloto sen., Pagirnupių k., Jaciunu k., Matkunu k., Deglenu k., Daukuciu vs., Jakubonių k., Sermuksnių k., Mickaiciu k., Budininku k., Kidzionių k., Ozkyciu k. ir Panevezio r. sav., Panevezio sen., Pazuku k., Eimuliskio k., Grikpedzių k., Staciunu k.

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SHADOW - Main Result

Calculation: SHADOW

Total amount of flickering on the shadow receptors caused by each WTG

No.	Name	Stopped due to flicker curtailment [h/year]	Expected [h/year]
2	Siemens Gamesa SG 6.0-170 6600 170.0 !O! hub: 169,0 m (TOT: 254,0 m) (1)		14:08
3	Siemens Gamesa SG 6.0-170 6600 170.0 !O! hub: 169,0 m (TOT: 254,0 m) (2)		0:36
4	Siemens Gamesa SG 6.0-170 6600 170.0 !O! hub: 169,0 m (TOT: 254,0 m) (3)		0:00
5	Siemens Gamesa SG 6.0-170 6600 170.0 !O! hub: 169,0 m (TOT: 254,0 m) (4)		27:01
26	ENERCON E-175 EP5 6000 175.0 !O! hub: 182,5 m (TOT: 270,0 m) (47)		0:00
27	ENERCON E-175 EP5 6000 175.0 !O! hub: 182,5 m (TOT: 270,0 m) (48)		0:00
28	ENERCON E-175 EP5 6000 175.0 !O! hub: 182,5 m (TOT: 270,0 m) (49)		0:00
29	ENERCON E-175 EP5 6000 175.0 !O! hub: 182,5 m (TOT: 270,0 m) (50)		0:00
30	ENERCON E-175 EP5 6000 175.0 !O! hub: 182,5 m (TOT: 270,0 m) (51)		0:00
31	ENERCON E-175 EP5 6000 175.0 !O! hub: 182,5 m (TOT: 270,0 m) (52)		0:00
32	ENERCON E-175 EP5 6000 175.0 !O! hub: 182,5 m (TOT: 270,0 m) (53)		2:39
32	Hypotetic 8.0 8000 180.0 !-! hub: 170,0 m (TOT: 260,0 m) (44)		9:01
33	ENERCON E-175 EP5 6000 175.0 !O! hub: 182,5 m (TOT: 270,0 m) (54)		0:00
33	Hypotetic 8.0 8000 180.0 !-! hub: 170,0 m (TOT: 260,0 m) (45)		33:36
50	Hypotetic 8.0 8000 180.0 !-! hub: 170,0 m (TOT: 260,0 m) (43)		13:18
52	Hypotetic 8.0 8000 180.0 !-! hub: 170,0 m (TOT: 260,0 m) (38)		11:34
53	Hypotetic 8.0 8000 180.0 !-! hub: 170,0 m (TOT: 260,0 m) (39)		23:46
54	Hypotetic 8.0 8000 180.0 !-! hub: 170,0 m (TOT: 260,0 m) (40)		2:47
55	Hypotetic 8.0 8000 180.0 !-! hub: 170,0 m (TOT: 260,0 m) (41)		22:04
56	Hypotetic 8.0 8000 180.0 !-! hub: 170,0 m (TOT: 260,0 m) (42)		48:30
E-VE01	NORDEX N175/6.X 6800 175.0 !-! hub: 179,0 m (TOT: 266,5 m) (9)	54:17	0:00
E-VE02	NORDEX N175/6.X 6800 175.0 !-! hub: 179,0 m (TOT: 266,5 m) (10)	97:09	10:51
E-VE03	NORDEX N175/6.X 6800 175.0 !-! hub: 179,0 m (TOT: 266,5 m) (11)	46:49	2:04
E-VE04	NORDEX N175/6.X 6800 175.0 !-! hub: 179,0 m (TOT: 266,5 m) (12)	74:26	0:00
E-VE05	NORDEX N175/6.X 6800 175.0 !-! hub: 179,0 m (TOT: 266,5 m) (13)	12:11	3:19
E-VE06	NORDEX N175/6.X 6800 175.0 !-! hub: 179,0 m (TOT: 266,5 m) (14)	18:58	7:27
E-VE07	NORDEX N175/6.X 6800 175.0 !-! hub: 179,0 m (TOT: 266,5 m) (15)	100:41	2:35
E-VE08	NORDEX N175/6.X 6800 175.0 !-! hub: 179,0 m (TOT: 266,5 m) (16)		35:45
E-VE09	NORDEX N175/6.X 6800 175.0 !-! hub: 179,0 m (TOT: 266,5 m) (17)	84:33	2:13
E-VE10	NORDEX N175/6.X 6800 175.0 !-! hub: 179,0 m (TOT: 266,5 m) (18)		5:19
E-VE11	NORDEX N175/6.X 6800 175.0 !-! hub: 179,0 m (TOT: 266,5 m) (19)		1:45
E-VE12	NORDEX N175/6.X 6800 175.0 !-! hub: 179,0 m (TOT: 266,5 m) (20)		2:38
E-VE13	NORDEX N175/6.X 6800 175.0 !-! hub: 179,0 m (TOT: 266,5 m) (21)		1:40
E-VE14	NORDEX N175/6.X 6800 175.0 !-! hub: 179,0 m (TOT: 266,5 m) (22)		0:00
E-VE15	NORDEX N175/6.X 6800 175.0 !-! hub: 179,0 m (TOT: 266,5 m) (23)		11:26
E-VE16	NORDEX N175/6.X 6800 175.0 !-! hub: 179,0 m (TOT: 266,5 m) (24)		18:19
E-VE17	NORDEX N175/6.X 6800 175.0 !-! hub: 179,0 m (TOT: 266,5 m) (25)		16:33
E-VE18	NORDEX N175/6.X 6800 175.0 !-! hub: 179,0 m (TOT: 266,5 m) (26)		0:00
E-VE19	NORDEX N175/6.X 6800 175.0 !-! hub: 179,0 m (TOT: 266,5 m) (27)		0:00
E-VE20	NORDEX N175/6.X 6800 175.0 !-! hub: 179,0 m (TOT: 266,5 m) (28)		4:34
E-VE21	NORDEX N175/6.X 6800 175.0 !-! hub: 179,0 m (TOT: 266,5 m) (29)		0:00
E-VE22	NORDEX N175/6.X 6800 175.0 !-! hub: 179,0 m (TOT: 266,5 m) (30)		0:00
E-VE23	NORDEX N175/6.X 6800 175.0 !-! hub: 179,0 m (TOT: 266,5 m) (31)		0:00
E-VE24	NORDEX N175/6.X 6800 175.0 !-! hub: 179,0 m (TOT: 266,5 m) (32)		0:00
E-VE25	NORDEX N175/6.X 6800 175.0 !-! hub: 179,0 m (TOT: 266,5 m) (33)		0:00
E-VE26	NORDEX N175/6.X 6800 175.0 !-! hub: 179,0 m (TOT: 266,5 m) (34)		31:12
E-VE27	NORDEX N175/6.X 6800 175.0 !-! hub: 179,0 m (TOT: 266,5 m) (35)		14:44
N-VE01	NORDEX N175/6.X 6800 175.0 !-! hub: 179,0 m (TOT: 266,5 m) (1)		0:00
N-VE02	NORDEX N175/6.X 6800 175.0 !-! hub: 179,0 m (TOT: 266,5 m) (2)	41:58	16:00
N-VE03	NORDEX N175/6.X 6800 175.0 !-! hub: 179,0 m (TOT: 266,5 m) (3)		0:00
N-VE04	NORDEX N175/6.X 6800 175.0 !-! hub: 179,0 m (TOT: 266,5 m) (4)	34:53	6:18
N-VE05	NORDEX N175/6.X 6800 175.0 !-! hub: 179,0 m (TOT: 266,5 m) (5)	49:54	16:06
N-VE06	NORDEX N175/6.X 6800 175.0 !-! hub: 179,0 m (TOT: 266,5 m) (6)		13:39
N-VE07	NORDEX N175/6.X 6800 175.0 !-! hub: 179,0 m (TOT: 266,5 m) (7)	288:43	1:52
N-VE08	NORDEX N175/6.X 6800 175.0 !-! hub: 179,0 m (TOT: 266,5 m) (8)	76:30	30:04
VE06	Hypotetic 8.0 8000 180.0 !-! hub: 169,0 m (TOT: 259,0 m) (5)		1:09
VE07	Hypotetic 8.0 8000 180.0 !-! hub: 169,0 m (TOT: 259,0 m) (6)		6:54
VE1	Hypotetic 8.0 8000 180.0 !-! hub: 170,0 m (TOT: 260,0 m) (7)		49:12
VE1	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (21)		6:26
VE10	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (15)		0:00
VE11	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (14)		20:10
VE12	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (13)		9:41
VE13	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (26)		2:08
VE14	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (12)		0:00
VE15	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (24)		10:53

To be continued on next page...

SHADOW - Main Result

Calculation: SHADOW

...continued from previous page

No.	Name	Stopped due to flicker curtailment [h/year]	Expected [h/year]
VE16	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (27)		5:31
VE17	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (28)		1:34
VE18	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (25)		0:00
VE19	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (31)		13:43
VE2	Hypotetic 8.0 8000 180.0 !-! hub: 170,0 m (TOT: 260,0 m) (8)		18:38
VE2	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (32)		22:16
VE20	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (30)		0:00
VE21	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (29)		29:16
VE27	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (55)		1:11
VE29	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (56)		3:24
VE3	Hypotetic 8.0 8000 180.0 !-! hub: 170,0 m (TOT: 260,0 m) (9)		11:32
VE3	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (20)		0:00
VE4	Hypotetic 8.0 8000 180.0 !-! hub: 170,0 m (TOT: 260,0 m) (11)		0:00
VE4	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (19)		0:00
VE5	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (22)		11:49
VE6	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (23)		15:09
VE6	Hypotetic 8.0 8000 180.0 !-! hub: 170,0 m (TOT: 260,0 m) (10)		1:04
VE7	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (17)		5:00
VE8	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (18)		11:21
VE9	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (16)		17:13

Total times in Receptor wise and WTG wise tables can differ, as a WTG can lead to flicker at 2 or more receptors simultaneously and/or receptors may receive flicker from 2 or more WTGs simultaneously.

The calculation of the total expected values for a given receptor assumes a weighted average directional reduction for all WTGs contributing to shadow flicker within the same day. In the case where shadow flicker from different WTGs is not concurrent within the day, the total expected time at a given receptor may deviate marginally from the individual flicker time caused by each turbine separately.

**Prognozuojamas PŪV SUMINIS šėšėliavimo vertinimas
"2" alternatyva**

Project:

UAB Eurostat 1 planuojamos ukines veiklos – vejo elektriniu irengimas Pasvalio r. sav., Pusaloto sen., Pagirnupiu k., Jaciunu k., Matkunu k., Deglenu k., Daukuciu vs., Jakuboniu k., Sermuksniu k., Mickaiciu k., Budininku k., Kidzioniu k., Ozkyciu k. ir Panevezio r. sav., Panevezio sen., Pazuku k., Eimuliskio k., Grippedziu k., Staciunu k.

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Calculated:

2024-11-21 17:45/4.1.254

SHADOW - Main Result

Calculation: SHADOW

Assumptions for shadow calculations

Maximum distance for influence

Calculate only when more than 20 % of sun is covered by the blade

Please look in WTG table

Minimum sun height over horizon for influence

3 °

Day step for calculation

1 days

Time step for calculation

1 minutes

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1,41	2,36	4,03	5,55	8,35	8,36	8,16	7,72	5,06	3,23	1,33	0,98

Operational hours are calculated from WTGs in calculation and wind distribution:

Site data: ATLAS; 12 sectors; Radius: 43 000 m (3)

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
950	503	233	288	575	629	761	1 009	1 180	999	754	543	8 424

Monthly aggregation of real case reduction

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

A ZVI (Zones of Visual Influence) calculation is performed before flicker

calculation so non visible WTG do not contribute to calculated flicker

values. A WTG will be visible if it is visible from any part of the receiver

window. The ZVI calculation is based on the following assumptions:

DHM: Project Wizard Elevation Data Grid (SRTM: Shuttle DTM 1 arc-second)

Receptor grid resolution: 1,0 m

Topographic shadow included in calculation

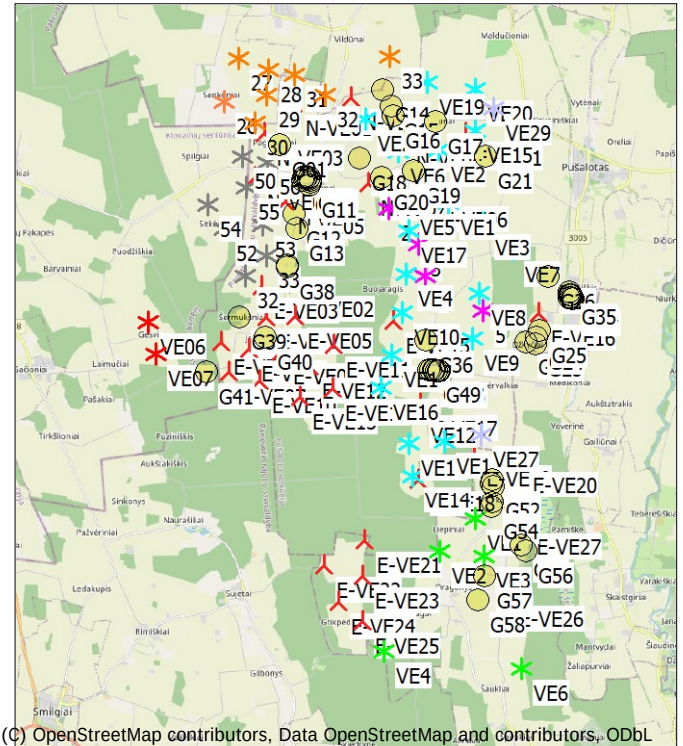
All coordinates are in

Lithuanian TM LKS94-LKS94 (LT)

WTGs

	Y	X	Z	Row data/Description	WTG type		Type-generator	Power, rated [kW]	Rotor diameter [m]	Hub height [m]	Shadow data	
					Valid	Manufact.					Calculation distance [m]	RPM [RPM]
			[m]									
2	509 738	6 198 776	48,0	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 600	6 600	170,0	169,0	2 037	8,8
3	510 515	6 197 797	51,2	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 600	6 600	170,0	169,0	2 037	8,8
4	510 709	6 196 958	48,6	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 600	6 600	170,0	169,0	2 037	8,8
5	512 239	6 196 056	46,0	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 600	6 600	170,0	169,0	2 037	8,8
26	505 388	6 201 560	51,3	ENERCON E-175 EP5 ...	Yes	ENERCON	E-175 EP5-6 000	6 000	175,0	182,5	1 735	-
27	505 734	6 202 721	51,9	ENERCON E-175 EP5 ...	Yes	ENERCON	E-175 EP5-6 000	6 000	175,0	182,5	1 735	-
28	506 531	6 202 422	50,0	ENERCON E-175 EP5 ...	Yes	ENERCON	E-175 EP5-6 000	6 000	175,0	182,5	1 735	-
29	506 492	6 201 745	49,9	ENERCON E-175 EP5 ...	Yes	ENERCON	E-175 EP5-6 000	6 000	175,0	182,5	1 735	-
30	506 188	6 201 006	51,7	ENERCON E-175 EP5 ...	Yes	ENERCON	E-175 EP5-6 000	6 000	175,0	182,5	1 735	-
31	507 234	6 202 266	51,5	ENERCON E-175 EP5 ...	Yes	ENERCON	E-175 EP5-6 000	6 000	175,0	182,5	1 735	-
32	508 050	6 201 749	49,0	ENERCON E-175 EP5 ...	Yes	ENERCON	E-175 EP5-6 000	6 000	175,0	182,5	1 735	-
32	505 943	6 196 959	51,3	Hypotetic 8.0 8000 1...	No	Hypotetic	8.0-8 000	8 000	180,0	170,0	2 500	-
33	509 743	6 202 761	45,3	ENERCON E-175 EP5 ...	Yes	ENERCON	E-175 EP5-6 000	6 000	175,0	182,5	1 735	-
33	506 501	6 197 500	52,2	Hypotetic 8.0 8000 1...	No	Hypotetic	8.0-8 000	8 000	180,0	170,0	2 500	-
50	505 860	6 200 126	53,8	Hypotetic 8.0 8000 1...	No	Hypotetic	8.0-8 000	8 000	180,0	170,0	2 500	-
52	505 377	6 198 220	53,0	Hypotetic 8.0 8000 1...	No	Hypotetic	8.0-8 000	8 000	180,0	170,0	2 500	-
53	506 394	6 198 319	53,1	Hypotetic 8.0 8000 1...	No	Hypotetic	8.0-8 000	8 000	180,0	170,0	2 500	-
54	504 944	6 198 838	51,4	Hypotetic 8.0 8000 1...	No	Hypotetic	8.0-8 000	8 000	180,0	170,0	2 500	-
55	505 959	6 199 299	51,4	Hypotetic 8.0 8000 1...	No	Hypotetic	8.0-8 000	8 000	180,0	170,0	2 500	-
56	506 528	6 199 986	49,3	Hypotetic 8.0 8000 1...	No	Hypotetic	8.0-8 000	8 000	180,0	170,0	2 500	-
E-VE01	511 774	6 200 739	47,5	VESTAS V172-7.2 72...	Yes	VESTAS	V172-7.2-7 200	7 200	172,0	175,0	1 903	-
E-VE02	507 315	6 196 732	53,0	VESTAS V172-7.2 72...	Yes	VESTAS	V172-7.2-7 200	7 200	172,0	175,0	1 903	-
E-VE03	506 375	6 196 675	54,7	VESTAS V172-7.2 72...	Yes	VESTAS	V172-7.2-7 200	7 200	172,0	175,0	1 903	-
E-VE04	506 501	6 195 859	52,0	VESTAS V172-7.2 72...	Yes	VESTAS	V172-7.2-7 200	7 200	172,0	175,0	1 903	-
E-VE05	507 253	6 195 881	52,2	VESTAS V172-7.2 72...	Yes	VESTAS	V172-7.2-7 200	7 200	172,0	175,0	1 903	-
E-VE06	505 294	6 195 211	55,3	VESTAS V172-7.2 72...	Yes	VESTAS	V172-7.2-7 200	7 200	172,0	175,0	1 903	-
E-VE07	505 491	6 194 401	54,0	VESTAS V172-7.2 72...	Yes	VESTAS	V172-7.2-7 200	7 200	172,0	175,0	1 903	-
E-VE08	506 035	6 195 026	53,7	VESTAS V172-7.2 72...	Yes	VESTAS	V172-7.2-7 200	7 200	172,0	175,0	1 903	-
E-VE09	506 884	6 194 962	53,3	VESTAS V172-7.2 72...	Yes	VESTAS	V172-7.2-7 200	7 200	172,0	175,0	1 903	-

To be continued on next page...



Project:

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Calculated:

2024-11-21 17:45/4.1.254

SHADOW - Main Result

Calculation: SHADOW

...continued from previous page

	Y	X	Z	Row data/Description	WTG type		Type-generator	Power, rated [kW]	Rotor diameter [m]	Hub height [m]	Shadow data	
					Valid	Manufact.					Calculation distance [m]	RPM [RPM]
			[m]									
E-VE10	506 331	6 194 190	54,0	VESTAS V172-7.2 72...	Yes	VESTAS	V172-7.2-7 200	7 200	172,0	175,0	1 903	-
E-VE11	508 295	6 195 151	50,4	VESTAS V172-7.2 72...	Yes	VESTAS	V172-7.2-7 200	7 200	172,0	175,0	1 903	-
E-VE12	507 655	6 194 577	52,3	VESTAS V172-7.2 72...	Yes	VESTAS	V172-7.2-7 200	7 200	172,0	175,0	1 903	-
E-VE13	507 391	6 193 769	53,5	VESTAS V172-7.2 72...	Yes	VESTAS	V172-7.2-7 200	7 200	172,0	175,0	1 903	-
E-VE14	508 259	6 193 993	52,0	VESTAS V172-7.2 72...	Yes	VESTAS	V172-7.2-7 200	7 200	172,0	175,0	1 903	-
E-VE15	509 883	6 195 766	50,4	VESTAS V172-7.2 72...	Yes	VESTAS	V172-7.2-7 200	7 200	172,0	175,0	1 903	-
E-VE16	513 718	6 195 996	46,0	VESTAS V172-7.2 72...	Yes	VESTAS	V172-7.2-7 200	7 200	172,0	175,0	1 903	-
E-VE17	510 597	6 193 591	53,2	VESTAS V172-7.2 72...	Yes	VESTAS	V172-7.2-7 200	7 200	172,0	175,0	1 903	-
E-VE18	510 530	6 191 574	50,0	VESTAS V172-7.2 72...	Yes	VESTAS	V172-7.2-7 200	7 200	172,0	175,0	1 903	-
E-VE19	512 020	6 192 269	46,3	VESTAS V172-7.2 72...	Yes	VESTAS	V172-7.2-7 200	7 200	172,0	175,0	1 903	-
E-VE20	513 240	6 192 097	45,3	VESTAS V172-7.2 72...	Yes	VESTAS	V172-7.2-7 200	7 200	172,0	175,0	1 903	-
E-VE21	509 118	6 189 929	53,2	VESTAS V172-7.2 72...	Yes	VESTAS	V172-7.2-7 200	7 200	172,0	175,0	1 903	-
E-VE22	508 045	6 189 297	55,0	VESTAS V172-7.2 72...	Yes	VESTAS	V172-7.2-7 200	7 200	172,0	175,0	1 903	-
E-VE23	509 083	6 189 002	52,3	VESTAS V172-7.2 72...	Yes	VESTAS	V172-7.2-7 200	7 200	172,0	175,0	1 903	-
E-VE24	508 432	6 188 305	52,0	VESTAS V172-7.2 72...	Yes	VESTAS	V172-7.2-7 200	7 200	172,0	175,0	1 903	-
E-VE25	509 068	6 187 814	51,8	VESTAS V172-7.2 72...	Yes	VESTAS	V172-7.2-7 200	7 200	172,0	175,0	1 903	-
E-VE26	512 902	6 188 519	46,5	VESTAS V172-7.2 72...	Yes	VESTAS	V172-7.2-7 200	7 200	172,0	175,0	1 903	-
E-VE27	513 359	6 190 431	47,0	VESTAS V172-7.2 72...	Yes	VESTAS	V172-7.2-7 200	7 200	172,0	175,0	1 903	-
N-VE01	507 209	6 201 524	51,0	VESTAS V172-7.2 72...	Yes	VESTAS	V172-7.2-7 200	7 200	172,0	175,0	1 903	-
N-VE02	508 734	6 201 665	47,0	VESTAS V172-7.2 72...	Yes	VESTAS	V172-7.2-7 200	7 200	172,0	175,0	1 903	-
N-VE03	506 435	6 200 737	50,4	VESTAS V172-7.2 72...	Yes	VESTAS	V172-7.2-7 200	7 200	172,0	175,0	1 903	-
N-VE04	506 209	6 199 545	52,6	VESTAS V172-7.2 72...	Yes	VESTAS	V172-7.2-7 200	7 200	172,0	175,0	1 903	-
N-VE05	506 994	6 198 936	50,6	VESTAS V172-7.2 72...	Yes	VESTAS	V172-7.2-7 200	7 200	172,0	175,0	1 903	-
N-VE06	510 789	6 199 120	51,0	VESTAS V172-7.2 72...	Yes	VESTAS	V172-7.2-7 200	7 200	172,0	175,0	1 903	-
N-VE07	509 212	6 199 396	48,3	VESTAS V172-7.2 72...	Yes	VESTAS	V172-7.2-7 200	7 200	172,0	175,0	1 903	-
N-VE08	510 142	6 200 713	47,9	VESTAS V172-7.2 72...	Yes	VESTAS	V172-7.2-7 200	7 200	172,0	175,0	1 903	-
VE06	503 373	6 195 727	55,0	Hypotetic 8.0 8000 1...	No	Hypotetic	8.0-8 000	8 000	180,0	169,0	2 500	-
VE07	503 573	6 194 904	55,1	Hypotetic 8.0 8000 1...	No	Hypotetic	8.0-8 000	8 000	180,0	169,0	2 500	-
VE1	512 050	6 190 536	47,9	Hypotetic 8.0 8000 1...	No	Hypotetic	8.0-8 000	8 000	180,0	170,0	2 500	-
VE1	511 301	6 198 923	51,5	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	165,0	2 037	8,8
VE10	510 088	6 196 004	50,2	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	165,0	2 037	8,8
VE11	509 806	6 194 891	51,0	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	165,0	2 037	8,8
VE12	510 539	6 193 414	50,1	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	165,0	2 037	8,8
VE13	511 243	6 192 588	48,0	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	165,0	2 037	8,8
VE14	510 388	6 191 665	50,0	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	165,0	2 037	8,8
VE15	512 026	6 200 837	46,0	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	165,0	2 037	8,8
VE16	509 529	6 193 999	50,7	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	165,0	2 037	8,8
VE17	510 273	6 198 161	47,0	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	165,0	2 037	8,8
VE18	510 269	6 192 543	51,0	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	165,0	2 037	8,8
VE19	510 745	6 202 082	46,0	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	165,0	2 037	8,8
VE2	511 090	6 189 666	49,3	Hypotetic 8.0 8000 1...	No	Hypotetic	8.0-8 000	8 000	180,0	170,0	2 500	-
VE2	511 042	6 200 317	48,9	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	165,0	2 037	8,8
VE20	512 003	6 201 911	48,6	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	165,0	2 037	8,8
VE21	509 115	6 201 121	48,0	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	165,0	2 037	8,8
VE27	512 196	6 192 765	43,3	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	165,0	2 037	8,8
VE29	512 502	6 201 414	49,7	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	165,0	2 037	8,8
VE3	512 280	6 189 536	48,6	Hypotetic 8.0 8000 1...	No	Hypotetic	8.0-8 000	8 000	180,0	170,0	2 500	-
VE3	512 241	6 198 372	46,5	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	165,0	2 037	8,8
VE4	509 643	6 187 021	52,0	Hypotetic 8.0 8000 1...	No	Hypotetic	8.0-8 000	8 000	180,0	170,0	2 500	-
VE4	510 190	6 197 025	50,4	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	165,0	2 037	8,8
VE5	510 233	6 198 924	49,3	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	165,0	2 037	8,8
VE6	509 964	6 200 239	47,0	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	165,0	2 037	8,8
VE6	513 271	6 186 583	45,3	Hypotetic 8.0 8000 1...	No	Hypotetic	8.0-8 000	8 000	180,0	170,0	2 500	-
VE7	513 029	6 197 660	47,0	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	165,0	2 037	8,8
VE8	512 122	6 196 524	48,3	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	165,0	2 037	8,8
VE9	511 961	6 195 326	48,8	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	165,0	2 037	8,8

Shadow receptor-Input

No.	Y	X	Z	Width	Height	Elevation a.g.l.	Slope of window	Direction mode	Eye height (ZVI) a.g.l.
			[m]	[m]	[m]	[m]	[°]		[m]
G01	506 843	6 200 422	54,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G02	507 506	6 199 600	51,9	1,0	1,0	1,0	90,0	"Green house mode"	2,0

To be continued on next page...

UAB Eurostat 1 planuojamos ukines veiklos – vejo elektriniu irengimas Pasvalio r. sav., Pusaloto sen., Pagirnupiu k., Jaciunu k., Matkunu k., Deglenu k., Daukuciu vs., Jakuboniu k., Sermuksniu k., Mickaiciu k., Budininku k., Kidzioniu k., Ozkyciu k. ir Panevezio r. sav., Panevezio sen., Pazuku k., Eimuliskio k., Grippedziu k., Staciunu k.

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2024-11-21 17:45/4.1.254

SHADOW - Main Result

Calculation: SHADOW

...continued from previous page

No.	Y	X	Z	Width	Height	Elevation a.g.l.	Slope of window	Direction mode	Eye height (ZVI) a.g.l.
			[m]	[m]	[m]	[m]	[°]		[m]
G03	507 490	6 199 545	52,7	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G04	507 464	6 199 492	53,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G05	507 561	6 199 583	52,4	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G06	507 632	6 199 555	53,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G07	507 619	6 199 509	53,5	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G08	507 537	6 199 529	52,3	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G09	507 682	6 199 497	53,8	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G10	507 669	6 199 423	53,1	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G11	507 642	6 199 366	54,3	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G12	507 228	6 198 595	55,8	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G13	507 313	6 198 194	54,4	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G14	509 558	6 201 886	47,1	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G15	509 794	6 201 446	49,3	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G16	509 856	6 201 185	51,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G17	510 988	6 201 034	51,6	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G18	508 962	6 200 071	50,7	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G19	510 413	6 199 759	48,9	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G20	509 553	6 199 558	53,4	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G21	512 320	6 200 121	50,9	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G22	513 368	6 195 217	46,4	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G23	513 633	6 195 185	45,8	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G24	513 680	6 195 355	46,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G25	513 740	6 195 540	45,6	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G26	513 978	6 196 950	47,1	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G27	514 634	6 196 384	46,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G28	514 618	6 196 386	45,9	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G29	514 593	6 196 389	45,7	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G30	514 567	6 196 392	44,3	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G31	514 535	6 196 397	43,3	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G32	514 544	6 196 497	44,3	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G33	514 564	6 196 494	45,2	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G34	514 587	6 196 492	45,9	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G35	514 541	6 196 549	43,6	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G36	510 744	6 195 273	52,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G37	507 058	6 197 245	55,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G38	507 055	6 197 200	55,4	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G39	505 767	6 195 866	56,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G40	506 485	6 195 329	55,6	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G41	504 924	6 194 409	55,7	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G42	510 825	6 194 492	51,1	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G43	510 860	6 194 485	51,5	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G44	511 099	6 194 463	50,7	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G45	511 072	6 194 465	51,4	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G46	511 051	6 194 468	52,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G47	511 018	6 194 470	52,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G48	510 973	6 194 477	51,6	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G49	510 940	6 194 480	51,1	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G50	512 500	6 191 593	49,9	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G51	512 482	6 191 483	48,8	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G52	512 537	6 191 402	49,6	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G53	512 499	6 190 966	48,8	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G54	512 499	6 190 841	50,4	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G55	513 257	6 189 826	47,4	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G56	513 387	6 189 656	46,7	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G57	512 309	6 189 025	50,4	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G58	512 133	6 188 384	48,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0

Project:

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SHADOW - Main Result

Calculation: SHADOW

Calculation Results

Shadow receptor

Shadow, expected values

No. Shadow hours

per year

[h/year]

G01	26:25
G02	34:45
G03	37:30
G04	38:25
G05	30:45
G06	26:34
G07	31:19
G08	34:47
G09	27:19
G10	32:43
G11	34:30
G12	26:06
G13	21:57
G14	25:39
G15	35:12
G16	43:25
G17	34:48
G18	33:51
G19	32:23
G20	60:34
G21	8:06
G22	7:06
G23	10:01
G24	11:19
G25	12:02
G26	10:11
G27	5:08
G28	6:46
G29	6:39
G30	6:33
G31	6:29
G32	8:07
G33	8:15
G34	8:28
G35	9:11
G36	27:27
G37	52:36
G38	49:08
G39	38:27
G40	48:43
G41	47:07
G42	26:01
G43	22:55
G44	15:00
G45	14:09
G46	14:24
G47	14:56
G48	15:40
G49	16:48
G50	15:33
G51	9:35
G52	10:32
G53	18:57
G54	25:41
G55	18:10
G56	16:56
G57	19:13
G58	18:09

SHADOW - Main Result

Calculation: SHADOW

Total amount of flickering on the shadow receptors caused by each WTG

No.	Name	Expected [h/year]
2	Siemens Gamesa SG 6.0-170 6600 170.0 !O! hub: 169,0 m (TOT: 254,0 m) (1)	13:54
3	Siemens Gamesa SG 6.0-170 6600 170.0 !O! hub: 169,0 m (TOT: 254,0 m) (2)	0:35
4	Siemens Gamesa SG 6.0-170 6600 170.0 !O! hub: 169,0 m (TOT: 254,0 m) (3)	0:00
5	Siemens Gamesa SG 6.0-170 6600 170.0 !O! hub: 169,0 m (TOT: 254,0 m) (4)	26:34
26	ENERCON E-175 EP5 6000 175.0 !O! hub: 182,5 m (TOT: 270,0 m) (47)	0:00
27	ENERCON E-175 EP5 6000 175.0 !O! hub: 182,5 m (TOT: 270,0 m) (48)	0:00
28	ENERCON E-175 EP5 6000 175.0 !O! hub: 182,5 m (TOT: 270,0 m) (49)	0:00
29	ENERCON E-175 EP5 6000 175.0 !O! hub: 182,5 m (TOT: 270,0 m) (50)	0:00
30	ENERCON E-175 EP5 6000 175.0 !O! hub: 182,5 m (TOT: 270,0 m) (51)	0:00
31	ENERCON E-175 EP5 6000 175.0 !O! hub: 182,5 m (TOT: 270,0 m) (52)	0:00
32	ENERCON E-175 EP5 6000 175.0 !O! hub: 182,5 m (TOT: 270,0 m) (53)	2:36
32	Hypotetic 8.0 8000 180.0 !-! hub: 170,0 m (TOT: 260,0 m) (44)	8:52
33	ENERCON E-175 EP5 6000 175.0 !O! hub: 182,5 m (TOT: 270,0 m) (54)	0:00
33	Hypotetic 8.0 8000 180.0 !-! hub: 170,0 m (TOT: 260,0 m) (45)	33:02
50	Hypotetic 8.0 8000 180.0 !-! hub: 170,0 m (TOT: 260,0 m) (43)	13:04
52	Hypotetic 8.0 8000 180.0 !-! hub: 170,0 m (TOT: 260,0 m) (38)	11:22
53	Hypotetic 8.0 8000 180.0 !-! hub: 170,0 m (TOT: 260,0 m) (39)	23:22
54	Hypotetic 8.0 8000 180.0 !-! hub: 170,0 m (TOT: 260,0 m) (40)	2:44
55	Hypotetic 8.0 8000 180.0 !-! hub: 170,0 m (TOT: 260,0 m) (41)	21:42
56	Hypotetic 8.0 8000 180.0 !-! hub: 170,0 m (TOT: 260,0 m) (42)	47:41
E-VE01	VESTAS V172-7.2 7200 172.0 !O! hub: 175,0 m (TOT: 261,0 m) (9)	12:44
E-VE02	VESTAS V172-7.2 7200 172.0 !O! hub: 175,0 m (TOT: 261,0 m) (10)	23:25
E-VE03	VESTAS V172-7.2 7200 172.0 !O! hub: 175,0 m (TOT: 261,0 m) (11)	9:43
E-VE04	VESTAS V172-7.2 7200 172.0 !O! hub: 175,0 m (TOT: 261,0 m) (12)	15:22
E-VE05	VESTAS V172-7.2 7200 172.0 !O! hub: 175,0 m (TOT: 261,0 m) (13)	5:55
E-VE06	VESTAS V172-7.2 7200 172.0 !O! hub: 175,0 m (TOT: 261,0 m) (14)	11:13
E-VE07	VESTAS V172-7.2 7200 172.0 !O! hub: 175,0 m (TOT: 261,0 m) (15)	28:59
E-VE08	VESTAS V172-7.2 7200 172.0 !O! hub: 175,0 m (TOT: 261,0 m) (16)	34:15
E-VE09	VESTAS V172-7.2 7200 172.0 !O! hub: 175,0 m (TOT: 261,0 m) (17)	17:20
E-VE10	VESTAS V172-7.2 7200 172.0 !O! hub: 175,0 m (TOT: 261,0 m) (18)	4:52
E-VE11	VESTAS V172-7.2 7200 172.0 !O! hub: 175,0 m (TOT: 261,0 m) (19)	1:39
E-VE12	VESTAS V172-7.2 7200 172.0 !O! hub: 175,0 m (TOT: 261,0 m) (20)	2:30
E-VE13	VESTAS V172-7.2 7200 172.0 !O! hub: 175,0 m (TOT: 261,0 m) (21)	1:31
E-VE14	VESTAS V172-7.2 7200 172.0 !O! hub: 175,0 m (TOT: 261,0 m) (22)	0:00
E-VE15	VESTAS V172-7.2 7200 172.0 !O! hub: 175,0 m (TOT: 261,0 m) (23)	11:23
E-VE16	VESTAS V172-7.2 7200 172.0 !O! hub: 175,0 m (TOT: 261,0 m) (24)	17:28
E-VE17	VESTAS V172-7.2 7200 172.0 !O! hub: 175,0 m (TOT: 261,0 m) (25)	15:48
E-VE18	VESTAS V172-7.2 7200 172.0 !O! hub: 175,0 m (TOT: 261,0 m) (26)	0:00
E-VE19	VESTAS V172-7.2 7200 172.0 !O! hub: 175,0 m (TOT: 261,0 m) (27)	0:00
E-VE20	VESTAS V172-7.2 7200 172.0 !O! hub: 175,0 m (TOT: 261,0 m) (28)	4:52
E-VE21	VESTAS V172-7.2 7200 172.0 !O! hub: 175,0 m (TOT: 261,0 m) (29)	0:00
E-VE22	VESTAS V172-7.2 7200 172.0 !O! hub: 175,0 m (TOT: 261,0 m) (30)	0:00
E-VE23	VESTAS V172-7.2 7200 172.0 !O! hub: 175,0 m (TOT: 261,0 m) (31)	0:00
E-VE24	VESTAS V172-7.2 7200 172.0 !O! hub: 175,0 m (TOT: 261,0 m) (32)	0:00
E-VE25	VESTAS V172-7.2 7200 172.0 !O! hub: 175,0 m (TOT: 261,0 m) (33)	0:00
E-VE26	VESTAS V172-7.2 7200 172.0 !O! hub: 175,0 m (TOT: 261,0 m) (34)	29:04
E-VE27	VESTAS V172-7.2 7200 172.0 !O! hub: 175,0 m (TOT: 261,0 m) (35)	14:11
N-VE01	VESTAS V172-7.2 7200 172.0 !O! hub: 175,0 m (TOT: 261,0 m) (1)	0:00
N-VE02	VESTAS V172-7.2 7200 172.0 !O! hub: 175,0 m (TOT: 261,0 m) (2)	26:34
N-VE03	VESTAS V172-7.2 7200 172.0 !O! hub: 175,0 m (TOT: 261,0 m) (3)	0:00
N-VE04	VESTAS V172-7.2 7200 172.0 !O! hub: 175,0 m (TOT: 261,0 m) (4)	14:21
N-VE05	VESTAS V172-7.2 7200 172.0 !O! hub: 175,0 m (TOT: 261,0 m) (5)	21:54
N-VE06	VESTAS V172-7.2 7200 172.0 !O! hub: 175,0 m (TOT: 261,0 m) (6)	13:02
N-VE07	VESTAS V172-7.2 7200 172.0 !O! hub: 175,0 m (TOT: 261,0 m) (7)	57:36
N-VE08	VESTAS V172-7.2 7200 172.0 !O! hub: 175,0 m (TOT: 261,0 m) (8)	36:56
VE06	Hypotetic 8.0 8000 180.0 !-! hub: 169,0 m (TOT: 259,0 m) (5)	1:08
VE07	Hypotetic 8.0 8000 180.0 !-! hub: 169,0 m (TOT: 259,0 m) (6)	6:47
VE1	Hypotetic 8.0 8000 180.0 !-! hub: 170,0 m (TOT: 260,0 m) (7)	48:23
VE1	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (21)	6:19
VE10	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (15)	0:00
VE11	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (14)	19:50
VE12	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (13)	9:31
VE13	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (26)	2:06
VE14	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (12)	0:00
VE15	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (24)	10:42

To be continued on next page...

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SHADOW - Main Result

Calculation: SHADOW

...continued from previous page

No.	Name	Expected [h/year]
VE16	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (27)	5:26
VE17	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (28)	1:32
VE18	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (25)	0:00
VE19	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (31)	13:29
VE2	Hypotetic 8.0 8000 180.0 !-! hub: 170,0 m (TOT: 260,0 m) (8)	18:19
VE2	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (32)	21:53
VE20	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (30)	0:00
VE21	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (29)	28:47
VE27	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (55)	1:10
VE29	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (56)	3:21
VE3	Hypotetic 8.0 8000 180.0 !-! hub: 170,0 m (TOT: 260,0 m) (9)	11:20
VE3	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (20)	0:00
VE4	Hypotetic 8.0 8000 180.0 !-! hub: 170,0 m (TOT: 260,0 m) (11)	0:00
VE4	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (19)	0:00
VE5	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (22)	11:37
VE6	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (23)	14:54
VE6	Hypotetic 8.0 8000 180.0 !-! hub: 170,0 m (TOT: 260,0 m) (10)	1:03
VE7	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (17)	4:55
VE8	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (18)	11:09
VE9	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (16)	16:56

Total times in Receptor wise and WTG wise tables can differ, as a WTG can lead to flicker at 2 or more receptors simultaneously and/or receptors may receive flicker from 2 or more WTGs simultaneously.

The calculation of the total expected values for a given receptor assumes a weighted average directional reduction for all WTGs contributing to shadow flicker within the same day. In the case where shadow flicker from different WTGs is not concurrent within the day, the total expected time at a given receptor may deviate marginally from the individual flicker time caused by each turbine separately.

Project:

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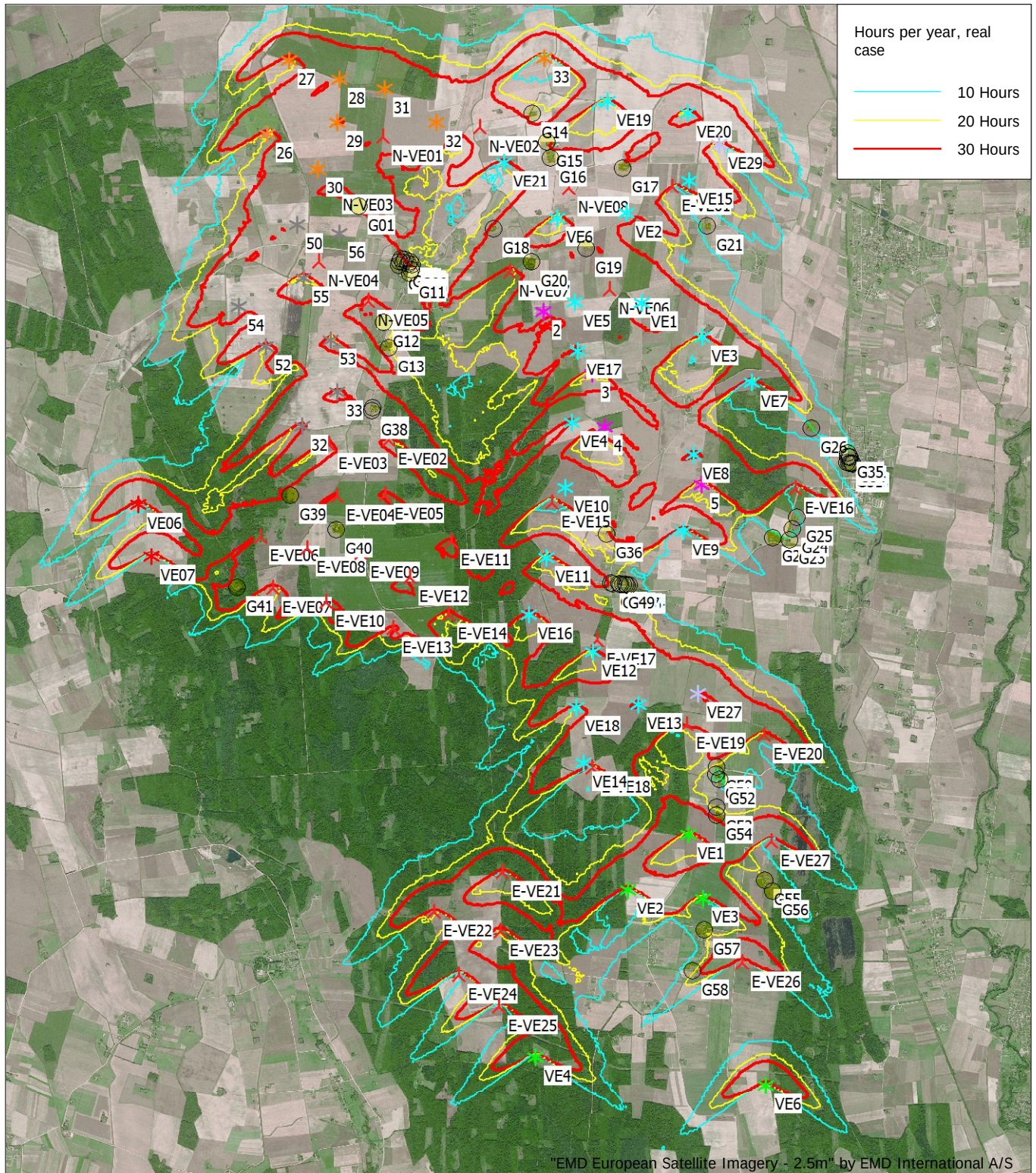
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SHADOW - Map

Calculation: SHADOW



Map: windPRO European Satellite Imagery - 2.5 m, Print scale 1:90 000, Map center Lithuanian TM LKS94-LKS94 (LT) East: 509 712 North: 6 194 753
▲ New WTG ★ Existing WTG ● Shadow receptor
Flicker map level: Project Wizard Elevation Data Grid (SRTM: Shuttle DTM 1 arc-second)
Time step: 4 minutes, Day step: 14 days, Map resolution: 30 m, Visibility resolution: 15 m, Eye height: 1,5 m

**PŪV SUMINIS šešėliavimo
mažinimas (shadow shut-down)
"2" alternatyva**

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Panevezio r. sav., Panevezio sen., Pazuku k., Eimuliskio k., Grikpedziu k., Staciunu k.

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SHADOW - Main Result

Calculation: SHADOW

...continued from previous page

	Y	X	Z	Row data/Description	WTG type		Type-generator	Power, rated [kW]	Rotor diameter [m]	Hub height [m]	Shadow data	
					Valid	Manufact.					Calculation distance [m]	RPM
			[m]									[RPM]
E-VE08	506 035	6 195 026	53,7	VESTAS V172-7.2 72...	Yes	VESTAS	V172-7.2-7 200	7 200	172,0	175,0	1 903	-
E-VE09	506 884	6 194 962	53,3	VESTAS V172-7.2 72...	Yes	VESTAS	V172-7.2-7 200	7 200	172,0	175,0	1 903	-
E-VE10	506 331	6 194 190	54,0	VESTAS V172-7.2 72...	Yes	VESTAS	V172-7.2-7 200	7 200	172,0	175,0	1 903	-
E-VE11	508 295	6 195 151	50,4	VESTAS V172-7.2 72...	Yes	VESTAS	V172-7.2-7 200	7 200	172,0	175,0	1 903	-
E-VE12	507 655	6 194 577	52,3	VESTAS V172-7.2 72...	Yes	VESTAS	V172-7.2-7 200	7 200	172,0	175,0	1 903	-
E-VE13	507 391	6 193 769	53,5	VESTAS V172-7.2 72...	Yes	VESTAS	V172-7.2-7 200	7 200	172,0	175,0	1 903	-
E-VE14	508 259	6 193 993	52,0	VESTAS V172-7.2 72...	Yes	VESTAS	V172-7.2-7 200	7 200	172,0	175,0	1 903	-
E-VE15	509 883	6 195 766	50,4	VESTAS V172-7.2 72...	Yes	VESTAS	V172-7.2-7 200	7 200	172,0	175,0	1 903	-
E-VE16	513 718	6 195 996	46,0	VESTAS V172-7.2 72...	Yes	VESTAS	V172-7.2-7 200	7 200	172,0	175,0	1 903	-
E-VE17	510 597	6 193 591	53,2	VESTAS V172-7.2 72...	Yes	VESTAS	V172-7.2-7 200	7 200	172,0	175,0	1 903	-
E-VE18	510 930	6 191 574	50,0	VESTAS V172-7.2 72...	Yes	VESTAS	V172-7.2-7 200	7 200	172,0	175,0	1 903	-
E-VE19	512 020	6 192 269	46,3	VESTAS V172-7.2 72...	Yes	VESTAS	V172-7.2-7 200	7 200	172,0	175,0	1 903	-
E-VE20	513 240	6 192 097	45,3	VESTAS V172-7.2 72...	Yes	VESTAS	V172-7.2-7 200	7 200	172,0	175,0	1 903	-
E-VE21	509 118	6 189 929	53,2	VESTAS V172-7.2 72...	Yes	VESTAS	V172-7.2-7 200	7 200	172,0	175,0	1 903	-
E-VE22	508 045	6 189 297	55,0	VESTAS V172-7.2 72...	Yes	VESTAS	V172-7.2-7 200	7 200	172,0	175,0	1 903	-
E-VE23	509 083	6 189 002	52,3	VESTAS V172-7.2 72...	Yes	VESTAS	V172-7.2-7 200	7 200	172,0	175,0	1 903	-
E-VE24	508 432	6 188 305	52,0	VESTAS V172-7.2 72...	Yes	VESTAS	V172-7.2-7 200	7 200	172,0	175,0	1 903	-
E-VE25	509 068	6 187 814	51,8	VESTAS V172-7.2 72...	Yes	VESTAS	V172-7.2-7 200	7 200	172,0	175,0	1 903	-
E-VE26	512 902	6 188 519	46,5	VESTAS V172-7.2 72...	Yes	VESTAS	V172-7.2-7 200	7 200	172,0	175,0	1 903	-
E-VE27	513 359	6 190 431	47,0	VESTAS V172-7.2 72...	Yes	VESTAS	V172-7.2-7 200	7 200	172,0	175,0	1 903	-
N-VE01	507 209	6 201 524	51,0	VESTAS V172-7.2 72...	Yes	VESTAS	V172-7.2-7 200	7 200	172,0	175,0	1 903	-
N-VE02	508 734	6 201 665	47,0	VESTAS V172-7.2 72...	Yes	VESTAS	V172-7.2-7 200	7 200	172,0	175,0	1 903	-
N-VE03	506 435	6 200 737	50,4	VESTAS V172-7.2 72...	Yes	VESTAS	V172-7.2-7 200	7 200	172,0	175,0	1 903	-
N-VE04	506 209	6 199 545	52,6	VESTAS V172-7.2 72...	Yes	VESTAS	V172-7.2-7 200	7 200	172,0	175,0	1 903	-
N-VE05	506 994	6 198 936	50,6	VESTAS V172-7.2 72...	Yes	VESTAS	V172-7.2-7 200	7 200	172,0	175,0	1 903	-
N-VE06	510 789	6 199 120	51,0	VESTAS V172-7.2 72...	Yes	VESTAS	V172-7.2-7 200	7 200	172,0	175,0	1 903	-
N-VE07	509 212	6 199 396	48,3	VESTAS V172-7.2 72...	Yes	VESTAS	V172-7.2-7 200	7 200	172,0	175,0	1 903	-
N-VE08	510 142	6 200 713	47,9	VESTAS V172-7.2 72...	Yes	VESTAS	V172-7.2-7 200	7 200	172,0	175,0	1 903	-
VE06	503 373	6 195 727	55,0	Hypotetic 8.0 8000 1...	No	Hypotetic	8.0-8 000	8 000	180,0	169,0	2 500	-
VE07	503 573	6 194 904	55,1	Hypotetic 8.0 8000 1...	No	Hypotetic	8.0-8 000	8 000	180,0	169,0	2 500	-
VE1	512 050	6 190 536	47,9	Hypotetic 8.0 8000 1...	No	Hypotetic	8.0-8 000	8 000	180,0	170,0	2 500	-
VE1	511 301	6 198 923	51,5	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	165,0	2 037	8,8
VE10	510 088	6 196 004	50,2	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	165,0	2 037	8,8
VE11	509 806	6 194 891	51,0	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	165,0	2 037	8,8
VE12	510 539	6 193 414	50,1	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	165,0	2 037	8,8
VE13	511 243	6 192 588	48,0	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	165,0	2 037	8,8
VE14	510 388	6 191 665	50,0	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	165,0	2 037	8,8
VE15	512 026	6 200 837	46,0	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	165,0	2 037	8,8
VE16	509 529	6 193 999	50,7	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	165,0	2 037	8,8
VE17	510 273	6 198 161	47,0	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	165,0	2 037	8,8
VE18	510 269	6 192 543	51,0	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	165,0	2 037	8,8
VE19	510 745	6 202 082	46,0	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	165,0	2 037	8,8
VE2	511 090	6 189 666	49,3	Hypotetic 8.0 8000 1...	No	Hypotetic	8.0-8 000	8 000	180,0	170,0	2 500	-
VE2	511 042	6 200 317	48,9	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	165,0	2 037	8,8
VE20	512 003	6 201 911	48,6	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	165,0	2 037	8,8
VE21	509 115	6 201 121	48,0	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	165,0	2 037	8,8
VE27	512 196	6 192 765	43,3	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	165,0	2 037	8,8
VE29	512 502	6 201 414	49,7	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	165,0	2 037	8,8
VE3	512 280	6 189 536	48,6	Hypotetic 8.0 8000 1...	No	Hypotetic	8.0-8 000	8 000	180,0	170,0	2 500	-
VE3	512 241	6 198 372	46,5	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	165,0	2 037	8,8
VE4	509 643	6 187 021	52,0	Hypotetic 8.0 8000 1...	No	Hypotetic	8.0-8 000	8 000	180,0	170,0	2 500	-
VE4	510 190	6 197 025	50,4	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	165,0	2 037	8,8
VE5	510 233	6 198 924	49,3	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	165,0	2 037	8,8
VE6	509 964	6 200 239	47,0	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	165,0	2 037	8,8
VE6	513 271	6 186 583	45,3	Hypotetic 8.0 8000 1...	No	Hypotetic	8.0-8 000	8 000	180,0	170,0	2 500	-
VE7	513 029	6 197 660	47,0	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	165,0	2 037	8,8
VE8	512 122	6 196 524	48,3	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	165,0	2 037	8,8
VE9	511 961	6 195 326	48,8	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	165,0	2 037	8,8

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SHADOW - Main Result

Calculation: SHADOW

Shadow receptor-Input

No.	Y	X	Z	Width	Height	Elevation a.g.l.	Slope of window	Direction mode	Eye height (ZVI) a.g.l.
			[m]	[m]	[m]	[m]	[°]		[m]
G01	506 843	6 200 422	54,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G02	507 506	6 199 600	51,9	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G03	507 490	6 199 545	52,7	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G04	507 464	6 199 492	53,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G05	507 561	6 199 583	52,4	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G06	507 632	6 199 555	53,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G07	507 619	6 199 509	53,5	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G08	507 537	6 199 529	52,3	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G09	507 682	6 199 497	53,8	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G10	507 669	6 199 423	53,1	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G11	507 642	6 199 366	54,3	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G12	507 228	6 198 595	55,8	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G13	507 313	6 198 194	54,4	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G14	509 558	6 201 886	47,1	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G15	509 794	6 201 446	49,3	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G16	509 856	6 201 185	51,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G17	510 988	6 201 034	51,6	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G18	508 962	6 200 071	50,7	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G19	510 413	6 199 759	48,9	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G20	509 553	6 199 558	53,4	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G21	512 320	6 200 121	50,9	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G22	513 368	6 195 217	46,4	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G23	513 633	6 195 185	45,8	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G24	513 680	6 195 355	46,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G25	513 740	6 195 540	45,6	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G26	513 978	6 196 950	47,1	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G27	514 634	6 196 384	46,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G28	514 618	6 196 386	45,9	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G29	514 593	6 196 389	45,7	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G30	514 567	6 196 392	44,3	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G31	514 535	6 196 397	43,3	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G32	514 544	6 196 497	44,3	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G33	514 564	6 196 494	45,2	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G34	514 587	6 196 492	45,9	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G35	514 541	6 196 549	43,6	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G36	510 744	6 195 273	52,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G37	507 058	6 197 245	55,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G38	507 055	6 197 200	55,4	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G39	505 767	6 195 866	56,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G40	506 485	6 195 329	55,6	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G41	504 924	6 194 409	55,7	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G42	510 825	6 194 492	51,1	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G43	510 860	6 194 485	51,5	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G44	511 099	6 194 463	50,7	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G45	511 072	6 194 465	51,4	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G46	511 051	6 194 468	52,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G47	511 018	6 194 470	52,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G48	510 973	6 194 477	51,6	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G49	510 940	6 194 480	51,1	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G50	512 500	6 191 593	49,9	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G51	512 482	6 191 483	48,8	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G52	512 537	6 191 402	49,6	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G53	512 499	6 190 966	48,8	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G54	512 499	6 190 841	50,4	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G55	513 257	6 189 826	47,4	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G56	513 387	6 189 656	46,7	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G57	512 309	6 189 025	50,4	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G58	512 133	6 188 384	48,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0

Project:

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Calculated:

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SHADOW - Main Result

Calculation: SHADOW

Calculation Results

Shadow receptor

No.	Shadow, expected values	
	Shadow hours per year [h/year]	Avoided hours per year [h/year]
G01	26:25	
G02*	25:56	8:48
G03*	27:11	10:18
G04*	28:24	10:01
G05*	23:52	6:52
G06*	21:45	4:48
G07*	26:18	5:01
G08*	26:46	8:00
G09*	22:57	4:21
G10*	27:28	5:14
G11*	29:27	5:02
G12	26:06	
G13	21:57	
G14*	25:14	0:25
G15*	23:57	11:14
G16*	28:59	14:25
G17*	28:33	6:15
G18*	23:59	9:51
G19*	29:06	3:16
G20*	22:09	38:24
G21	8:06	
G22	7:06	
G23	10:01	
G24	11:19	
G25	12:02	
G26	10:11	
G27	5:08	
G28	6:46	
G29	6:39	
G30	6:33	
G31	6:29	
G32	8:07	
G33	8:15	
G34	8:28	
G35	9:11	
G36	27:27	
G37*	31:27	21:09
G38*	29:37	19:31
G39*	25:56	12:30
G40*	29:23	19:20
G41*	20:34	26:33
G42	26:01	
G43	22:55	
G44	15:00	
G45	14:09	
G46	14:24	
G47	14:56	
G48	15:40	
G49	16:48	
G50	15:33	
G51	9:35	
G52	10:32	
G53	18:57	
G54	25:41	
G55	18:10	
G56	16:56	
G57	19:13	
G58	18:09	

* Receptors where shadow flicker is reduced by curtailment

SHADOW - Main Result

Calculation: SHADOW

Total amount of flickering on the shadow receptors caused by each WTG

No.	Name	Stopped due to flicker curtailment [h/year]	Expected [h/year]
2	Siemens Gamesa SG 6.0-170 6600 170.0 !O! hub: 169,0 m (TOT: 254,0 m) (1)		13:54
3	Siemens Gamesa SG 6.0-170 6600 170.0 !O! hub: 169,0 m (TOT: 254,0 m) (2)		0:35
4	Siemens Gamesa SG 6.0-170 6600 170.0 !O! hub: 169,0 m (TOT: 254,0 m) (3)		0:00
5	Siemens Gamesa SG 6.0-170 6600 170.0 !O! hub: 169,0 m (TOT: 254,0 m) (4)		26:34
26	ENERCON E-175 EP5 6000 175.0 !O! hub: 182,5 m (TOT: 270,0 m) (47)		0:00
27	ENERCON E-175 EP5 6000 175.0 !O! hub: 182,5 m (TOT: 270,0 m) (48)		0:00
28	ENERCON E-175 EP5 6000 175.0 !O! hub: 182,5 m (TOT: 270,0 m) (49)		0:00
29	ENERCON E-175 EP5 6000 175.0 !O! hub: 182,5 m (TOT: 270,0 m) (50)		0:00
30	ENERCON E-175 EP5 6000 175.0 !O! hub: 182,5 m (TOT: 270,0 m) (51)		0:00
31	ENERCON E-175 EP5 6000 175.0 !O! hub: 182,5 m (TOT: 270,0 m) (52)		0:00
32	ENERCON E-175 EP5 6000 175.0 !O! hub: 182,5 m (TOT: 270,0 m) (53)		2:36
32	Hypotetic 8.0 8000 180.0 !-! hub: 170,0 m (TOT: 260,0 m) (44)		8:52
33	ENERCON E-175 EP5 6000 175.0 !O! hub: 182,5 m (TOT: 270,0 m) (54)		0:00
33	Hypotetic 8.0 8000 180.0 !-! hub: 170,0 m (TOT: 260,0 m) (45)		33:02
50	Hypotetic 8.0 8000 180.0 !-! hub: 170,0 m (TOT: 260,0 m) (43)		13:04
52	Hypotetic 8.0 8000 180.0 !-! hub: 170,0 m (TOT: 260,0 m) (38)		11:22
53	Hypotetic 8.0 8000 180.0 !-! hub: 170,0 m (TOT: 260,0 m) (39)		23:22
54	Hypotetic 8.0 8000 180.0 !-! hub: 170,0 m (TOT: 260,0 m) (40)		2:44
55	Hypotetic 8.0 8000 180.0 !-! hub: 170,0 m (TOT: 260,0 m) (41)		21:42
56	Hypotetic 8.0 8000 180.0 !-! hub: 170,0 m (TOT: 260,0 m) (42)		47:41
E-VE01	VESTAS V172-7.2 7200 172.0 !O! hub: 175,0 m (TOT: 261,0 m) (9)		12:44
E-VE02	VESTAS V172-7.2 7200 172.0 !O! hub: 175,0 m (TOT: 261,0 m) (10)	96:16	9:53
E-VE03	VESTAS V172-7.2 7200 172.0 !O! hub: 175,0 m (TOT: 261,0 m) (11)	45:49	1:55
E-VE04	VESTAS V172-7.2 7200 172.0 !O! hub: 175,0 m (TOT: 261,0 m) (12)	66:48	0:21
E-VE05	VESTAS V172-7.2 7200 172.0 !O! hub: 175,0 m (TOT: 261,0 m) (13)	2:48	5:40
E-VE06	VESTAS V172-7.2 7200 172.0 !O! hub: 175,0 m (TOT: 261,0 m) (14)	18:16	7:08
E-VE07	VESTAS V172-7.2 7200 172.0 !O! hub: 175,0 m (TOT: 261,0 m) (15)	95:42	2:26
E-VE08	VESTAS V172-7.2 7200 172.0 !O! hub: 175,0 m (TOT: 261,0 m) (16)		34:15
E-VE09	VESTAS V172-7.2 7200 172.0 !O! hub: 175,0 m (TOT: 261,0 m) (17)	82:24	2:06
E-VE10	VESTAS V172-7.2 7200 172.0 !O! hub: 175,0 m (TOT: 261,0 m) (18)		4:52
E-VE11	VESTAS V172-7.2 7200 172.0 !O! hub: 175,0 m (TOT: 261,0 m) (19)		1:39
E-VE12	VESTAS V172-7.2 7200 172.0 !O! hub: 175,0 m (TOT: 261,0 m) (20)		2:30
E-VE13	VESTAS V172-7.2 7200 172.0 !O! hub: 175,0 m (TOT: 261,0 m) (21)		1:31
E-VE14	VESTAS V172-7.2 7200 172.0 !O! hub: 175,0 m (TOT: 261,0 m) (22)		0:00
E-VE15	VESTAS V172-7.2 7200 172.0 !O! hub: 175,0 m (TOT: 261,0 m) (23)		11:23
E-VE16	VESTAS V172-7.2 7200 172.0 !O! hub: 175,0 m (TOT: 261,0 m) (24)		17:28
E-VE17	VESTAS V172-7.2 7200 172.0 !O! hub: 175,0 m (TOT: 261,0 m) (25)		15:48
E-VE18	VESTAS V172-7.2 7200 172.0 !O! hub: 175,0 m (TOT: 261,0 m) (26)		0:00
E-VE19	VESTAS V172-7.2 7200 172.0 !O! hub: 175,0 m (TOT: 261,0 m) (27)		0:00
E-VE20	VESTAS V172-7.2 7200 172.0 !O! hub: 175,0 m (TOT: 261,0 m) (28)		4:52
E-VE21	VESTAS V172-7.2 7200 172.0 !O! hub: 175,0 m (TOT: 261,0 m) (29)		0:00
E-VE22	VESTAS V172-7.2 7200 172.0 !O! hub: 175,0 m (TOT: 261,0 m) (30)		0:00
E-VE23	VESTAS V172-7.2 7200 172.0 !O! hub: 175,0 m (TOT: 261,0 m) (31)		0:00
E-VE24	VESTAS V172-7.2 7200 172.0 !O! hub: 175,0 m (TOT: 261,0 m) (32)		0:00
E-VE25	VESTAS V172-7.2 7200 172.0 !O! hub: 175,0 m (TOT: 261,0 m) (33)		0:00
E-VE26	VESTAS V172-7.2 7200 172.0 !O! hub: 175,0 m (TOT: 261,0 m) (34)		29:04
E-VE27	VESTAS V172-7.2 7200 172.0 !O! hub: 175,0 m (TOT: 261,0 m) (35)		14:11
N-VE01	VESTAS V172-7.2 7200 172.0 !O! hub: 175,0 m (TOT: 261,0 m) (1)		0:00
N-VE02	VESTAS V172-7.2 7200 172.0 !O! hub: 175,0 m (TOT: 261,0 m) (2)	28:22	18:47
N-VE03	VESTAS V172-7.2 7200 172.0 !O! hub: 175,0 m (TOT: 261,0 m) (3)		0:00
N-VE04	VESTAS V172-7.2 7200 172.0 !O! hub: 175,0 m (TOT: 261,0 m) (4)	30:15	6:58
N-VE05	VESTAS V172-7.2 7200 172.0 !O! hub: 175,0 m (TOT: 261,0 m) (5)	49:13	15:28
N-VE06	VESTAS V172-7.2 7200 172.0 !O! hub: 175,0 m (TOT: 261,0 m) (6)		13:02
N-VE07	VESTAS V172-7.2 7200 172.0 !O! hub: 175,0 m (TOT: 261,0 m) (7)	276:17	2:48
N-VE08	VESTAS V172-7.2 7200 172.0 !O! hub: 175,0 m (TOT: 261,0 m) (8)	124:46	16:14
VE06	Hypotetic 8.0 8000 180.0 !-! hub: 169,0 m (TOT: 259,0 m) (5)		1:08
VE07	Hypotetic 8.0 8000 180.0 !-! hub: 169,0 m (TOT: 259,0 m) (6)		6:47
VE1	Hypotetic 8.0 8000 180.0 !-! hub: 170,0 m (TOT: 260,0 m) (7)		48:23
VE1	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (21)		6:19
VE10	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (15)		0:00
VE11	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (14)		19:50
VE12	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (13)		9:31
VE13	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (26)		2:06
VE14	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (12)		0:00
VE15	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (24)		10:42

To be continued on next page...

Project:

UAB Eurostat 1 planuojamos ukinės veiklos – vejo elektriniu irengimas Pasvalio r. sav., Pusaloto sen., Pagirnupiu k., Jaciunu k., Matkunu k., Deglenu k., Daukuciu vs., Jakuboniu k., Sermuksniu k., Mickaiciu k., Budininku k., Kidzioniu k., Ozkyciu k. ir Panevezio r. sav., Panevezio sen., Pazuku k., Eimuliskio k., Grikpedziu k., Staciunu k.

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Calculated:

2024-11-22 13:29/4.1.254

SHADOW - Main Result

Calculation: SHADOW

...continued from previous page

No.	Name	Stopped due to flicker curtailment [h/year]	Expected [h/year]
VE16	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (27)		5:26
VE17	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (28)		1:32
VE18	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (25)		0:00
VE19	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (31)		13:29
VE2	Hypotetic 8.0 8000 180.0 !-! hub: 170,0 m (TOT: 260,0 m) (8)		18:19
VE2	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (32)		21:53
VE20	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (30)		0:00
VE21	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (29)		28:47
VE27	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (55)		1:10
VE29	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (56)		3:21
VE3	Hypotetic 8.0 8000 180.0 !-! hub: 170,0 m (TOT: 260,0 m) (9)		11:20
VE3	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (20)		0:00
VE4	Hypotetic 8.0 8000 180.0 !-! hub: 170,0 m (TOT: 260,0 m) (11)		0:00
VE4	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (19)		0:00
VE5	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (22)		11:37
VE6	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (23)		14:54
VE6	Hypotetic 8.0 8000 180.0 !-! hub: 170,0 m (TOT: 260,0 m) (10)		1:03
VE7	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (17)		4:55
VE8	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (18)		11:09
VE9	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (16)		16:56

Total times in Receptor wise and WTG wise tables can differ, as a WTG can lead to flicker at 2 or more receptors simultaneously and/or receptors may receive flicker from 2 or more WTGs simultaneously.

The calculation of the total expected values for a given receptor assumes a weighted average directional reduction for all WTGs contributing to shadow flicker within the same day. In the case where shadow flicker from different WTGs is not concurrent within the day, the total expected time at a given receptor may deviate marginally from the individual flicker time caused by each turbine separately.

**Prognozuojamas PŪV SUMINIS šešėliavimo vertinimas
"3" alternatyva**

Project:

UAB Eurostat 1 planuojamos ukines veiklos – vejo elektriniu irengimas Pasvalio r. sav., Pusaloto sen., Pagirnupiu k., Jaciunu k., Matkunu k., Deglenu k., Daukuciu vs., Jakuboniu k., Sermuksniu k., Mickaiciu k., Budininku k., Kidzioniu k., Ozkyciu k. ir Panevezio r. sav., Panevezio sen., Pazuku k., Eimuliskio k., Grippedziu k., Staciunu k.

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Calculated:

2024-11-22 09:41/4.1.254

SHADOW - Main Result

Calculation: SHADOW

Assumptions for shadow calculations

Maximum distance for influence

Calculate only when more than 20 % of sun is covered by the blade

Please look in WTG table

Minimum sun height over horizon for influence

3 °

Day step for calculation

1 days

Time step for calculation

1 minutes

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1,41	2,36	4,03	5,55	8,35	8,36	8,16	7,72	5,06	3,23	1,33	0,98

Operational hours are calculated from WTGs in calculation and wind distribution:

Site data: ATLAS; 12 sectors; Radius: 43 000 m (3)

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
950	503	233	287	575	629	761	1 009	1 179	999	754	542	8 420

Monthly aggregation of real case reduction

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

A ZVI (Zones of Visual Influence) calculation is performed before flicker

calculation so non visible WTG do not contribute to calculated flicker

values. A WTG will be visible if it is visible from any part of the receiver

window. The ZVI calculation is based on the following assumptions:

DHM: Project Wizard Elevation Data Grid (SRTM: Shuttle DTM 1 arc-second)

Receptor grid resolution: 1,0 m

Topographic shadow included in calculation

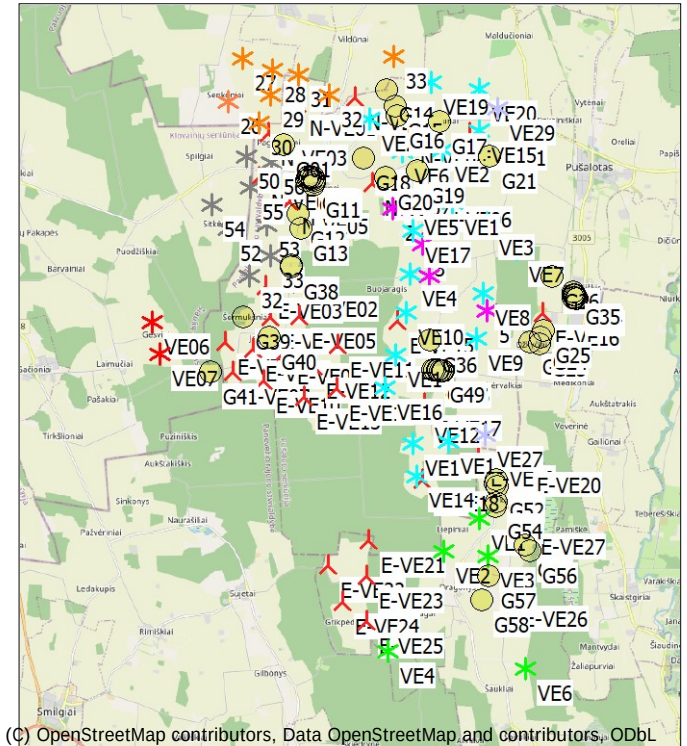
All coordinates are in

Lithuanian TM LKS94-LKS94 (LT)

WTGs

	Y	X	Z	Row data/Description	WTG type		Type-generator	Power, rated [kW]	Rotor diameter [m]	Hub height [m]	Shadow data	
					Valid	Manufact.					Calculation distance [m]	RPM [RPM]
			[m]									
2	509 738	6 198 776	48,0	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 600	6 600	170,0	169,0	2 037	8,8
3	510 515	6 197 797	51,2	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 600	6 600	170,0	169,0	2 037	8,8
4	510 709	6 196 958	48,6	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 600	6 600	170,0	169,0	2 037	8,8
5	512 239	6 196 056	46,0	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 600	6 600	170,0	169,0	2 037	8,8
26	505 388	6 201 560	51,3	ENERCON E-175 EP5 ...	Yes	ENERCON	E-175 EP5-6 000	6 000	175,0	182,5	1 735	-
27	505 734	6 202 721	51,9	ENERCON E-175 EP5 ...	Yes	ENERCON	E-175 EP5-6 000	6 000	175,0	182,5	1 735	-
28	506 531	6 202 422	50,0	ENERCON E-175 EP5 ...	Yes	ENERCON	E-175 EP5-6 000	6 000	175,0	182,5	1 735	-
29	506 492	6 201 745	49,9	ENERCON E-175 EP5 ...	Yes	ENERCON	E-175 EP5-6 000	6 000	175,0	182,5	1 735	-
30	506 188	6 201 006	51,7	ENERCON E-175 EP5 ...	Yes	ENERCON	E-175 EP5-6 000	6 000	175,0	182,5	1 735	-
31	507 234	6 202 266	51,5	ENERCON E-175 EP5 ...	Yes	ENERCON	E-175 EP5-6 000	6 000	175,0	182,5	1 735	-
32	508 050	6 201 749	49,0	ENERCON E-175 EP5 ...	Yes	ENERCON	E-175 EP5-6 000	6 000	175,0	182,5	1 735	-
32	505 943	6 196 959	51,3	Hypotetic 8.0 8000 1...	No	Hypotetic	8.0-8 000	8 000	180,0	170,0	2 500	-
33	509 743	6 202 761	45,3	ENERCON E-175 EP5 ...	Yes	ENERCON	E-175 EP5-6 000	6 000	175,0	182,5	1 735	-
33	506 501	6 197 500	52,2	Hypotetic 8.0 8000 1...	No	Hypotetic	8.0-8 000	8 000	180,0	170,0	2 500	-
50	505 860	6 200 126	53,8	Hypotetic 8.0 8000 1...	No	Hypotetic	8.0-8 000	8 000	180,0	170,0	2 500	-
52	505 377	6 198 220	53,0	Hypotetic 8.0 8000 1...	No	Hypotetic	8.0-8 000	8 000	180,0	170,0	2 500	-
53	506 394	6 198 319	53,1	Hypotetic 8.0 8000 1...	No	Hypotetic	8.0-8 000	8 000	180,0	170,0	2 500	-
54	504 944	6 198 838	51,4	Hypotetic 8.0 8000 1...	No	Hypotetic	8.0-8 000	8 000	180,0	170,0	2 500	-
55	505 959	6 199 299	51,4	Hypotetic 8.0 8000 1...	No	Hypotetic	8.0-8 000	8 000	180,0	170,0	2 500	-
56	506 528	6 199 986	49,3	Hypotetic 8.0 8000 1...	No	Hypotetic	8.0-8 000	8 000	180,0	170,0	2 500	-
E-VE01	511 774	6 200 739	47,5	Siemens Gamesa SG ...	Yes	Siemens Gamesa	SG 6.6-170-6 600	6 600	170,0	165,0	2 037	8,8
E-VE02	507 315	6 196 732	53,0	Siemens Gamesa SG ...	Yes	Siemens Gamesa	SG 6.6-170-6 600	6 600	170,0	165,0	2 037	8,8
E-VE03	506 375	6 196 675	54,7	Siemens Gamesa SG ...	Yes	Siemens Gamesa	SG 6.6-170-6 600	6 600	170,0	165,0	2 037	8,8
E-VE04	506 501	6 195 859	52,0	Siemens Gamesa SG ...	Yes	Siemens Gamesa	SG 6.6-170-6 600	6 600	170,0	165,0	2 037	8,8
E-VE05	507 253	6 195 881	52,2	Siemens Gamesa SG ...	Yes	Siemens Gamesa	SG 6.6-170-6 600	6 600	170,0	165,0	2 037	8,8
E-VE06	505 294	6 195 211	55,3	Siemens Gamesa SG ...	Yes	Siemens Gamesa	SG 6.6-170-6 600	6 600	170,0	165,0	2 037	8,8
E-VE07	505 491	6 194 401	54,0	Siemens Gamesa SG ...	Yes	Siemens Gamesa	SG 6.6-170-6 600	6 600	170,0	165,0	2 037	8,8
E-VE08	506 035	6 195 026	53,7	Siemens Gamesa SG ...	Yes	Siemens Gamesa	SG 6.6-170-6 600	6 600	170,0	165,0	2 037	8,8
E-VE09	506 884	6 194 962	53,3	Siemens Gamesa SG ...	Yes	Siemens Gamesa	SG 6.6-170-6 600	6 600	170,0	165,0	2 037	8,8

To be continued on next page...



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2024-11-22 09:41/4.1.254

SHADOW - Main Result

Calculation: SHADOW

...continued from previous page

	Y	X	Z	Row data/Description	WTG type		Type-generator	Power, rated [kW]	Rotor diameter [m]	Hub height [m]	Shadow data	
					Valid	Manufact.					Calculation distance [m]	RPM
			[m]									[RPM]
E-VE10	506 331	6 194 190	54,0	Siemens Gamesa SG ...	Yes	Siemens Gamesa	SG 6.6-170-6 600	6 600	170,0	165,0	2 037	8,8
E-VE11	508 295	6 195 151	50,4	Siemens Gamesa SG ...	Yes	Siemens Gamesa	SG 6.6-170-6 600	6 600	170,0	165,0	2 037	8,8
E-VE12	507 655	6 194 577	52,3	Siemens Gamesa SG ...	Yes	Siemens Gamesa	SG 6.6-170-6 600	6 600	170,0	165,0	2 037	8,8
E-VE13	507 391	6 193 769	53,5	Siemens Gamesa SG ...	Yes	Siemens Gamesa	SG 6.6-170-6 600	6 600	170,0	165,0	2 037	8,8
E-VE14	508 259	6 193 993	52,0	Siemens Gamesa SG ...	Yes	Siemens Gamesa	SG 6.6-170-6 600	6 600	170,0	165,0	2 037	8,8
E-VE15	509 883	6 195 766	50,4	Siemens Gamesa SG ...	Yes	Siemens Gamesa	SG 6.6-170-6 600	6 600	170,0	165,0	2 037	8,8
E-VE16	513 718	6 195 996	46,0	Siemens Gamesa SG ...	Yes	Siemens Gamesa	SG 6.6-170-6 600	6 600	170,0	165,0	2 037	8,8
E-VE17	510 597	6 193 591	53,2	Siemens Gamesa SG ...	Yes	Siemens Gamesa	SG 6.6-170-6 600	6 600	170,0	165,0	2 037	8,8
E-VE18	510 530	6 191 574	50,0	Siemens Gamesa SG ...	Yes	Siemens Gamesa	SG 6.6-170-6 600	6 600	170,0	165,0	2 037	8,8
E-VE19	512 020	6 192 269	46,3	Siemens Gamesa SG ...	Yes	Siemens Gamesa	SG 6.6-170-6 600	6 600	170,0	165,0	2 037	8,8
E-VE20	513 240	6 192 097	45,3	Siemens Gamesa SG ...	Yes	Siemens Gamesa	SG 6.6-170-6 600	6 600	170,0	165,0	2 037	8,8
E-VE21	509 118	6 189 929	53,2	Siemens Gamesa SG ...	Yes	Siemens Gamesa	SG 6.6-170-6 600	6 600	170,0	165,0	2 037	8,8
E-VE22	508 045	6 189 297	55,0	Siemens Gamesa SG ...	Yes	Siemens Gamesa	SG 6.6-170-6 600	6 600	170,0	165,0	2 037	8,8
E-VE23	509 083	6 189 002	52,3	Siemens Gamesa SG ...	Yes	Siemens Gamesa	SG 6.6-170-6 600	6 600	170,0	165,0	2 037	8,8
E-VE24	508 432	6 188 305	52,0	Siemens Gamesa SG ...	Yes	Siemens Gamesa	SG 6.6-170-6 600	6 600	170,0	165,0	2 037	8,8
E-VE25	509 068	6 187 814	51,8	Siemens Gamesa SG ...	Yes	Siemens Gamesa	SG 6.6-170-6 600	6 600	170,0	165,0	2 037	8,8
E-VE26	512 902	6 188 519	46,5	Siemens Gamesa SG ...	Yes	Siemens Gamesa	SG 6.6-170-6 600	6 600	170,0	165,0	2 037	8,8
E-VE27	513 359	6 190 431	47,0	Siemens Gamesa SG ...	Yes	Siemens Gamesa	SG 6.6-170-6 600	6 600	170,0	165,0	2 037	8,8
N-VE01	507 209	6 201 524	51,0	Siemens Gamesa SG ...	Yes	Siemens Gamesa	SG 6.6-170-6 600	6 600	170,0	165,0	2 037	8,8
N-VE02	508 734	6 201 665	47,0	Siemens Gamesa SG ...	Yes	Siemens Gamesa	SG 6.6-170-6 600	6 600	170,0	165,0	2 037	8,8
N-VE03	506 435	6 200 737	50,4	Siemens Gamesa SG ...	Yes	Siemens Gamesa	SG 6.6-170-6 600	6 600	170,0	165,0	2 037	8,8
N-VE04	506 209	6 199 545	52,6	Siemens Gamesa SG ...	Yes	Siemens Gamesa	SG 6.6-170-6 600	6 600	170,0	165,0	2 037	8,8
N-VE05	506 994	6 198 936	50,6	Siemens Gamesa SG ...	Yes	Siemens Gamesa	SG 6.6-170-6 600	6 600	170,0	165,0	2 037	8,8
N-VE06	510 789	6 199 120	51,0	Siemens Gamesa SG ...	Yes	Siemens Gamesa	SG 6.6-170-6 600	6 600	170,0	165,0	2 037	8,8
N-VE07	509 212	6 199 396	48,3	Siemens Gamesa SG ...	Yes	Siemens Gamesa	SG 6.6-170-6 600	6 600	170,0	165,0	2 037	8,8
N-VE08	510 142	6 200 713	47,9	Siemens Gamesa SG ...	Yes	Siemens Gamesa	SG 6.6-170-6 600	6 600	170,0	165,0	2 037	8,8
VE06	503 373	6 195 727	55,0	Hypotetic 8.0 8000 1...	No	Hypotetic	8.0-8 000	8 000	180,0	169,0	2 500	-
VE07	503 573	6 194 904	55,1	Hypotetic 8.0 8000 1...	No	Hypotetic	8.0-8 000	8 000	180,0	169,0	2 500	-
VE1	512 050	6 190 536	47,9	Hypotetic 8.0 8000 1...	No	Hypotetic	8.0-8 000	8 000	180,0	170,0	2 500	-
VE1	511 301	6 198 923	51,5	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	165,0	2 037	8,8
VE10	510 088	6 196 004	50,2	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	165,0	2 037	8,8
VE11	509 806	6 194 891	51,0	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	165,0	2 037	8,8
VE12	510 539	6 193 414	50,1	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	165,0	2 037	8,8
VE13	511 243	6 192 588	48,0	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	165,0	2 037	8,8
VE14	510 388	6 191 665	50,0	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	165,0	2 037	8,8
VE15	512 026	6 200 837	46,0	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	165,0	2 037	8,8
VE16	509 529	6 193 999	50,7	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	165,0	2 037	8,8
VE17	510 273	6 198 161	47,0	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	165,0	2 037	8,8
VE18	510 269	6 192 543	51,0	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	165,0	2 037	8,8
VE19	510 745	6 202 082	46,0	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	165,0	2 037	8,8
VE2	511 090	6 189 666	49,3	Hypotetic 8.0 8000 1...	No	Hypotetic	8.0-8 000	8 000	180,0	170,0	2 500	-
VE2	511 042	6 200 317	48,9	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	165,0	2 037	8,8
VE20	512 003	6 201 911	48,6	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	165,0	2 037	8,8
VE21	509 115	6 201 121	48,0	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	165,0	2 037	8,8
VE27	512 196	6 192 765	43,3	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	165,0	2 037	8,8
VE29	512 502	6 201 414	49,7	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	165,0	2 037	8,8
VE3	512 280	6 189 536	48,6	Hypotetic 8.0 8000 1...	No	Hypotetic	8.0-8 000	8 000	180,0	170,0	2 500	-
VE3	512 241	6 198 372	46,5	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	165,0	2 037	8,8
VE4	509 643	6 187 021	52,0	Hypotetic 8.0 8000 1...	No	Hypotetic	8.0-8 000	8 000	180,0	170,0	2 500	-
VE4	510 190	6 197 025	50,4	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	165,0	2 037	8,8
VE5	510 233	6 198 924	49,3	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	165,0	2 037	8,8
VE6	509 964	6 200 239	47,0	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	165,0	2 037	8,8
VE6	513 271	6 186 583	45,3	Hypotetic 8.0 8000 1...	No	Hypotetic	8.0-8 000	8 000	180,0	170,0	2 500	-
VE7	513 029	6 197 660	47,0	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	165,0	2 037	8,8
VE8	512 122	6 196 524	48,3	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	165,0	2 037	8,8
VE9	511 961	6 195 326	48,8	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	165,0	2 037	8,8

Shadow receptor-Input

No.	Y	X	Z	Width	Height	Elevation a.g.l.	Slope of window	Direction mode	Eye height (ZVI) a.g.l.
			[m]	[m]	[m]	[m]	[°]		[m]
G01	506 843	6 200 422	54,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G02	507 506	6 199 600	51,9	1,0	1,0	1,0	90,0	"Green house mode"	2,0

To be continued on next page...

UAB Eurostat 1 planuojamos ukines veiklos – vejo elektriniu irengimas Pasvalio r. sav., Pusaloto sen., Pagirnupiu k., Jaciunu k., Matkunu k., Deglenu k., Daukuciu vs., Jakuboniu k., Sermuksniu k., Mickaiciu k., Budininku k., Kidzioniu k., Ozkyciu k. ir Panevezio r. sav., Panevezio sen., Pazuku k., Eimuliskio k., Grippedziu k., Staciunu k.

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SHADOW - Main Result

Calculation: SHADOW

...continued from previous page

No.	Y	X	Z	Width	Height	Elevation a.g.l.	Slope of window	Direction mode	Eye height (ZVI) a.g.l.
			[m]	[m]	[m]	[m]	[°]		[m]
G03	507 490	6 199 545	52,7	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G04	507 464	6 199 492	53,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G05	507 561	6 199 583	52,4	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G06	507 632	6 199 555	53,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G07	507 619	6 199 509	53,5	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G08	507 537	6 199 529	52,3	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G09	507 682	6 199 497	53,8	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G10	507 669	6 199 423	53,1	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G11	507 642	6 199 366	54,3	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G12	507 228	6 198 595	55,8	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G13	507 313	6 198 194	54,4	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G14	509 558	6 201 886	47,1	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G15	509 794	6 201 446	49,3	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G16	509 856	6 201 185	51,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G17	510 988	6 201 034	51,6	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G18	508 962	6 200 071	50,7	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G19	510 413	6 199 759	48,9	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G20	509 553	6 199 558	53,4	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G21	512 320	6 200 121	50,9	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G22	513 368	6 195 217	46,4	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G23	513 633	6 195 185	45,8	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G24	513 680	6 195 355	46,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G25	513 740	6 195 540	45,6	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G26	513 978	6 196 950	47,1	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G27	514 634	6 196 384	46,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G28	514 618	6 196 386	45,9	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G29	514 593	6 196 389	45,7	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G30	514 567	6 196 392	44,3	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G31	514 535	6 196 397	43,3	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G32	514 544	6 196 497	44,3	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G33	514 564	6 196 494	45,2	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G34	514 587	6 196 492	45,9	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G35	514 541	6 196 549	43,6	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G36	510 744	6 195 273	52,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G37	507 058	6 197 245	55,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G38	507 055	6 197 200	55,4	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G39	505 767	6 195 866	56,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G40	506 485	6 195 329	55,6	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G41	504 924	6 194 409	55,7	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G42	510 825	6 194 492	51,1	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G43	510 860	6 194 485	51,5	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G44	511 099	6 194 463	50,7	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G45	511 072	6 194 465	51,4	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G46	511 051	6 194 468	52,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G47	511 018	6 194 470	52,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G48	510 973	6 194 477	51,6	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G49	510 940	6 194 480	51,1	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G50	512 500	6 191 593	49,9	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G51	512 482	6 191 483	48,8	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G52	512 537	6 191 402	49,6	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G53	512 499	6 190 966	48,8	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G54	512 499	6 190 841	50,4	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G55	513 257	6 189 826	47,4	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G56	513 387	6 189 656	46,7	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G57	512 309	6 189 025	50,4	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G58	512 133	6 188 384	48,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0

Project:

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SHADOW - Main Result

Calculation: SHADOW

Calculation Results

Shadow receptor

Shadow, expected values

No. Shadow hours

per year

[h/year]

G01	26:46
G02	34:16
G03	36:57
G04	37:43
G05	30:14
G06	26:00
G07	30:41
G08	34:10
G09	26:45
G10	32:12
G11	34:00
G12	26:06
G13	21:46
G14	25:10
G15	34:35
G16	43:05
G17	34:27
G18	33:28
G19	32:46
G20	58:54
G21	8:00
G22	7:06
G23	10:01
G24	11:19
G25	12:02
G26	9:45
G27	4:59
G28	6:37
G29	6:29
G30	6:23
G31	6:18
G32	8:01
G33	8:09
G34	8:23
G35	9:03
G36	28:21
G37	52:08
G38	48:13
G39	36:21
G40	48:34
G41	47:22
G42	25:35
G43	22:31
G44	14:50
G45	13:56
G46	14:10
G47	14:39
G48	15:21
G49	16:27
G50	18:32
G51	11:06
G52	11:58
G53	18:51
G54	25:30
G55	17:46
G56	16:37
G57	19:01
G58	17:05

SHADOW - Main Result

Calculation: SHADOW

Total amount of flickering on the shadow receptors caused by each WTG

No.	Name	Expected [h/year]
2	Siemens Gamesa SG 6.0-170 6600 170.0 !O! hub: 169,0 m (TOT: 254,0 m) (1)	13:54
3	Siemens Gamesa SG 6.0-170 6600 170.0 !O! hub: 169,0 m (TOT: 254,0 m) (2)	0:35
4	Siemens Gamesa SG 6.0-170 6600 170.0 !O! hub: 169,0 m (TOT: 254,0 m) (3)	0:00
5	Siemens Gamesa SG 6.0-170 6600 170.0 !O! hub: 169,0 m (TOT: 254,0 m) (4)	26:33
26	ENERCON E-175 EP5 6000 175.0 !O! hub: 182,5 m (TOT: 270,0 m) (47)	0:00
27	ENERCON E-175 EP5 6000 175.0 !O! hub: 182,5 m (TOT: 270,0 m) (48)	0:00
28	ENERCON E-175 EP5 6000 175.0 !O! hub: 182,5 m (TOT: 270,0 m) (49)	0:00
29	ENERCON E-175 EP5 6000 175.0 !O! hub: 182,5 m (TOT: 270,0 m) (50)	0:00
30	ENERCON E-175 EP5 6000 175.0 !O! hub: 182,5 m (TOT: 270,0 m) (51)	0:00
31	ENERCON E-175 EP5 6000 175.0 !O! hub: 182,5 m (TOT: 270,0 m) (52)	0:00
32	ENERCON E-175 EP5 6000 175.0 !O! hub: 182,5 m (TOT: 270,0 m) (53)	2:36
32	Hypotetic 8.0 8000 180.0 !-! hub: 170,0 m (TOT: 260,0 m) (44)	8:52
33	ENERCON E-175 EP5 6000 175.0 !O! hub: 182,5 m (TOT: 270,0 m) (54)	0:00
33	Hypotetic 8.0 8000 180.0 !-! hub: 170,0 m (TOT: 260,0 m) (45)	33:02
50	Hypotetic 8.0 8000 180.0 !-! hub: 170,0 m (TOT: 260,0 m) (43)	13:04
52	Hypotetic 8.0 8000 180.0 !-! hub: 170,0 m (TOT: 260,0 m) (38)	11:22
53	Hypotetic 8.0 8000 180.0 !-! hub: 170,0 m (TOT: 260,0 m) (39)	23:21
54	Hypotetic 8.0 8000 180.0 !-! hub: 170,0 m (TOT: 260,0 m) (40)	2:44
55	Hypotetic 8.0 8000 180.0 !-! hub: 170,0 m (TOT: 260,0 m) (41)	21:41
56	Hypotetic 8.0 8000 180.0 !-! hub: 170,0 m (TOT: 260,0 m) (42)	47:40
E-VE01	Siemens Gamesa SG 6.6-170 6600 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (9)	13:55
E-VE02	Siemens Gamesa SG 6.6-170 6600 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (10)	22:52
E-VE03	Siemens Gamesa SG 6.6-170 6600 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (11)	9:21
E-VE04	Siemens Gamesa SG 6.6-170 6600 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (12)	14:26
E-VE05	Siemens Gamesa SG 6.6-170 6600 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (13)	6:59
E-VE06	Siemens Gamesa SG 6.6-170 6600 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (14)	11:05
E-VE07	Siemens Gamesa SG 6.6-170 6600 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (15)	27:20
E-VE08	Siemens Gamesa SG 6.6-170 6600 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (16)	33:39
E-VE09	Siemens Gamesa SG 6.6-170 6600 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (17)	18:32
E-VE10	Siemens Gamesa SG 6.6-170 6600 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (18)	4:21
E-VE11	Siemens Gamesa SG 6.6-170 6600 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (19)	1:32
E-VE12	Siemens Gamesa SG 6.6-170 6600 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (20)	2:27
E-VE13	Siemens Gamesa SG 6.6-170 6600 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (21)	1:19
E-VE14	Siemens Gamesa SG 6.6-170 6600 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (22)	0:00
E-VE15	Siemens Gamesa SG 6.6-170 6600 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (23)	12:18
E-VE16	Siemens Gamesa SG 6.6-170 6600 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (24)	16:44
E-VE17	Siemens Gamesa SG 6.6-170 6600 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (25)	15:02
E-VE18	Siemens Gamesa SG 6.6-170 6600 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (26)	3:08
E-VE19	Siemens Gamesa SG 6.6-170 6600 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (27)	0:00
E-VE20	Siemens Gamesa SG 6.6-170 6600 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (28)	6:30
E-VE21	Siemens Gamesa SG 6.6-170 6600 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (29)	0:00
E-VE22	Siemens Gamesa SG 6.6-170 6600 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (30)	0:00
E-VE23	Siemens Gamesa SG 6.6-170 6600 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (31)	0:00
E-VE24	Siemens Gamesa SG 6.6-170 6600 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (32)	0:00
E-VE25	Siemens Gamesa SG 6.6-170 6600 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (33)	0:00
E-VE26	Siemens Gamesa SG 6.6-170 6600 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (34)	27:06
E-VE27	Siemens Gamesa SG 6.6-170 6600 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (35)	13:59
N-VE01	Siemens Gamesa SG 6.6-170 6600 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (1)	0:00
N-VE02	Siemens Gamesa SG 6.6-170 6600 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (2)	24:36
N-VE03	Siemens Gamesa SG 6.6-170 6600 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (3)	0:00
N-VE04	Siemens Gamesa SG 6.6-170 6600 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (4)	14:21
N-VE05	Siemens Gamesa SG 6.6-170 6600 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (5)	21:33
N-VE06	Siemens Gamesa SG 6.6-170 6600 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (6)	13:08
N-VE07	Siemens Gamesa SG 6.6-170 6600 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (7)	55:17
N-VE08	Siemens Gamesa SG 6.6-170 6600 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (8)	36:11
VE06	Hypotetic 8.0 8000 180.0 !-! hub: 169,0 m (TOT: 259,0 m) (5)	1:08
VE07	Hypotetic 8.0 8000 180.0 !-! hub: 169,0 m (TOT: 259,0 m) (6)	6:47
VE1	Hypotetic 8.0 8000 180.0 !-! hub: 170,0 m (TOT: 260,0 m) (7)	48:21
VE1	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (21)	6:19
VE10	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (15)	0:00
VE11	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (14)	19:50
VE12	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (13)	9:31
VE13	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (26)	2:06
VE14	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (12)	0:00
VE15	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (24)	10:42

To be continued on next page...

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SHADOW - Main Result

Calculation: SHADOW

...continued from previous page

No.	Name	Expected [h/year]
VE16	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (27)	5:26
VE17	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (28)	1:32
VE18	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (25)	0:00
VE19	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (31)	13:28
VE2	Hypotetic 8.0 8000 180.0 !-! hub: 170,0 m (TOT: 260,0 m) (8)	18:18
VE2	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (32)	21:53
VE20	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (30)	0:00
VE21	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (29)	28:46
VE27	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (55)	1:10
VE29	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (56)	3:21
VE3	Hypotetic 8.0 8000 180.0 !-! hub: 170,0 m (TOT: 260,0 m) (9)	11:20
VE3	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (20)	0:00
VE4	Hypotetic 8.0 8000 180.0 !-! hub: 170,0 m (TOT: 260,0 m) (11)	0:00
VE4	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (19)	0:00
VE5	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (22)	11:37
VE6	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (23)	14:54
VE6	Hypotetic 8.0 8000 180.0 !-! hub: 170,0 m (TOT: 260,0 m) (10)	1:03
VE7	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (17)	4:54
VE8	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (18)	11:09
VE9	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (16)	16:55

Total times in Receptor wise and WTG wise tables can differ, as a WTG can lead to flicker at 2 or more receptors simultaneously and/or receptors may receive flicker from 2 or more WTGs simultaneously.

The calculation of the total expected values for a given receptor assumes a weighted average directional reduction for all WTGs contributing to shadow flicker within the same day. In the case where shadow flicker from different WTGs is not concurrent within the day, the total expected time at a given receptor may deviate marginally from the individual flicker time caused by each turbine separately.

Project:

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Licensed user:

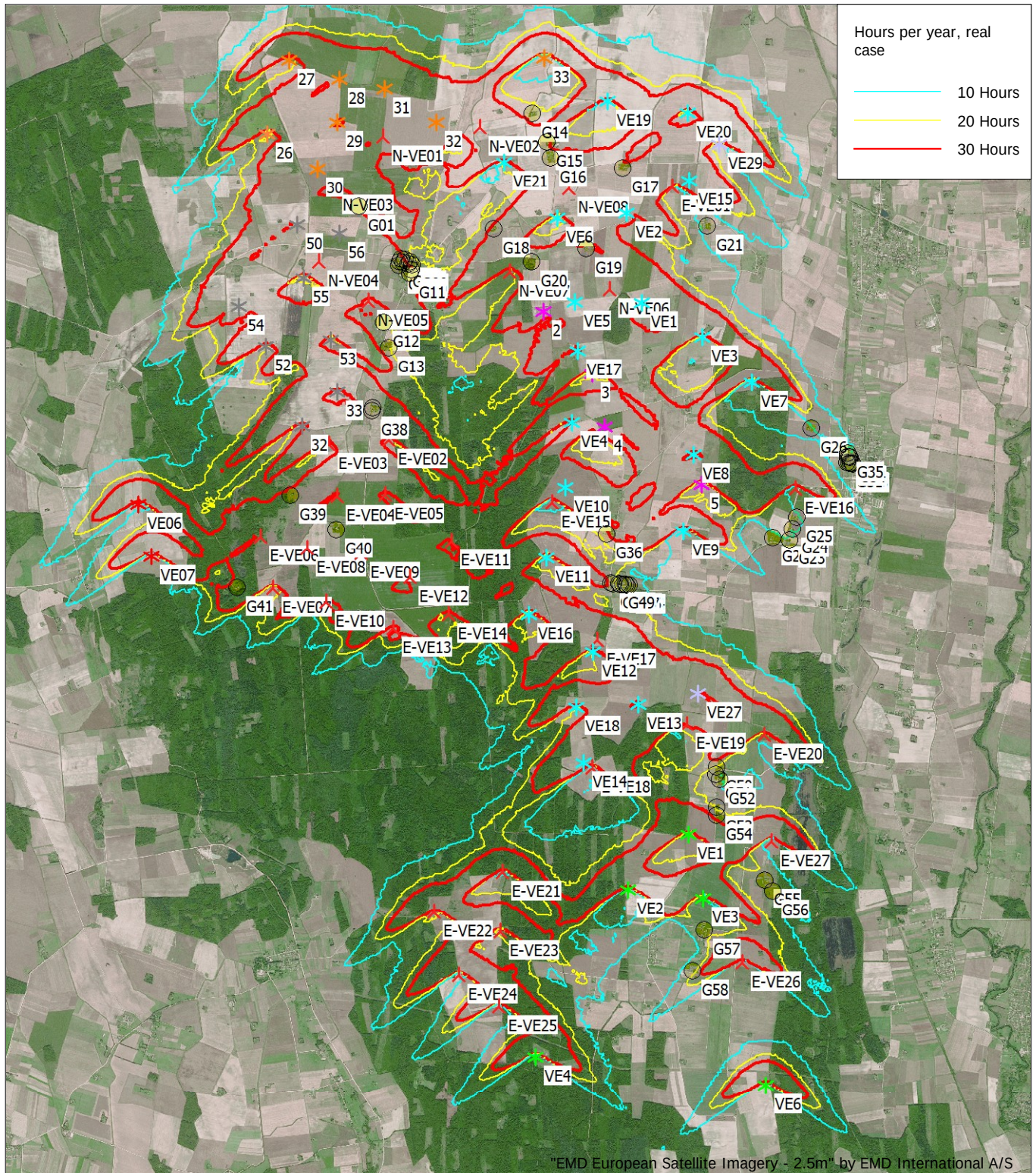
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Calculated:

2024-11-22 09:41/4.1.254

SHADOW - Map

Calculation: SHADOW



Map: windPRO European Satellite Imagery - 2.5 m , Print scale 1:90 000, Map center Lithuanian TM LKS94-LKS94 (LT) East: 509 712 North: 6 194 753
New WTG Existing WTG Shadow receptor
Flicker map level: Project Wizard Elevation Data Grid (SRTM: Shuttle DTM 1 arc-second)
Time step: 4 minutes, Day step: 14 days, Map resolution: 30 m, Visibility resolution: 15 m, Eye height: 1,5 m

**PŪV SUMINIS šešėliavimo
mažinimas (shadow shut-down)
"3" alternatyva**

Project:

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SHADOW - Main Result

Calculation: SHADOW

Assumptions for shadow calculations

Maximum distance for influence

Calculate only when more than 20 % of sun is covered by the blade

Please look in WTG table

Minimum sun height over horizon for influence

3 °

Day step for calculation

1 days

Time step for calculation

1 minutes

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1,41	2,36	4,03	5,55	8,35	8,36	8,16	7,72	5,06	3,23	1,33	0,98

Operational hours are calculated from WTGs in calculation and wind distribution:

Site data: ATLAS; 12 sectors; Radius: 43 000 m (3)

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
950	503	233	287	575	629	761	1 009	1 179	999	754	542	8 420

Monthly aggregation of real case reduction

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

Flicker curtailment by stopping specific turbines

A ZVI (Zones of Visual Influence) calculation is performed before flicker calculation so non visible WTG do not contribute to calculated flicker values. A WTG will be visible if it is visible from any part of the receiver window. The ZVI calculation is based on the following assumptions:

DHM: Project Wizard Elevation Data Grid (SRTM: Shuttle DTM 1 arc-second)

Receptor grid resolution: 1,0 m

Topographic shadow included in calculation

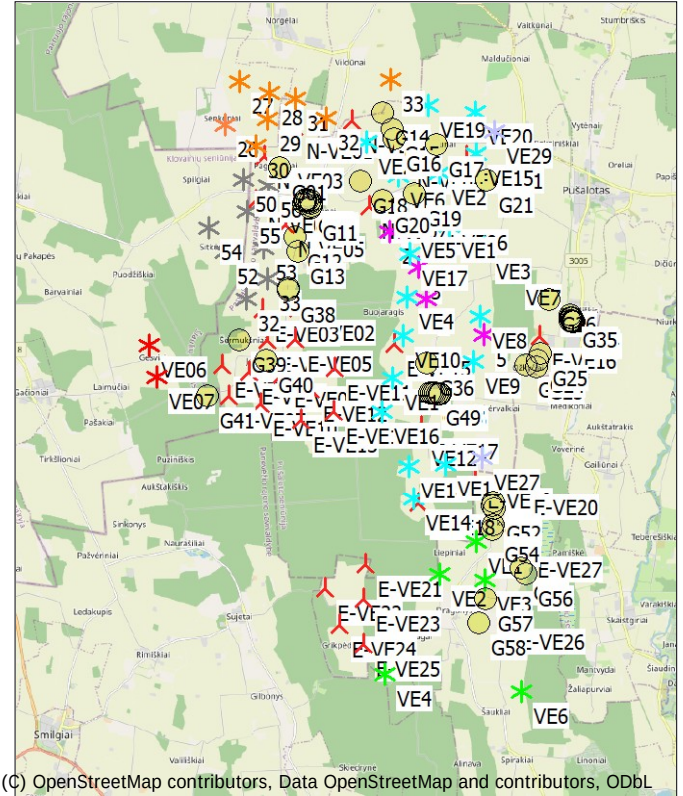
All coordinates are in

Lithuanian TM LKS94-LKS94 (LT)

WTGs

	Y	X	Z	Row data/Description	WTG type		Type-generator	Power, rated [kW]	Rotor diameter [m]	Hub height [m]	Shadow data	
					Valid	Manufact.					Calculation distance [m]	RPM
			[m]									[RPM]
2	509 738	6 198 776	48,0	Siemens Gamesa SG ... No	No	Siemens Gamesa	SG 6.0-170-6 600	6 600	170,0	169,0	2 037	8,8
3	510 515	6 197 797	51,2	Siemens Gamesa SG ... No	No	Siemens Gamesa	SG 6.0-170-6 600	6 600	170,0	169,0	2 037	8,8
4	510 709	6 196 958	48,6	Siemens Gamesa SG ... No	No	Siemens Gamesa	SG 6.0-170-6 600	6 600	170,0	169,0	2 037	8,8
5	512 239	6 196 056	46,0	Siemens Gamesa SG ... No	No	Siemens Gamesa	SG 6.0-170-6 600	6 600	170,0	169,0	2 037	8,8
26	505 388	6 201 560	51,3	ENERCON E-175 EP5 ... Yes	Yes	ENERCON	E-175 EP5-6 000	6 000	175,0	182,5	1 735	-
27	505 734	6 202 721	51,9	ENERCON E-175 EP5 ... Yes	Yes	ENERCON	E-175 EP5-6 000	6 000	175,0	182,5	1 735	-
28	506 531	6 202 422	50,0	ENERCON E-175 EP5 ... Yes	Yes	ENERCON	E-175 EP5-6 000	6 000	175,0	182,5	1 735	-
29	506 492	6 201 745	49,9	ENERCON E-175 EP5 ... Yes	Yes	ENERCON	E-175 EP5-6 000	6 000	175,0	182,5	1 735	-
30	506 188	6 201 006	51,7	ENERCON E-175 EP5 ... Yes	Yes	ENERCON	E-175 EP5-6 000	6 000	175,0	182,5	1 735	-
31	507 234	6 202 266	51,5	ENERCON E-175 EP5 ... Yes	Yes	ENERCON	E-175 EP5-6 000	6 000	175,0	182,5	1 735	-
32	508 050	6 201 749	49,0	ENERCON E-175 EP5 ... Yes	Yes	ENERCON	E-175 EP5-6 000	6 000	175,0	182,5	1 735	-
32	505 943	6 196 959	51,3	Hypotetic 8.0 8000 1... No	No	Hypotetic	8.0-8 000	8 000	180,0	170,0	2 500	-
33	509 743	6 202 761	45,3	ENERCON E-175 EP5 ... Yes	Yes	ENERCON	E-175 EP5-6 000	6 000	175,0	182,5	1 735	-
33	506 501	6 197 500	52,2	Hypotetic 8.0 8000 1... No	No	Hypotetic	8.0-8 000	8 000	180,0	170,0	2 500	-
50	505 860	6 200 126	53,8	Hypotetic 8.0 8000 1... No	No	Hypotetic	8.0-8 000	8 000	180,0	170,0	2 500	-
52	505 377	6 198 220	53,0	Hypotetic 8.0 8000 1... No	No	Hypotetic	8.0-8 000	8 000	180,0	170,0	2 500	-
53	506 394	6 198 319	53,1	Hypotetic 8.0 8000 1... No	No	Hypotetic	8.0-8 000	8 000	180,0	170,0	2 500	-
54	504 944	6 198 838	51,4	Hypotetic 8.0 8000 1... No	No	Hypotetic	8.0-8 000	8 000	180,0	170,0	2 500	-
55	505 959	6 199 299	51,4	Hypotetic 8.0 8000 1... No	No	Hypotetic	8.0-8 000	8 000	180,0	170,0	2 500	-
56	506 528	6 199 986	49,3	Hypotetic 8.0 8000 1... No	No	Hypotetic	8.0-8 000	8 000	180,0	170,0	2 500	-
E-VE01	511 774	6 200 739	47,5	Siemens Gamesa SG ... Yes	Yes	Siemens Gamesa	SG 6.6-170-6 600	6 600	170,0	165,0	2 037	8,8
E-VE02	507 315	6 196 732	53,0	Siemens Gamesa SG ... Yes	Yes	Siemens Gamesa	SG 6.6-170-6 600	6 600	170,0	165,0	2 037	8,8
E-VE03	506 375	6 196 675	54,7	Siemens Gamesa SG ... Yes	Yes	Siemens Gamesa	SG 6.6-170-6 600	6 600	170,0	165,0	2 037	8,8
E-VE04	506 501	6 195 859	52,0	Siemens Gamesa SG ... Yes	Yes	Siemens Gamesa	SG 6.6-170-6 600	6 600	170,0	165,0	2 037	8,8
E-VE05	507 253	6 195 881	52,2	Siemens Gamesa SG ... Yes	Yes	Siemens Gamesa	SG 6.6-170-6 600	6 600	170,0	165,0	2 037	8,8
E-VE06	505 294	6 195 211	55,3	Siemens Gamesa SG ... Yes	Yes	Siemens Gamesa	SG 6.6-170-6 600	6 600	170,0	165,0	2 037	8,8
E-VE07	505 491	6 194 401	54,0	Siemens Gamesa SG ... Yes	Yes	Siemens Gamesa	SG 6.6-170-6 600	6 600	170,0	165,0	2 037	8,8

To be continued on next page...



Scale 1:200 000
New WTG
Shadow receptor
Existing WTG

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Panevezio r. sav., Panevezio sen., Pazuku k., Eimuliskio k., Grippedziu k., Staciunu k.

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SHADOW - Main Result

Calculation: SHADOW

...continued from previous page

	Y	X	Z	Row data/Description	WTG type		Type-generator	Power, rated [kW]	Rotor diameter [m]	Hub height [m]	Shadow data	
					Valid	Manufact.					Calculation distance [m]	RPM
			[m]									[RPM]
E-VE08	506 035	6 195 026	53,7	Siemens Gamesa SG ...	Yes	Siemens Gamesa	SG 6.6-170-6 600	6 600	170,0	165,0	2 037	8,8
E-VE09	506 884	6 194 962	53,3	Siemens Gamesa SG ...	Yes	Siemens Gamesa	SG 6.6-170-6 600	6 600	170,0	165,0	2 037	8,8
E-VE10	506 331	6 194 190	54,0	Siemens Gamesa SG ...	Yes	Siemens Gamesa	SG 6.6-170-6 600	6 600	170,0	165,0	2 037	8,8
E-VE11	508 295	6 195 151	50,4	Siemens Gamesa SG ...	Yes	Siemens Gamesa	SG 6.6-170-6 600	6 600	170,0	165,0	2 037	8,8
E-VE12	507 655	6 194 577	52,3	Siemens Gamesa SG ...	Yes	Siemens Gamesa	SG 6.6-170-6 600	6 600	170,0	165,0	2 037	8,8
E-VE13	507 391	6 193 769	53,5	Siemens Gamesa SG ...	Yes	Siemens Gamesa	SG 6.6-170-6 600	6 600	170,0	165,0	2 037	8,8
E-VE14	508 259	6 193 993	52,0	Siemens Gamesa SG ...	Yes	Siemens Gamesa	SG 6.6-170-6 600	6 600	170,0	165,0	2 037	8,8
E-VE15	509 883	6 195 766	50,4	Siemens Gamesa SG ...	Yes	Siemens Gamesa	SG 6.6-170-6 600	6 600	170,0	165,0	2 037	8,8
E-VE16	513 718	6 195 996	46,0	Siemens Gamesa SG ...	Yes	Siemens Gamesa	SG 6.6-170-6 600	6 600	170,0	165,0	2 037	8,8
E-VE17	510 597	6 193 591	53,2	Siemens Gamesa SG ...	Yes	Siemens Gamesa	SG 6.6-170-6 600	6 600	170,0	165,0	2 037	8,8
E-VE18	510 506	6 191 574	50,0	Siemens Gamesa SG ...	Yes	Siemens Gamesa	SG 6.6-170-6 600	6 600	170,0	165,0	2 037	8,8
E-VE19	512 020	6 192 269	46,3	Siemens Gamesa SG ...	Yes	Siemens Gamesa	SG 6.6-170-6 600	6 600	170,0	165,0	2 037	8,8
E-VE20	513 240	6 192 097	45,3	Siemens Gamesa SG ...	Yes	Siemens Gamesa	SG 6.6-170-6 600	6 600	170,0	165,0	2 037	8,8
E-VE21	509 118	6 189 929	53,2	Siemens Gamesa SG ...	Yes	Siemens Gamesa	SG 6.6-170-6 600	6 600	170,0	165,0	2 037	8,8
E-VE22	508 045	6 189 297	55,0	Siemens Gamesa SG ...	Yes	Siemens Gamesa	SG 6.6-170-6 600	6 600	170,0	165,0	2 037	8,8
E-VE23	509 083	6 189 002	52,3	Siemens Gamesa SG ...	Yes	Siemens Gamesa	SG 6.6-170-6 600	6 600	170,0	165,0	2 037	8,8
E-VE24	508 432	6 188 305	52,0	Siemens Gamesa SG ...	Yes	Siemens Gamesa	SG 6.6-170-6 600	6 600	170,0	165,0	2 037	8,8
E-VE25	509 068	6 187 814	51,8	Siemens Gamesa SG ...	Yes	Siemens Gamesa	SG 6.6-170-6 600	6 600	170,0	165,0	2 037	8,8
E-VE26	512 902	6 188 519	46,5	Siemens Gamesa SG ...	Yes	Siemens Gamesa	SG 6.6-170-6 600	6 600	170,0	165,0	2 037	8,8
E-VE27	513 359	6 190 431	47,0	Siemens Gamesa SG ...	Yes	Siemens Gamesa	SG 6.6-170-6 600	6 600	170,0	165,0	2 037	8,8
N-VE01	507 209	6 201 524	51,0	Siemens Gamesa SG ...	Yes	Siemens Gamesa	SG 6.6-170-6 600	6 600	170,0	165,0	2 037	8,8
N-VE02	508 734	6 201 665	47,0	Siemens Gamesa SG ...	Yes	Siemens Gamesa	SG 6.6-170-6 600	6 600	170,0	165,0	2 037	8,8
N-VE03	506 435	6 200 737	50,4	Siemens Gamesa SG ...	Yes	Siemens Gamesa	SG 6.6-170-6 600	6 600	170,0	165,0	2 037	8,8
N-VE04	506 209	6 199 545	52,6	Siemens Gamesa SG ...	Yes	Siemens Gamesa	SG 6.6-170-6 600	6 600	170,0	165,0	2 037	8,8
N-VE05	506 994	6 198 936	50,6	Siemens Gamesa SG ...	Yes	Siemens Gamesa	SG 6.6-170-6 600	6 600	170,0	165,0	2 037	8,8
N-VE06	510 789	6 199 120	51,0	Siemens Gamesa SG ...	Yes	Siemens Gamesa	SG 6.6-170-6 600	6 600	170,0	165,0	2 037	8,8
N-VE07	509 212	6 199 396	48,3	Siemens Gamesa SG ...	Yes	Siemens Gamesa	SG 6.6-170-6 600	6 600	170,0	165,0	2 037	8,8
N-VE08	510 142	6 200 713	47,9	Siemens Gamesa SG ...	Yes	Siemens Gamesa	SG 6.6-170-6 600	6 600	170,0	165,0	2 037	8,8
VE06	503 373	6 195 727	55,0	Hypotetic 8.0 8000 1...	No	Hypotetic	8.0-8 000	8 000	180,0	169,0	2 500	-
VE07	503 573	6 194 904	55,1	Hypotetic 8.0 8000 1...	No	Hypotetic	8.0-8 000	8 000	180,0	169,0	2 500	-
VE1	512 050	6 190 536	47,9	Hypotetic 8.0 8000 1...	No	Hypotetic	8.0-8 000	8 000	180,0	170,0	2 500	-
VE1	511 301	6 198 923	51,5	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	165,0	2 037	8,8
VE10	510 088	6 196 004	50,2	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	165,0	2 037	8,8
VE11	509 806	6 194 891	51,0	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	165,0	2 037	8,8
VE12	510 539	6 193 414	50,1	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	165,0	2 037	8,8
VE13	511 243	6 192 588	48,0	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	165,0	2 037	8,8
VE14	510 388	6 191 665	50,0	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	165,0	2 037	8,8
VE15	512 026	6 200 837	46,0	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	165,0	2 037	8,8
VE16	509 529	6 193 999	50,7	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	165,0	2 037	8,8
VE17	510 273	6 198 161	47,0	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	165,0	2 037	8,8
VE18	510 269	6 192 543	51,0	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	165,0	2 037	8,8
VE19	510 745	6 202 082	46,0	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	165,0	2 037	8,8
VE2	511 090	6 189 666	49,3	Hypotetic 8.0 8000 1...	No	Hypotetic	8.0-8 000	8 000	180,0	170,0	2 500	-
VE2	511 042	6 200 317	48,9	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	165,0	2 037	8,8
VE20	512 003	6 201 911	48,6	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	165,0	2 037	8,8
VE21	509 115	6 201 121	48,0	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	165,0	2 037	8,8
VE27	512 196	6 192 765	43,3	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	165,0	2 037	8,8
VE29	512 502	6 201 414	49,7	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	165,0	2 037	8,8
VE3	512 280	6 189 536	48,6	Hypotetic 8.0 8000 1...	No	Hypotetic	8.0-8 000	8 000	180,0	170,0	2 500	-
VE3	512 241	6 198 372	46,5	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	165,0	2 037	8,8
VE4	509 643	6 187 021	52,0	Hypotetic 8.0 8000 1...	No	Hypotetic	8.0-8 000	8 000	180,0	170,0	2 500	-
VE4	510 190	6 197 025	50,4	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	165,0	2 037	8,8
VE5	510 233	6 198 924	49,3	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	165,0	2 037	8,8
VE6	509 964	6 200 239	47,0	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	165,0	2 037	8,8
VE6	513 271	6 186 583	45,3	Hypotetic 8.0 8000 1...	No	Hypotetic	8.0-8 000	8 000	180,0	170,0	2 500	-
VE7	513 029	6 197 660	47,0	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	165,0	2 037	8,8
VE8	512 122	6 196 524	48,3	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	165,0	2 037	8,8
VE9	511 961	6 195 326	48,8	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	165,0	2 037	8,8

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SHADOW - Main Result

Calculation: SHADOW

Shadow receptor-Input

No.	Y	X	Z	Width	Height	Elevation a.g.l.	Slope of window	Direction mode	Eye height (ZVI) a.g.l.
			[m]	[m]	[m]	[m]	[°]		[m]
G01	506 843	6 200 422	54,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G02	507 506	6 199 600	51,9	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G03	507 490	6 199 545	52,7	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G04	507 464	6 199 492	53,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G05	507 561	6 199 583	52,4	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G06	507 632	6 199 555	53,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G07	507 619	6 199 509	53,5	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G08	507 537	6 199 529	52,3	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G09	507 682	6 199 497	53,8	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G10	507 669	6 199 423	53,1	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G11	507 642	6 199 366	54,3	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G12	507 228	6 198 595	55,8	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G13	507 313	6 198 194	54,4	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G14	509 558	6 201 886	47,1	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G15	509 794	6 201 446	49,3	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G16	509 856	6 201 185	51,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G17	510 988	6 201 034	51,6	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G18	508 962	6 200 071	50,7	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G19	510 413	6 199 759	48,9	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G20	509 553	6 199 558	53,4	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G21	512 320	6 200 121	50,9	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G22	513 368	6 195 217	46,4	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G23	513 633	6 195 185	45,8	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G24	513 680	6 195 355	46,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G25	513 740	6 195 540	45,6	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G26	513 978	6 196 950	47,1	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G27	514 634	6 196 384	46,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G28	514 618	6 196 386	45,9	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G29	514 593	6 196 389	45,7	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G30	514 567	6 196 392	44,3	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G31	514 535	6 196 397	43,3	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G32	514 544	6 196 497	44,3	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G33	514 564	6 196 494	45,2	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G34	514 587	6 196 492	45,9	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G35	514 541	6 196 549	43,6	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G36	510 744	6 195 273	52,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G37	507 058	6 197 245	55,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G38	507 055	6 197 200	55,4	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G39	505 767	6 195 866	56,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G40	506 485	6 195 329	55,6	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G41	504 924	6 194 409	55,7	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G42	510 825	6 194 492	51,1	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G43	510 860	6 194 485	51,5	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G44	511 099	6 194 463	50,7	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G45	511 072	6 194 465	51,4	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G46	511 051	6 194 468	52,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G47	511 018	6 194 470	52,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G48	510 973	6 194 477	51,6	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G49	510 940	6 194 480	51,1	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G50	512 500	6 191 593	49,9	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G51	512 482	6 191 483	48,8	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G52	512 537	6 191 402	49,6	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G53	512 499	6 190 966	48,8	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G54	512 499	6 190 841	50,4	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G55	513 257	6 189 826	47,4	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G56	513 387	6 189 656	46,7	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G57	512 309	6 189 025	50,4	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G58	512 133	6 188 384	48,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0

Project:

UAB Eurostat 1 planuojamos ukines veiklos – vejo elektriniu irengimas Pasvalio r. sav., Pusaloto sen., Pagirnapiu k., Jaciunu k., Matkunu k., Deglenu k., Daukuciu vs., Jakuboniu k., Sermuksniu k., Mickaiciu k., Budininku k., Kidzioniu k., Ozkyciu k. ir Panevezio r. sav., Panevezio sen., Pazuku k., Eimuliskio k., Grikpedziu k., Staciunu k.

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Calculated:

2024-11-22 13:47/4.1.254

SHADOW - Main Result

Calculation: SHADOW

Calculation Results

Shadow receptor

Shadow, expected values
No. Shadow hours Avoided hours
per year per year
[h/year] [h/year]

G01	26:46	
G02*	25:50	8:25
G03*	27:04	9:52
G04*	28:13	9:29
G05*	23:41	6:32
G06*	21:24	4:36
G07*	25:56	4:45
G08*	26:34	7:36
G09*	22:36	4:09
G10*	27:10	5:01
G11*	29:07	4:52
G12	26:06	
G13	21:46	
G14*	24:31	0:38
G15*	23:36	10:58
G16*	28:46	14:18
G17*	28:19	6:07
G18*	24:00	9:28
G19*	29:34	3:11
G20*	21:56	36:57
G21	8:00	
G22	7:06	
G23	10:01	
G24	11:19	
G25	12:02	
G26	9:45	
G27	4:59	
G28	6:37	
G29	6:29	
G30	6:23	
G31	6:18	
G32	8:01	
G33	8:09	
G34	8:23	
G35	9:03	
G36	28:21	
G37*	31:26	20:41
G38*	29:23	18:49
G39*	29:14	7:07
G40*	29:58	18:36
G41*	22:24	24:58
G42	25:35	
G43	22:31	
G44	14:50	
G45	13:56	
G46	14:10	
G47	14:39	
G48	15:21	
G49	16:27	
G50	18:32	
G51	11:06	
G52	11:58	
G53	18:51	
G54	25:30	
G55	17:46	
G56	16:37	
G57	19:01	
G58	17:05	

* Receptors where shadow flicker is reduced by curtailment

SHADOW - Main Result

Calculation: SHADOW

Total amount of flickering on the shadow receptors caused by each WTG

No.	Name	Stopped due to flicker curtailment [h/year]	Expected [h/year]
2	Siemens Gamesa SG 6.0-170 6600 170.0 !O! hub: 169,0 m (TOT: 254,0 m) (1)		13:54
3	Siemens Gamesa SG 6.0-170 6600 170.0 !O! hub: 169,0 m (TOT: 254,0 m) (2)		0:35
4	Siemens Gamesa SG 6.0-170 6600 170.0 !O! hub: 169,0 m (TOT: 254,0 m) (3)		0:00
5	Siemens Gamesa SG 6.0-170 6600 170.0 !O! hub: 169,0 m (TOT: 254,0 m) (4)		26:33
26	ENERCON E-175 EP5 6000 175.0 !O! hub: 182,5 m (TOT: 270,0 m) (47)		0:00
27	ENERCON E-175 EP5 6000 175.0 !O! hub: 182,5 m (TOT: 270,0 m) (48)		0:00
28	ENERCON E-175 EP5 6000 175.0 !O! hub: 182,5 m (TOT: 270,0 m) (49)		0:00
29	ENERCON E-175 EP5 6000 175.0 !O! hub: 182,5 m (TOT: 270,0 m) (50)		0:00
30	ENERCON E-175 EP5 6000 175.0 !O! hub: 182,5 m (TOT: 270,0 m) (51)		0:00
31	ENERCON E-175 EP5 6000 175.0 !O! hub: 182,5 m (TOT: 270,0 m) (52)		0:00
32	ENERCON E-175 EP5 6000 175.0 !O! hub: 182,5 m (TOT: 270,0 m) (53)		2:36
32	Hypotetic 8.0 8000 180.0 !-! hub: 170,0 m (TOT: 260,0 m) (44)		8:52
33	ENERCON E-175 EP5 6000 175.0 !O! hub: 182,5 m (TOT: 270,0 m) (54)		0:00
33	Hypotetic 8.0 8000 180.0 !-! hub: 170,0 m (TOT: 260,0 m) (45)		33:02
50	Hypotetic 8.0 8000 180.0 !-! hub: 170,0 m (TOT: 260,0 m) (43)		13:04
52	Hypotetic 8.0 8000 180.0 !-! hub: 170,0 m (TOT: 260,0 m) (38)		11:22
53	Hypotetic 8.0 8000 180.0 !-! hub: 170,0 m (TOT: 260,0 m) (39)		23:21
54	Hypotetic 8.0 8000 180.0 !-! hub: 170,0 m (TOT: 260,0 m) (40)		2:44
55	Hypotetic 8.0 8000 180.0 !-! hub: 170,0 m (TOT: 260,0 m) (41)		21:41
56	Hypotetic 8.0 8000 180.0 !-! hub: 170,0 m (TOT: 260,0 m) (42)		47:40
E-VE01	Siemens Gamesa SG 6.6-170 6600 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (9)		13:55
E-VE02	Siemens Gamesa SG 6.6-170 6600 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (10)	103:20	9:04
E-VE03	Siemens Gamesa SG 6.6-170 6600 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (11)	45:43	1:45
E-VE04	Siemens Gamesa SG 6.6-170 6600 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (12)	11:23	13:22
E-VE05	Siemens Gamesa SG 6.6-170 6600 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (13)		6:59
E-VE06	Siemens Gamesa SG 6.6-170 6600 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (14)	55:55	3:58
E-VE07	Siemens Gamesa SG 6.6-170 6600 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (15)	91:09	2:22
E-VE08	Siemens Gamesa SG 6.6-170 6600 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (16)	79:07	17:29
E-VE09	Siemens Gamesa SG 6.6-170 6600 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (17)		18:32
E-VE10	Siemens Gamesa SG 6.6-170 6600 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (18)		4:21
E-VE11	Siemens Gamesa SG 6.6-170 6600 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (19)		1:32
E-VE12	Siemens Gamesa SG 6.6-170 6600 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (20)	15:06	0:00
E-VE13	Siemens Gamesa SG 6.6-170 6600 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (21)		1:19
E-VE14	Siemens Gamesa SG 6.6-170 6600 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (22)		0:00
E-VE15	Siemens Gamesa SG 6.6-170 6600 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (23)		12:18
E-VE16	Siemens Gamesa SG 6.6-170 6600 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (24)		16:44
E-VE17	Siemens Gamesa SG 6.6-170 6600 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (25)		15:02
E-VE18	Siemens Gamesa SG 6.6-170 6600 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (26)		3:08
E-VE19	Siemens Gamesa SG 6.6-170 6600 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (27)		0:00
E-VE20	Siemens Gamesa SG 6.6-170 6600 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (28)		6:30
E-VE21	Siemens Gamesa SG 6.6-170 6600 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (29)		0:00
E-VE22	Siemens Gamesa SG 6.6-170 6600 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (30)		0:00
E-VE23	Siemens Gamesa SG 6.6-170 6600 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (31)		0:00
E-VE24	Siemens Gamesa SG 6.6-170 6600 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (32)		0:00
E-VE25	Siemens Gamesa SG 6.6-170 6600 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (33)		0:00
E-VE26	Siemens Gamesa SG 6.6-170 6600 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (34)		27:06
E-VE27	Siemens Gamesa SG 6.6-170 6600 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (35)		13:59
N-VE01	Siemens Gamesa SG 6.6-170 6600 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (1)		0:00
N-VE02	Siemens Gamesa SG 6.6-170 6600 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (2)	27:14	17:12
N-VE03	Siemens Gamesa SG 6.6-170 6600 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (3)		0:00
N-VE04	Siemens Gamesa SG 6.6-170 6600 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (4)	29:34	7:13
N-VE05	Siemens Gamesa SG 6.6-170 6600 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (5)	50:42	15:09
N-VE06	Siemens Gamesa SG 6.6-170 6600 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (6)		13:08
N-VE07	Siemens Gamesa SG 6.6-170 6600 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (7)	271:46	2:37
N-VE08	Siemens Gamesa SG 6.6-170 6600 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (8)	128:01	15:44
VE06	Hypotetic 8.0 8000 180.0 !-! hub: 169,0 m (TOT: 259,0 m) (5)		1:08
VE07	Hypotetic 8.0 8000 180.0 !-! hub: 169,0 m (TOT: 259,0 m) (6)		6:47
VE1	Hypotetic 8.0 8000 180.0 !-! hub: 170,0 m (TOT: 260,0 m) (7)		48:21
VE1	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (21)		6:19
VE10	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (15)		0:00
VE11	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (14)		19:50
VE12	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (13)		9:31
VE13	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (26)		2:06
VE14	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (12)		0:00
VE15	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (24)		10:42

To be continued on next page...

SHADOW - Main Result

Calculation: SHADOW

...continued from previous page

No.	Name	Stopped due to flicker curtailment [h/year]	Expected [h/year]
VE16	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (27)		5:26
VE17	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (28)		1:32
VE18	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (25)		0:00
VE19	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (31)		13:28
VE2	Hypotetic 8.0 8000 180.0 !-! hub: 170,0 m (TOT: 260,0 m) (8)		18:18
VE2	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (32)		21:53
VE20	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (30)		0:00
VE21	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (29)		28:46
VE27	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (55)		1:10
VE29	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (56)		3:21
VE3	Hypotetic 8.0 8000 180.0 !-! hub: 170,0 m (TOT: 260,0 m) (9)		11:20
VE3	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (20)		0:00
VE4	Hypotetic 8.0 8000 180.0 !-! hub: 170,0 m (TOT: 260,0 m) (11)		0:00
VE4	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (19)		0:00
VE5	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (22)		11:37
VE6	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (23)		14:54
VE6	Hypotetic 8.0 8000 180.0 !-! hub: 170,0 m (TOT: 260,0 m) (10)		1:03
VE7	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (17)		4:54
VE8	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (18)		11:09
VE9	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (16)		16:55

Total times in Receptor wise and WTG wise tables can differ, as a WTG can lead to flicker at 2 or more receptors simultaneously and/or receptors may receive flicker from 2 or more WTGs simultaneously.

The calculation of the total expected values for a given receptor assumes a weighted average directional reduction for all WTGs contributing to shadow flicker within the same day. In the case where shadow flicker from different WTGs is not concurrent within the day, the total expected time at a given receptor may deviate marginally from the individual flicker time caused by each turbine separately.

**Prognozuojamas PŪV SUMINIS šėšėliavimo vertinimas
"H" alternatyva**

UAB Eurostat 1 planuojamos ukines veiklos – vejo elektriniu irengimas Pasvalio r. sav., Pusaloto sen., Pagirnupiu k., Jaciunu k., Matkunu k., Deglenu k., Daukuciu vs., Jakuboniu k., Sermuksniu k., Mickaiciu k., Budininku k., Kidzioniu k., Ozkyciu k. ir Panevezio r. sav., Panevezio sen., Pazuku k., Eimuliskio k., Grippedziu k., Staciunu k.

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Calculated:
2024-11-21 17:05/4.1.254

SHADOW - Main Result

Calculation: SHADOW

Assumptions for shadow calculations

Maximum distance for influence

Calculate only when more than 20 % of sun is covered by the blade

Please look in WTG table

Minimum sun height over horizon for influence

3 °

Day step for calculation

1 days

Time step for calculation

1 minutes

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1,41	2,36	4,03	5,55	8,35	8,36	8,16	7,72	5,06	3,23	1,33	0,98

Operational hours are calculated from WTGs in calculation and wind distribution:

Site data: ATLAS; 12 sectors; Radius: 43 000 m (3)

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
950	503	233	288	575	629	761	1 009	1 180	999	754	543	8 425

Monthly aggregation of real case reduction

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

A ZVI (Zones of Visual Influence) calculation is performed before flicker

calculation so non visible WTG do not contribute to calculated flicker

values. A WTG will be visible if it is visible from any part of the receiver

window. The ZVI calculation is based on the following assumptions:

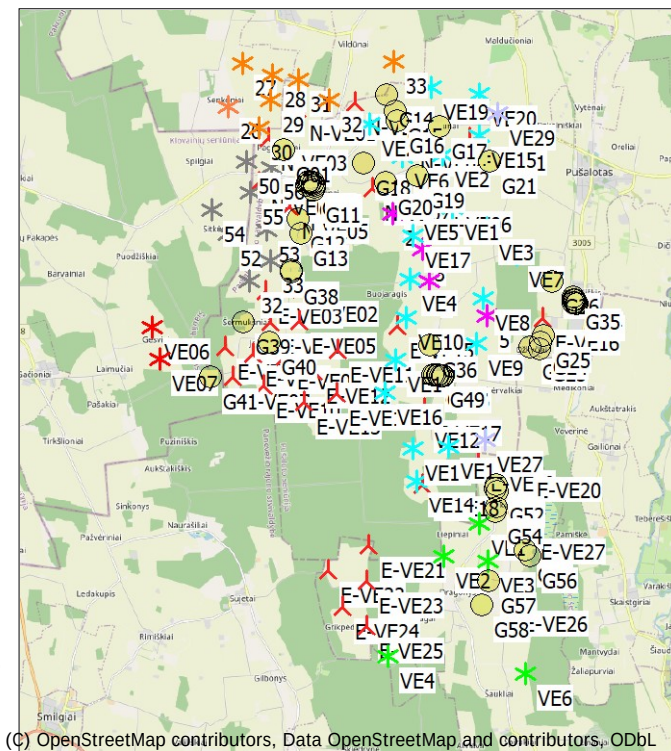
DHM: Project Wizard Elevation Data Grid (SRTM: Shuttle DTM 1 arc-second)

Receptor grid resolution: 1,0 m

Topographic shadow included in calculation

All coordinates are in

Lithuanian TM LKS94-LKS94 (LT)



(C) OpenStreetMap contributors, Data OpenStreetMap and contributors, ODbL

Scale 1:200 000

 New WTG

* Existing WTG

- Shadow receptor

WTGs

	WTG type										Shadow data	
	Y	X	Z	Row data/Description	Valid	Manufact.	Type-generator	Power, rated	Rotor diameter	Hub height	Calculation distance	RPM
			[m]					[kW]	[m]	[m]	[m]	[RPM]
2	509 738	6 198 776	48,0	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 600	6 600	170,0	169,0	2 037	8,8
3	510 515	6 197 797	51,2	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 600	6 600	170,0	169,0	2 037	8,8
4	510 709	6 196 958	48,6	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 600	6 600	170,0	169,0	2 037	8,8
5	512 239	6 196 056	46,0	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 600	6 600	170,0	169,0	2 037	8,8
26	505 388	6 201 560	51,3	ENERCON E-175 EP5 ...	Yes	ENERCON	E-175 EP5-6 000	6 000	175,0	182,5	1 735	-
27	505 734	6 202 721	51,9	ENERCON E-175 EP5 ...	Yes	ENERCON	E-175 EP5-6 000	6 000	175,0	182,5	1 735	-
28	506 531	6 202 422	50,0	ENERCON E-175 EP5 ...	Yes	ENERCON	E-175 EP5-6 000	6 000	175,0	182,5	1 735	-
29	506 492	6 201 745	49,9	ENERCON E-175 EP5 ...	Yes	ENERCON	E-175 EP5-6 000	6 000	175,0	182,5	1 735	-
30	506 188	6 201 006	51,7	ENERCON E-175 EP5 ...	Yes	ENERCON	E-175 EP5-6 000	6 000	175,0	182,5	1 735	-
31	507 234	6 202 266	51,5	ENERCON E-175 EP5 ...	Yes	ENERCON	E-175 EP5-6 000	6 000	175,0	182,5	1 735	-
32	508 050	6 201 749	49,0	ENERCON E-175 EP5 ...	Yes	ENERCON	E-175 EP5-6 000	6 000	175,0	182,5	1 735	-
32	505 943	6 196 959	51,3	Hypotetic 8.0 8000 1...	No	Hypotetic	8.0-8 000	8 000	180,0	170,0	2 500	-
33	509 743	6 202 761	45,3	ENERCON E-175 EP5 ...	Yes	ENERCON	E-175 EP5-6 000	6 000	175,0	182,5	1 735	-
33	506 501	6 197 500	52,2	Hypotetic 8.0 8000 1...	No	Hypotetic	8.0-8 000	8 000	180,0	170,0	2 500	-
50	505 860	6 200 126	53,8	Hypotetic 8.0 8000 1...	No	Hypotetic	8.0-8 000	8 000	180,0	170,0	2 500	-
52	505 377	6 198 220	53,0	Hypotetic 8.0 8000 1...	No	Hypotetic	8.0-8 000	8 000	180,0	170,0	2 500	-
53	506 394	6 198 319	53,1	Hypotetic 8.0 8000 1...	No	Hypotetic	8.0-8 000	8 000	180,0	170,0	2 500	-
54	504 944	6 198 838	51,4	Hypotetic 8.0 8000 1...	No	Hypotetic	8.0-8 000	8 000	180,0	170,0	2 500	-
55	505 959	6 199 299	51,4	Hypotetic 8.0 8000 1...	No	Hypotetic	8.0-8 000	8 000	180,0	170,0	2 500	-
56	506 528	6 199 986	49,3	Hypotetic 8.0 8000 1...	No	Hypotetic	8.0-8 000	8 000	180,0	170,0	2 500	-
E-VE01	511 774	6 200 739	47,5	Hypothetical 10000 ...	Yes	Hypothetical	-10 000	10 000	200,0	180,0	2 500	-
E-VE02	507 315	6 196 732	53,0	Hypothetical 10000 ...	Yes	Hypothetical	-10 000	10 000	200,0	180,0	2 500	-
E-VE03	506 375	6 196 675	54,7	Hypothetical 10000 ...	Yes	Hypothetical	-10 000	10 000	200,0	180,0	2 500	-
E-VE04	506 501	6 195 859	52,0	Hypothetical 10000 ...	Yes	Hypothetical	-10 000	10 000	200,0	180,0	2 500	-
E-VE05	507 253	6 195 881	52,2	Hypothetical 10000 ...	Yes	Hypothetical	-10 000	10 000	200,0	180,0	2 500	-
E-VE06	505 294	6 195 211	55,3	Hypothetical 10000 ...	Yes	Hypothetical	-10 000	10 000	200,0	180,0	2 500	-
E-VE07	505 491	6 194 401	54,0	Hypothetical 10000 ...	Yes	Hypothetical	-10 000	10 000	200,0	180,0	2 500	-
E-VE08	506 035	6 195 026	53,7	Hypothetical 10000 ...	Yes	Hypothetical	-10 000	10 000	200,0	180,0	2 500	-
E-VE09	506 884	6 194 962	53,3	Hypothetical 10000 ...	Yes	Hypothetical	-10 000	10 000	200,0	180,0	2 500	-

To be continued on next page...

Project:

UAB Eurostat 1 planuojamos ukinės veiklos – vejo elektriniu irengimas Pasvalio r. sav., Pusaloto sen., Pagirniupiu k., Jaciunu k., Matkunu k., Deglenu k., Daukuciu vs., Jakubonių k., Sermuksnių k., Mickaiciu k., Budininku k., Kidzionių k., Ozkyciu k. ir Panevezio r. sav., Panevezio sen., Pazuku k., Eimuliskio k., Grikpedzių k., Staciunu k.

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Calculated:

2024-11-21 17:05/4.1.254

SHADOW - Main Result

Calculation: SHADOW

...continued from previous page

	Y	X	Z	Row data/Description	WTG type		Type-generator	Power, rated [kW]	Rotor diameter [m]	Hub height [m]	Shadow data	
					Valid	Manufact.					Calculation distance [m]	RPM [RPM]
			[m]									
E-VE10	506 331	6 194 190	54,0	Hypothetical 10000 ...	Yes	Hypothetical	-10 000	10 000	200,0	180,0	2 500	-
E-VE11	508 295	6 195 151	50,4	Hypothetical 10000 ...	Yes	Hypothetical	-10 000	10 000	200,0	180,0	2 500	-
E-VE12	507 655	6 194 577	52,3	Hypothetical 10000 ...	Yes	Hypothetical	-10 000	10 000	200,0	180,0	2 500	-
E-VE13	507 391	6 193 769	53,5	Hypothetical 10000 ...	Yes	Hypothetical	-10 000	10 000	200,0	180,0	2 500	-
E-VE14	508 259	6 193 993	52,0	Hypothetical 10000 ...	Yes	Hypothetical	-10 000	10 000	200,0	180,0	2 500	-
E-VE15	509 883	6 195 766	50,4	Hypothetical 10000 ...	Yes	Hypothetical	-10 000	10 000	200,0	180,0	2 500	-
E-VE16	513 718	6 195 996	46,0	Hypothetical 10000 ...	Yes	Hypothetical	-10 000	10 000	200,0	180,0	2 500	-
E-VE17	510 597	6 193 591	53,2	Hypothetical 10000 ...	Yes	Hypothetical	-10 000	10 000	200,0	180,0	2 500	-
E-VE18	510 530	6 191 574	50,0	Hypothetical 10000 ...	Yes	Hypothetical	-10 000	10 000	200,0	180,0	2 500	-
E-VE19	512 020	6 192 269	46,3	Hypothetical 10000 ...	Yes	Hypothetical	-10 000	10 000	200,0	180,0	2 500	-
E-VE20	513 240	6 192 097	45,3	Hypothetical 10000 ...	Yes	Hypothetical	-10 000	10 000	200,0	180,0	2 500	-
E-VE21	509 118	6 189 929	53,2	Hypothetical 10000 ...	Yes	Hypothetical	-10 000	10 000	200,0	180,0	2 500	-
E-VE22	508 045	6 189 297	55,0	Hypothetical 10000 ...	Yes	Hypothetical	-10 000	10 000	200,0	180,0	2 500	-
E-VE23	509 083	6 189 002	52,3	Hypothetical 10000 ...	Yes	Hypothetical	-10 000	10 000	200,0	180,0	2 500	-
E-VE24	508 432	6 188 305	52,0	Hypothetical 10000 ...	Yes	Hypothetical	-10 000	10 000	200,0	180,0	2 500	-
E-VE25	509 068	6 187 814	51,8	Hypothetical 10000 ...	Yes	Hypothetical	-10 000	10 000	200,0	180,0	2 500	-
E-VE26	512 902	6 188 519	46,5	Hypothetical 10000 ...	Yes	Hypothetical	-10 000	10 000	200,0	180,0	2 500	-
E-VE27	513 359	6 190 431	47,0	Hypothetical 10000 ...	Yes	Hypothetical	-10 000	10 000	200,0	180,0	2 500	-
N-VE01	507 209	6 201 524	51,0	Hypothetical 10000 ...	Yes	Hypothetical	-10 000	10 000	200,0	180,0	2 500	-
N-VE02	508 734	6 201 665	47,0	Hypothetical 10000 ...	Yes	Hypothetical	-10 000	10 000	200,0	180,0	2 500	-
N-VE03	506 435	6 200 737	50,4	Hypothetical 10000 ...	Yes	Hypothetical	-10 000	10 000	200,0	180,0	2 500	-
N-VE04	506 209	6 199 545	52,6	Hypothetical 10000 ...	Yes	Hypothetical	-10 000	10 000	200,0	180,0	2 500	-
N-VE05	506 994	6 198 936	50,6	Hypothetical 10000 ...	Yes	Hypothetical	-10 000	10 000	200,0	180,0	2 500	-
N-VE06	510 789	6 199 120	51,0	Hypothetical 10000 ...	Yes	Hypothetical	-10 000	10 000	200,0	180,0	2 500	-
N-VE07	509 212	6 199 396	48,3	Hypothetical 10000 ...	Yes	Hypothetical	-10 000	10 000	200,0	180,0	2 500	-
N-VE08	510 142	6 200 713	47,9	Hypothetical 10000 ...	Yes	Hypothetical	-10 000	10 000	200,0	180,0	2 500	-
VE06	503 373	6 195 727	55,0	Hypotetic 8.0 8000 1...	No	Hypotetic	8.0-8 000	8 000	180,0	169,0	2 500	-
VE07	503 573	6 194 904	55,1	Hypotetic 8.0 8000 1...	No	Hypotetic	8.0-8 000	8 000	180,0	169,0	2 500	-
VE1	512 050	6 190 536	47,9	Hypotetic 8.0 8000 1...	No	Hypotetic	8.0-8 000	8 000	180,0	170,0	2 500	-
VE1	511 301	6 198 923	51,5	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	165,0	2 037	8,8
VE10	510 088	6 196 004	50,2	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	165,0	2 037	8,8
VE11	509 806	6 194 891	51,0	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	165,0	2 037	8,8
VE12	510 539	6 193 414	50,1	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	165,0	2 037	8,8
VE13	511 243	6 192 588	48,0	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	165,0	2 037	8,8
VE14	510 388	6 191 665	50,0	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	165,0	2 037	8,8
VE15	512 026	6 200 837	46,0	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	165,0	2 037	8,8
VE16	509 529	6 193 999	50,7	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	165,0	2 037	8,8
VE17	510 273	6 198 161	47,0	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	165,0	2 037	8,8
VE18	510 269	6 192 543	51,0	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	165,0	2 037	8,8
VE19	510 745	6 202 082	46,0	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	165,0	2 037	8,8
VE2	511 090	6 189 666	49,3	Hypotetic 8.0 8000 1...	No	Hypotetic	8.0-8 000	8 000	180,0	170,0	2 500	-
VE2	511 042	6 200 317	48,9	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	165,0	2 037	8,8
VE20	512 003	6 201 911	48,6	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	165,0	2 037	8,8
VE21	509 115	6 201 121	48,0	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	165,0	2 037	8,8
VE27	512 196	6 192 765	43,3	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	165,0	2 037	8,8
VE29	512 502	6 201 414	49,7	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	165,0	2 037	8,8
VE3	512 280	6 189 536	48,6	Hypotetic 8.0 8000 1...	No	Hypotetic	8.0-8 000	8 000	180,0	170,0	2 500	-
VE3	512 241	6 198 372	46,5	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	165,0	2 037	8,8
VE4	509 643	6 187 021	52,0	Hypotetic 8.0 8000 1...	No	Hypotetic	8.0-8 000	8 000	180,0	170,0	2 500	-
VE4	510 190	6 197 025	50,4	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	165,0	2 037	8,8
VE5	510 233	6 198 924	49,3	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	165,0	2 037	8,8
VE6	509 964	6 200 239	47,0	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	165,0	2 037	8,8
VE6	513 271	6 186 583	45,3	Hypotetic 8.0 8000 1...	No	Hypotetic	8.0-8 000	8 000	180,0	170,0	2 500	-
VE7	513 029	6 197 660	47,0	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	165,0	2 037	8,8
VE8	512 122	6 196 524	48,3	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	165,0	2 037	8,8
VE9	511 961	6 195 326	48,8	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	165,0	2 037	8,8

Shadow receptor-Input

No.	Y	X	Z	Width	Height	Elevation a.g.l.	Slope of window	Direction mode	Eye height (ZVI) a.g.l.
			[m]	[m]	[m]	[m]	[°]		[m]
G01	506 843	6 200 422	54,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G02	507 506	6 199 600	51,9	1,0	1,0	1,0	90,0	"Green house mode"	2,0

To be continued on next page...

UAB Eurostat 1 planuojamos ukines veiklos – vejo elektriniu irengimas Pasvalio r. sav., Pusaloto sen., Pagirnupiu k., Jaciunu k., Matkunu k., Deglenu k., Daukuciu vs., Jakuboniu k., Sermuksniu k., Mickaiciu k., Budininku k., Kidzioniu k., Ozkyciu k. ir Panevezio r. sav., Panevezio sen., Pazuku k., Eimuliskio k., Grippedziu k., Staciunu k.

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SHADOW - Main Result

Calculation: SHADOW

...continued from previous page

No.	Y	X	Z	Width	Height	Elevation a.g.l.	Slope of window	Direction mode	Eye height (ZVI) a.g.l.
			[m]	[m]	[m]	[m]	[°]		[m]
G03	507 490	6 199 545	52,7	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G04	507 464	6 199 492	53,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G05	507 561	6 199 583	52,4	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G06	507 632	6 199 555	53,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G07	507 619	6 199 509	53,5	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G08	507 537	6 199 529	52,3	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G09	507 682	6 199 497	53,8	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G10	507 669	6 199 423	53,1	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G11	507 642	6 199 366	54,3	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G12	507 228	6 198 595	55,8	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G13	507 313	6 198 194	54,4	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G14	509 558	6 201 886	47,1	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G15	509 794	6 201 446	49,3	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G16	509 856	6 201 185	51,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G17	510 988	6 201 034	51,6	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G18	508 962	6 200 071	50,7	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G19	510 413	6 199 759	48,9	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G20	509 553	6 199 558	53,4	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G21	512 320	6 200 121	50,9	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G22	513 368	6 195 217	46,4	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G23	513 633	6 195 185	45,8	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G24	513 680	6 195 355	46,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G25	513 740	6 195 540	45,6	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G26	513 978	6 196 950	47,1	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G27	514 634	6 196 384	46,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G28	514 618	6 196 386	45,9	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G29	514 593	6 196 389	45,7	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G30	514 567	6 196 392	44,3	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G31	514 535	6 196 397	43,3	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G32	514 544	6 196 497	44,3	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G33	514 564	6 196 494	45,2	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G34	514 587	6 196 492	45,9	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G35	514 541	6 196 549	43,6	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G36	510 744	6 195 273	52,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G37	507 058	6 197 245	55,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G38	507 055	6 197 200	55,4	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G39	505 767	6 195 866	56,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G40	506 485	6 195 329	55,6	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G41	504 924	6 194 409	55,7	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G42	510 825	6 194 492	51,1	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G43	510 860	6 194 485	51,5	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G44	511 099	6 194 463	50,7	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G45	511 072	6 194 465	51,4	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G46	511 051	6 194 468	52,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G47	511 018	6 194 470	52,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G48	510 973	6 194 477	51,6	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G49	510 940	6 194 480	51,1	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G50	512 500	6 191 593	49,9	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G51	512 482	6 191 483	48,8	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G52	512 537	6 191 402	49,6	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G53	512 499	6 190 966	48,8	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G54	512 499	6 190 841	50,4	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G55	513 257	6 189 826	47,4	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G56	513 387	6 189 656	46,7	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G57	512 309	6 189 025	50,4	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G58	512 133	6 188 384	48,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0

Project:

UAB Eurostat 1 planuojamos ukines veiklos – vejo elektriniu irengimas Pasvalio r. sav., Pusaloto sen., Pagirnupiu k., Jaciunu k., Matkunu k., Deglenu k., Daukuciu vs., Jakuboniu k., Sermuksniu k., Mickaiciu k., Budininku k., Kidzioniu k., Ozkyciu k. ir Panevezio r. sav., Panevezio sen., Pazuku k., Eimuliskio k., Grippedziu k., Staciunu k.

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SHADOW - Main Result

Calculation: SHADOW

Calculation Results

Shadow receptor

Shadow, expected values

No. Shadow hours

per year

[h/year]

G01	32:51
G02	38:47
G03	41:54
G04	43:19
G05	34:34
G06	30:16
G07	35:15
G08	39:00
G09	31:06
G10	36:57
G11	39:19
G12	28:56
G13	28:18
G14	30:55
G15	41:57
G16	54:51
G17	41:45
G18	42:42
G19	37:16
G20	76:30
G21	10:24
G22	7:06
G23	10:01
G24	11:19
G25	12:03
G26	11:32
G27	6:55
G28	8:38
G29	8:36
G30	8:35
G31	8:37
G32	10:00
G33	10:06
G34	10:13
G35	10:54
G36	31:16
G37	61:52
G38	59:09
G39	52:47
G40	68:07
G41	64:27
G42	27:33
G43	24:30
G44	16:19
G45	15:29
G46	15:49
G47	16:26
G48	17:16
G49	18:23
G50	21:09
G51	12:39
G52	13:38
G53	23:18
G54	30:33
G55	18:57
G56	17:56
G57	21:47
G58	25:39

SHADOW - Main Result

Calculation: SHADOW

Total amount of flickering on the shadow receptors caused by each WTG

No.	Name	Expected [h/year]
2	Siemens Gamesa SG 6.0-170 6600 170.0 !O! hub: 169,0 m (TOT: 254,0 m) (1)	13:54
3	Siemens Gamesa SG 6.0-170 6600 170.0 !O! hub: 169,0 m (TOT: 254,0 m) (2)	0:35
4	Siemens Gamesa SG 6.0-170 6600 170.0 !O! hub: 169,0 m (TOT: 254,0 m) (3)	0:00
5	Siemens Gamesa SG 6.0-170 6600 170.0 !O! hub: 169,0 m (TOT: 254,0 m) (4)	26:34
26	ENERCON E-175 EP5 6000 175.0 !O! hub: 182,5 m (TOT: 270,0 m) (47)	0:00
27	ENERCON E-175 EP5 6000 175.0 !O! hub: 182,5 m (TOT: 270,0 m) (48)	0:00
28	ENERCON E-175 EP5 6000 175.0 !O! hub: 182,5 m (TOT: 270,0 m) (49)	0:00
29	ENERCON E-175 EP5 6000 175.0 !O! hub: 182,5 m (TOT: 270,0 m) (50)	0:00
30	ENERCON E-175 EP5 6000 175.0 !O! hub: 182,5 m (TOT: 270,0 m) (51)	0:00
31	ENERCON E-175 EP5 6000 175.0 !O! hub: 182,5 m (TOT: 270,0 m) (52)	0:00
32	ENERCON E-175 EP5 6000 175.0 !O! hub: 182,5 m (TOT: 270,0 m) (53)	2:36
32	Hypotetic 8.0 8000 180.0 !-! hub: 170,0 m (TOT: 260,0 m) (44)	8:52
33	ENERCON E-175 EP5 6000 175.0 !O! hub: 182,5 m (TOT: 270,0 m) (54)	0:00
33	Hypotetic 8.0 8000 180.0 !-! hub: 170,0 m (TOT: 260,0 m) (45)	33:03
50	Hypotetic 8.0 8000 180.0 !-! hub: 170,0 m (TOT: 260,0 m) (43)	13:05
52	Hypotetic 8.0 8000 180.0 !-! hub: 170,0 m (TOT: 260,0 m) (38)	11:22
53	Hypotetic 8.0 8000 180.0 !-! hub: 170,0 m (TOT: 260,0 m) (39)	23:22
54	Hypotetic 8.0 8000 180.0 !-! hub: 170,0 m (TOT: 260,0 m) (40)	2:44
55	Hypotetic 8.0 8000 180.0 !-! hub: 170,0 m (TOT: 260,0 m) (41)	21:42
56	Hypotetic 8.0 8000 180.0 !-! hub: 170,0 m (TOT: 260,0 m) (42)	47:42
E-VE01	Hypothetical 10000 200.0 !O! hub: 180,0 m (TOT: 280,0 m) (9)	19:39
E-VE02	Hypothetical 10000 200.0 !O! hub: 180,0 m (TOT: 280,0 m) (10)	32:21
E-VE03	Hypothetical 10000 200.0 !O! hub: 180,0 m (TOT: 280,0 m) (11)	12:44
E-VE04	Hypothetical 10000 200.0 !O! hub: 180,0 m (TOT: 280,0 m) (12)	21:21
E-VE05	Hypothetical 10000 200.0 !O! hub: 180,0 m (TOT: 280,0 m) (13)	10:09
E-VE06	Hypothetical 10000 200.0 !O! hub: 180,0 m (TOT: 280,0 m) (14)	15:14
E-VE07	Hypothetical 10000 200.0 !O! hub: 180,0 m (TOT: 280,0 m) (15)	41:56
E-VE08	Hypothetical 10000 200.0 !O! hub: 180,0 m (TOT: 280,0 m) (16)	44:10
E-VE09	Hypothetical 10000 200.0 !O! hub: 180,0 m (TOT: 280,0 m) (17)	25:16
E-VE10	Hypothetical 10000 200.0 !O! hub: 180,0 m (TOT: 280,0 m) (18)	6:58
E-VE11	Hypothetical 10000 200.0 !O! hub: 180,0 m (TOT: 280,0 m) (19)	3:54
E-VE12	Hypothetical 10000 200.0 !O! hub: 180,0 m (TOT: 280,0 m) (20)	3:32
E-VE13	Hypothetical 10000 200.0 !O! hub: 180,0 m (TOT: 280,0 m) (21)	2:03
E-VE14	Hypothetical 10000 200.0 !O! hub: 180,0 m (TOT: 280,0 m) (22)	1:01
E-VE15	Hypothetical 10000 200.0 !O! hub: 180,0 m (TOT: 280,0 m) (23)	14:12
E-VE16	Hypothetical 10000 200.0 !O! hub: 180,0 m (TOT: 280,0 m) (24)	21:53
E-VE17	Hypothetical 10000 200.0 !O! hub: 180,0 m (TOT: 280,0 m) (25)	18:22
E-VE18	Hypothetical 10000 200.0 !O! hub: 180,0 m (TOT: 280,0 m) (26)	8:53
E-VE19	Hypothetical 10000 200.0 !O! hub: 180,0 m (TOT: 280,0 m) (27)	0:00
E-VE20	Hypothetical 10000 200.0 !O! hub: 180,0 m (TOT: 280,0 m) (28)	7:38
E-VE21	Hypothetical 10000 200.0 !O! hub: 180,0 m (TOT: 280,0 m) (29)	0:00
E-VE22	Hypothetical 10000 200.0 !O! hub: 180,0 m (TOT: 280,0 m) (30)	0:00
E-VE23	Hypothetical 10000 200.0 !O! hub: 180,0 m (TOT: 280,0 m) (31)	0:00
E-VE24	Hypothetical 10000 200.0 !O! hub: 180,0 m (TOT: 280,0 m) (32)	0:00
E-VE25	Hypothetical 10000 200.0 !O! hub: 180,0 m (TOT: 280,0 m) (33)	0:00
E-VE26	Hypothetical 10000 200.0 !O! hub: 180,0 m (TOT: 280,0 m) (34)	40:50
E-VE27	Hypothetical 10000 200.0 !O! hub: 180,0 m (TOT: 280,0 m) (35)	18:00
N-VE01	Hypothetical 10000 200.0 !O! hub: 180,0 m (TOT: 280,0 m) (1)	2:02
N-VE02	Hypothetical 10000 200.0 !O! hub: 180,0 m (TOT: 280,0 m) (2)	43:49
N-VE03	Hypothetical 10000 200.0 !O! hub: 180,0 m (TOT: 280,0 m) (3)	0:00
N-VE04	Hypothetical 10000 200.0 !O! hub: 180,0 m (TOT: 280,0 m) (4)	18:35
N-VE05	Hypothetical 10000 200.0 !O! hub: 180,0 m (TOT: 280,0 m) (5)	28:05
N-VE06	Hypothetical 10000 200.0 !O! hub: 180,0 m (TOT: 280,0 m) (6)	19:24
N-VE07	Hypothetical 10000 200.0 !O! hub: 180,0 m (TOT: 280,0 m) (7)	87:05
N-VE08	Hypothetical 10000 200.0 !O! hub: 180,0 m (TOT: 280,0 m) (8)	48:34
VE06	Hypotetic 8.0 8000 180.0 !-! hub: 169,0 m (TOT: 259,0 m) (5)	1:08
VE07	Hypotetic 8.0 8000 180.0 !-! hub: 169,0 m (TOT: 259,0 m) (6)	6:48
VE1	Hypotetic 8.0 8000 180.0 !-! hub: 170,0 m (TOT: 260,0 m) (7)	48:23
VE1	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (21)	6:20
VE10	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (15)	0:00
VE11	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (14)	19:50
VE12	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (13)	9:31
VE13	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (26)	2:06
VE14	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (12)	0:00
VE15	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (24)	10:42

To be continued on next page...

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SHADOW - Main Result

Calculation: SHADOW

...continued from previous page

No.	Name	Expected [h/year]
VE16	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (27)	5:26
VE17	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (28)	1:32
VE18	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (25)	0:00
VE19	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (31)	13:29
VE2	Hypotetic 8.0 8000 180.0 !-! hub: 170,0 m (TOT: 260,0 m) (8)	18:19
VE2	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (32)	21:54
VE20	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (30)	0:00
VE21	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (29)	28:47
VE27	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (55)	1:10
VE29	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (56)	3:21
VE3	Hypotetic 8.0 8000 180.0 !-! hub: 170,0 m (TOT: 260,0 m) (9)	11:20
VE3	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (20)	0:00
VE4	Hypotetic 8.0 8000 180.0 !-! hub: 170,0 m (TOT: 260,0 m) (11)	0:00
VE4	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (19)	0:00
VE5	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (22)	11:37
VE6	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (23)	14:54
VE6	Hypotetic 8.0 8000 180.0 !-! hub: 170,0 m (TOT: 260,0 m) (10)	1:03
VE7	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (17)	4:55
VE8	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (18)	11:10
VE9	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (16)	16:56

Total times in Receptor wise and WTG wise tables can differ, as a WTG can lead to flicker at 2 or more receptors simultaneously and/or receptors may receive flicker from 2 or more WTGs simultaneously.

The calculation of the total expected values for a given receptor assumes a weighted average directional reduction for all WTGs contributing to shadow flicker within the same day. In the case where shadow flicker from different WTGs is not concurrent within the day, the total expected time at a given receptor may deviate marginally from the individual flicker time caused by each turbine separately.

Project:

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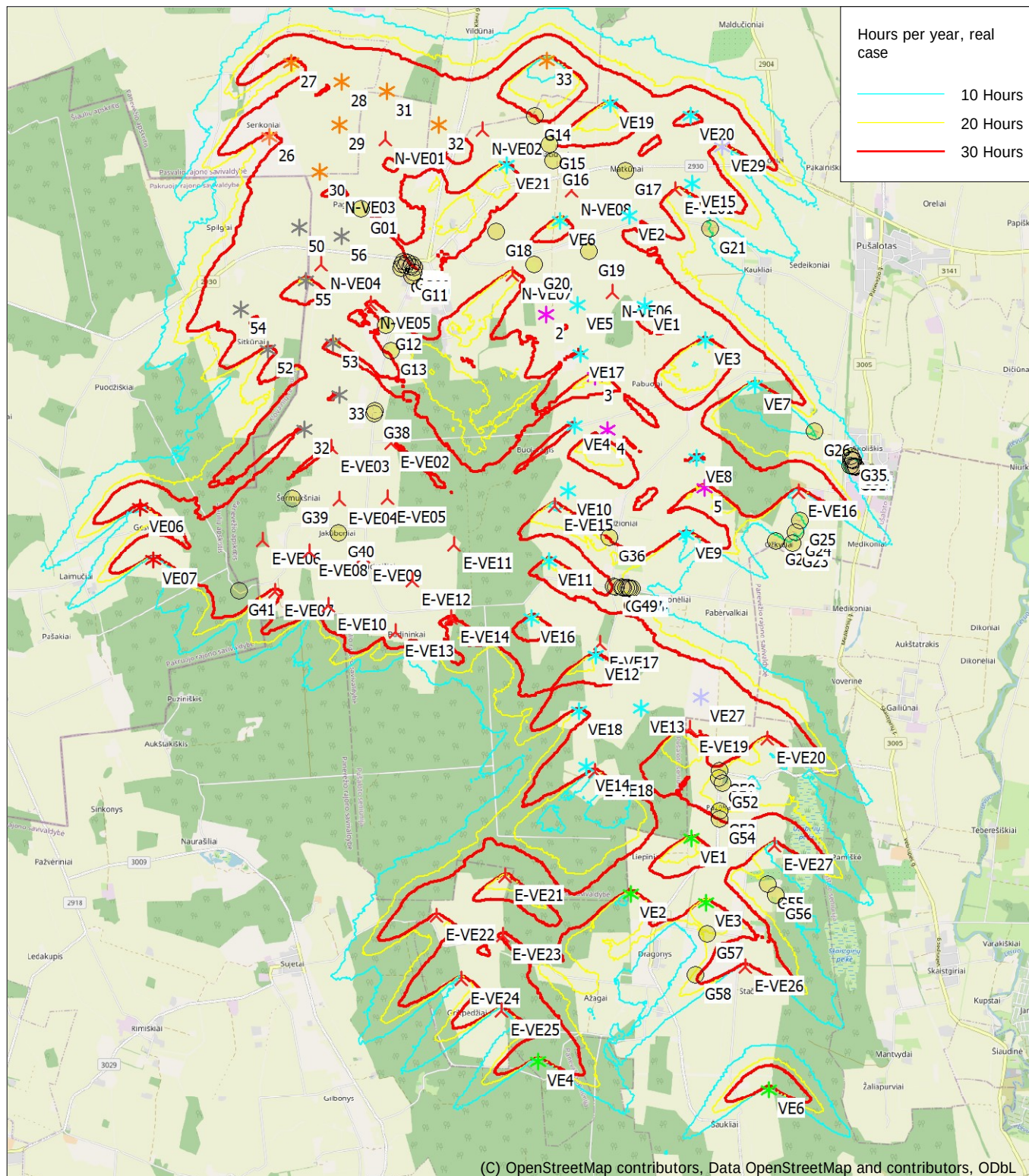
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Calculated:

2024-11-21 17:05/4.1.254

SHADOW - Map

Calculation: SHADOW



0 1 2 3 4 km

Map: EMD OpenStreetMap, Print scale 1:90 000, Map center Lithuanian TM LKS94-LKS94 (LT) East: 509 712 North: 6 194 753

New WTG

Existing WTG

Shadow receptor

Flicker map level: Project Wizard Elevation Data Grid (SRTM: Shuttle DTM 1 arc-second)

Time step: 4 minutes, Day step: 14 days, Map resolution: 30 m, Visibility resolution: 15 m, Eye height: 1,5 m

**PŪV SUMINIS šėšėliavimo
mažinimas (shadow shut-down)
"H" alternatyva**

Project:

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Calculated:

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SHADOW - Main Result

Calculation: SHADOW

Assumptions for shadow calculations

Maximum distance for influence

Calculate only when more than 20 % of sun is covered by the blade

Please look in WTG table

Minimum sun height over horizon for influence

3 °

Day step for calculation

1 days

Time step for calculation

1 minutes

Sunshine probability S (Average daily sunshine hours) [KAUNAS]

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1,41	2,36	4,03	5,55	8,35	8,36	8,16	7,72	5,06	3,23	1,33	0,98

Operational hours are calculated from WTGs in calculation and wind distribution:

Site data: ATLAS; 12 sectors; Radius: 43 000 m (3)

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
950	503	233	288	575	629	761	1 009	1 180	999	754	543	8 425

Monthly aggregation of real case reduction

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

Flicker curtailment by stopping specific turbines

A ZVI (Zones of Visual Influence) calculation is performed before flicker calculation so non visible WTG do not contribute to calculated flicker values. A WTG will be visible if it is visible from any part of the receiver window. The ZVI calculation is based on the following assumptions:

DHM: Project Wizard Elevation Data Grid (SRTM: Shuttle DTM 1 arc-second)

Receptor grid resolution: 1,0 m

Topographic shadow included in calculation

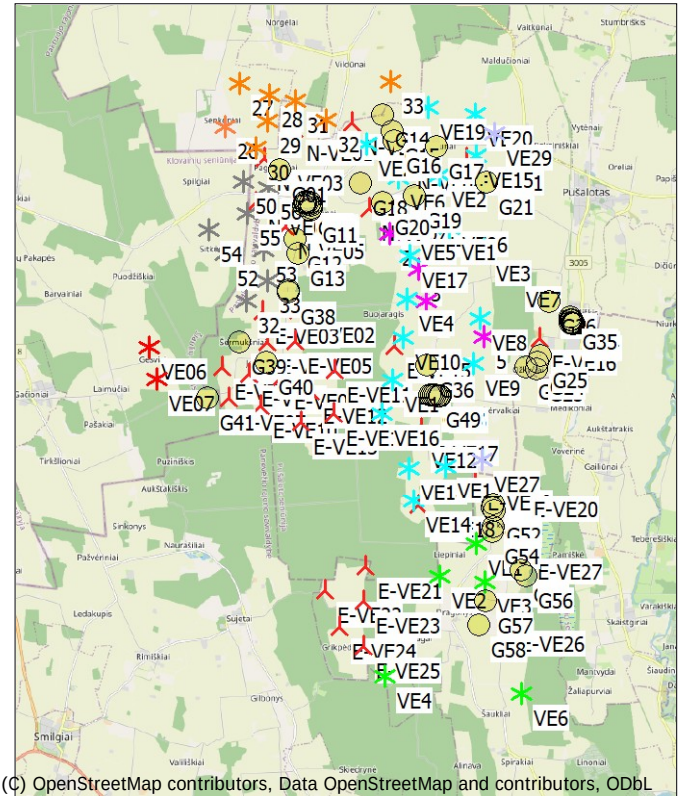
All coordinates are in

Lithuanian TM LKS94-LKS94 (LT)

WTGs

	Y	X	Z	Row data/Description	WTG type			Power, rated [kW]	Rotor diameter [m]	Hub height [m]	Shadow data	
					Valid	Manufact.	Type-generator				Calculation distance	RPM
											[m]	[RPM]
2	509 738	6 198 776	48,0	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 600	6 600	170,0	169,0	2 037	8,8
3	510 515	6 197 797	51,2	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 600	6 600	170,0	169,0	2 037	8,8
4	510 709	6 196 958	48,6	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 600	6 600	170,0	169,0	2 037	8,8
5	512 239	6 196 056	46,0	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 600	6 600	170,0	169,0	2 037	8,8
26	505 388	6 201 560	51,3	ENERCON E-175 EP5 ...	Yes	ENERCON	E-175 EP5-6 000	6 000	175,0	182,5	1 735	-
27	505 734	6 202 721	51,9	ENERCON E-175 EP5 ...	Yes	ENERCON	E-175 EP5-6 000	6 000	175,0	182,5	1 735	-
28	506 531	6 202 422	50,0	ENERCON E-175 EP5 ...	Yes	ENERCON	E-175 EP5-6 000	6 000	175,0	182,5	1 735	-
29	506 492	6 201 745	49,9	ENERCON E-175 EP5 ...	Yes	ENERCON	E-175 EP5-6 000	6 000	175,0	182,5	1 735	-
30	506 188	6 201 006	51,7	ENERCON E-175 EP5 ...	Yes	ENERCON	E-175 EP5-6 000	6 000	175,0	182,5	1 735	-
31	507 234	6 202 266	51,5	ENERCON E-175 EP5 ...	Yes	ENERCON	E-175 EP5-6 000	6 000	175,0	182,5	1 735	-
32	508 050	6 201 749	49,0	ENERCON E-175 EP5 ...	Yes	ENERCON	E-175 EP5-6 000	6 000	175,0	182,5	1 735	-
32	505 943	6 196 959	51,3	Hypotetic 8.0 8000 1...	No	Hypotetic	8.0-8 000	8 000	180,0	170,0	2 500	-
33	509 743	6 202 761	45,3	ENERCON E-175 EP5 ...	Yes	ENERCON	E-175 EP5-6 000	6 000	175,0	182,5	1 735	-
33	506 501	6 197 500	52,2	Hypotetic 8.0 8000 1...	No	Hypotetic	8.0-8 000	8 000	180,0	170,0	2 500	-
50	505 860	6 200 126	53,8	Hypotetic 8.0 8000 1...	No	Hypotetic	8.0-8 000	8 000	180,0	170,0	2 500	-
52	505 377	6 198 220	53,0	Hypotetic 8.0 8000 1...	No	Hypotetic	8.0-8 000	8 000	180,0	170,0	2 500	-
53	506 394	6 198 319	53,1	Hypotetic 8.0 8000 1...	No	Hypotetic	8.0-8 000	8 000	180,0	170,0	2 500	-
54	504 944	6 198 838	51,4	Hypotetic 8.0 8000 1...	No	Hypotetic	8.0-8 000	8 000	180,0	170,0	2 500	-
55	505 959	6 199 299	51,4	Hypotetic 8.0 8000 1...	No	Hypotetic	8.0-8 000	8 000	180,0	170,0	2 500	-
56	506 528	6 199 986	49,3	Hypotetic 8.0 8000 1...	No	Hypotetic	8.0-8 000	8 000	180,0	170,0	2 500	-
E-VE01	511 774	6 200 739	47,5	Hypothetical 10000 ...	Yes	Hypothetical	-10 000	10 000	200,0	180,0	2 500	-
E-VE02	507 315	6 196 732	53,0	Hypothetical 10000 ...	Yes	Hypothetical	-10 000	10 000	200,0	180,0	2 500	-
E-VE03	506 375	6 196 675	54,7	Hypothetical 10000 ...	Yes	Hypothetical	-10 000	10 000	200,0	180,0	2 500	-
E-VE04	506 501	6 195 859	52,0	Hypothetical 10000 ...	Yes	Hypothetical	-10 000	10 000	200,0	180,0	2 500	-
E-VE05	507 253	6 195 881	52,2	Hypothetical 10000 ...	Yes	Hypothetical	-10 000	10 000	200,0	180,0	2 500	-
E-VE06	505 294	6 195 211	55,3	Hypothetical 10000 ...	Yes	Hypothetical	-10 000	10 000	200,0	180,0	2 500	-
E-VE07	505 491	6 194 401	54,0	Hypothetical 10000 ...	Yes	Hypothetical	-10 000	10 000	200,0	180,0	2 500	-

To be continued on next page...



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Scale 1:200 000

New WTG

Existing WTG

Shadow receptor

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SHADOW - Main Result

Calculation: SHADOW

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	Y	X	Z	Row data/Description	WTG type		Type-generator	Power, rated [kW]	Rotor diameter [m]	Hub height [m]	Shadow data	
					Valid	Manufact.					Calculation distance [m]	RPM [RPM]
			[m]									
E-VE08	506 035	6 195 026	53,7	Hypothetical 10000 ...	Yes	Hypothetical	-10 000	10 000	200,0	180,0	2 500	-
E-VE09	506 884	6 194 962	53,3	Hypothetical 10000 ...	Yes	Hypothetical	-10 000	10 000	200,0	180,0	2 500	-
E-VE10	506 331	6 194 190	54,0	Hypothetical 10000 ...	Yes	Hypothetical	-10 000	10 000	200,0	180,0	2 500	-
E-VE11	508 295	6 195 151	50,4	Hypothetical 10000 ...	Yes	Hypothetical	-10 000	10 000	200,0	180,0	2 500	-
E-VE12	507 655	6 194 577	52,3	Hypothetical 10000 ...	Yes	Hypothetical	-10 000	10 000	200,0	180,0	2 500	-
E-VE13	507 391	6 193 769	53,5	Hypothetical 10000 ...	Yes	Hypothetical	-10 000	10 000	200,0	180,0	2 500	-
E-VE14	508 259	6 193 993	52,0	Hypothetical 10000 ...	Yes	Hypothetical	-10 000	10 000	200,0	180,0	2 500	-
E-VE15	509 883	6 195 766	50,4	Hypothetical 10000 ...	Yes	Hypothetical	-10 000	10 000	200,0	180,0	2 500	-
E-VE16	513 718	6 195 996	46,0	Hypothetical 10000 ...	Yes	Hypothetical	-10 000	10 000	200,0	180,0	2 500	-
E-VE17	510 597	6 193 591	53,2	Hypothetical 10000 ...	Yes	Hypothetical	-10 000	10 000	200,0	180,0	2 500	-
E-VE18	510 530	6 191 574	50,0	Hypothetical 10000 ...	Yes	Hypothetical	-10 000	10 000	200,0	180,0	2 500	-
E-VE19	512 020	6 192 269	46,3	Hypothetical 10000 ...	Yes	Hypothetical	-10 000	10 000	200,0	180,0	2 500	-
E-VE20	513 240	6 192 097	45,3	Hypothetical 10000 ...	Yes	Hypothetical	-10 000	10 000	200,0	180,0	2 500	-
E-VE21	509 118	6 189 929	53,2	Hypothetical 10000 ...	Yes	Hypothetical	-10 000	10 000	200,0	180,0	2 500	-
E-VE22	508 045	6 189 929	55,0	Hypothetical 10000 ...	Yes	Hypothetical	-10 000	10 000	200,0	180,0	2 500	-
E-VE23	509 083	6 189 002	52,3	Hypothetical 10000 ...	Yes	Hypothetical	-10 000	10 000	200,0	180,0	2 500	-
E-VE24	508 432	6 188 305	52,0	Hypothetical 10000 ...	Yes	Hypothetical	-10 000	10 000	200,0	180,0	2 500	-
E-VE25	509 068	6 187 814	51,8	Hypothetical 10000 ...	Yes	Hypothetical	-10 000	10 000	200,0	180,0	2 500	-
E-VE26	512 902	6 188 519	46,5	Hypothetical 10000 ...	Yes	Hypothetical	-10 000	10 000	200,0	180,0	2 500	-
E-VE27	513 359	6 190 431	47,0	Hypothetical 10000 ...	Yes	Hypothetical	-10 000	10 000	200,0	180,0	2 500	-
N-VE01	507 209	6 201 524	51,0	Hypothetical 10000 ...	Yes	Hypothetical	-10 000	10 000	200,0	180,0	2 500	-
N-VE02	508 734	6 201 665	47,0	Hypothetical 10000 ...	Yes	Hypothetical	-10 000	10 000	200,0	180,0	2 500	-
N-VE03	506 435	6 200 737	50,4	Hypothetical 10000 ...	Yes	Hypothetical	-10 000	10 000	200,0	180,0	2 500	-
N-VE04	506 209	6 199 545	52,6	Hypothetical 10000 ...	Yes	Hypothetical	-10 000	10 000	200,0	180,0	2 500	-
N-VE05	506 994	6 198 936	50,6	Hypothetical 10000 ...	Yes	Hypothetical	-10 000	10 000	200,0	180,0	2 500	-
N-VE06	510 789	6 199 120	51,0	Hypothetical 10000 ...	Yes	Hypothetical	-10 000	10 000	200,0	180,0	2 500	-
N-VE07	509 212	6 199 396	48,3	Hypothetical 10000 ...	Yes	Hypothetical	-10 000	10 000	200,0	180,0	2 500	-
N-VE08	510 142	6 200 713	47,9	Hypothetical 10000 ...	Yes	Hypothetical	-10 000	10 000	200,0	180,0	2 500	-
VE06	503 373	6 195 727	55,0	Hypotetic 8.0 8000 1...	No	Hypotetic	8.0-8 000	8 000	180,0	169,0	2 500	-
VE07	503 573	6 194 904	55,1	Hypotetic 8.0 8000 1...	No	Hypotetic	8.0-8 000	8 000	180,0	169,0	2 500	-
VE1	512 050	6 190 536	47,9	Hypotetic 8.0 8000 1...	No	Hypotetic	8.0-8 000	8 000	180,0	170,0	2 500	-
VE1	511 301	6 198 923	51,5	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	165,0	2 037	8,8
VE10	510 088	6 196 004	50,2	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	165,0	2 037	8,8
VE11	509 806	6 194 891	51,0	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	165,0	2 037	8,8
VE12	510 539	6 193 414	50,1	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	165,0	2 037	8,8
VE13	511 243	6 192 588	48,0	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	165,0	2 037	8,8
VE14	510 388	6 191 665	50,0	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	165,0	2 037	8,8
VE15	512 026	6 200 837	46,0	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	165,0	2 037	8,8
VE16	509 529	6 193 999	50,7	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	165,0	2 037	8,8
VE17	510 273	6 198 161	47,0	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	165,0	2 037	8,8
VE18	510 269	6 192 543	51,0	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	165,0	2 037	8,8
VE19	510 745	6 202 082	46,0	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	165,0	2 037	8,8
VE2	511 090	6 189 666	49,3	Hypotetic 8.0 8000 1...	No	Hypotetic	8.0-8 000	8 000	180,0	170,0	2 500	-
VE2	511 042	6 200 317	48,9	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	165,0	2 037	8,8
VE20	512 003	6 201 911	48,6	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	165,0	2 037	8,8
VE21	509 115	6 201 121	48,0	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	165,0	2 037	8,8
VE27	512 196	6 192 765	43,3	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	165,0	2 037	8,8
VE29	512 502	6 201 414	49,7	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	165,0	2 037	8,8
VE3	512 280	6 189 536	48,6	Hypotetic 8.0 8000 1...	No	Hypotetic	8.0-8 000	8 000	180,0	170,0	2 500	-
VE3	512 241	6 198 372	46,5	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	165,0	2 037	8,8
VE4	509 643	6 187 021	52,0	Hypotetic 8.0 8000 1...	No	Hypotetic	8.0-8 000	8 000	180,0	170,0	2 500	-
VE4	510 190	6 197 025	50,4	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	165,0	2 037	8,8
VE5	510 233	6 198 924	49,3	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	165,0	2 037	8,8
VE6	509 964	6 200 239	47,0	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	165,0	2 037	8,8
VE6	513 271	6 186 583	45,3	Hypotetic 8.0 8000 1...	No	Hypotetic	8.0-8 000	8 000	180,0	170,0	2 500	-
VE7	513 029	6 197 660	47,0	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	165,0	2 037	8,8
VE8	512 122	6 196 524	48,3	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	165,0	2 037	8,8
VE9	511 961	6 195 326	48,8	Siemens Gamesa SG ...	No	Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	165,0	2 037	8,8

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SHADOW - Main Result

Calculation: SHADOW

Shadow receptor-Input

No.	Y	X	Z	Width	Height	Elevation a.g.l.	Slope of window	Direction mode	Eye height (ZVI) a.g.l.
			[m]	[m]	[m]	[m]	[°]		[m]
G01	506 843	6 200 422	54,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G02	507 506	6 199 600	51,9	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G03	507 490	6 199 545	52,7	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G04	507 464	6 199 492	53,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G05	507 561	6 199 583	52,4	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G06	507 632	6 199 555	53,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G07	507 619	6 199 509	53,5	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G08	507 537	6 199 529	52,3	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G09	507 682	6 199 497	53,8	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G10	507 669	6 199 423	53,1	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G11	507 642	6 199 366	54,3	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G12	507 228	6 198 595	55,8	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G13	507 313	6 198 194	54,4	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G14	509 558	6 201 886	47,1	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G15	509 794	6 201 446	49,3	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G16	509 856	6 201 185	51,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G17	510 988	6 201 034	51,6	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G18	508 962	6 200 071	50,7	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G19	510 413	6 199 759	48,9	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G20	509 553	6 199 558	53,4	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G21	512 320	6 200 121	50,9	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G22	513 368	6 195 217	46,4	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G23	513 633	6 195 185	45,8	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G24	513 680	6 195 355	46,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G25	513 740	6 195 540	45,6	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G26	513 978	6 196 950	47,1	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G27	514 634	6 196 384	46,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G28	514 618	6 196 386	45,9	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G29	514 593	6 196 389	45,7	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G30	514 567	6 196 392	44,3	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G31	514 535	6 196 397	43,3	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G32	514 544	6 196 497	44,3	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G33	514 564	6 196 494	45,2	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G34	514 587	6 196 492	45,9	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G35	514 541	6 196 549	43,6	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G36	510 744	6 195 273	52,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G37	507 058	6 197 245	55,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G38	507 055	6 197 200	55,4	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G39	505 767	6 195 866	56,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G40	506 485	6 195 329	55,6	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G41	504 924	6 194 409	55,7	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G42	510 825	6 194 492	51,1	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G43	510 860	6 194 485	51,5	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G44	511 099	6 194 463	50,7	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G45	511 072	6 194 465	51,4	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G46	511 051	6 194 468	52,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G47	511 018	6 194 470	52,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G48	510 973	6 194 477	51,6	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G49	510 940	6 194 480	51,1	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G50	512 500	6 191 593	49,9	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G51	512 482	6 191 483	48,8	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G52	512 537	6 191 402	49,6	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G53	512 499	6 190 966	48,8	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G54	512 499	6 190 841	50,4	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G55	513 257	6 189 826	47,4	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G56	513 387	6 189 656	46,7	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G57	512 309	6 189 025	50,4	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G58	512 133	6 188 384	48,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0

Project:

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Calculated:

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SHADOW - Main Result

Calculation: SHADOW

Calculation Results

Shadow receptor

No.	Shadow, expected values	
	Shadow hours per year [h/year]	Avoided hours per year [h/year]
G01*	27:04	5:46
G02*	24:43	14:03
G03*	27:39	14:15
G04*	29:54	13:25
G05*	23:09	11:24
G06*	20:42	9:33
G07*	25:31	9:44
G08*	27:32	11:28
G09*	21:13	9:52
G10*	25:37	11:20
G11*	26:50	12:28
G12	28:56	
G13	28:18	
G14*	28:39	2:14
G15*	24:03	17:54
G16*	19:13	35:38
G17*	23:08	18:36
G18*	29:51	12:51
G19*	23:34	13:41
G20*	23:05	53:24
G21	10:24	
G22	7:06	
G23	10:01	
G24	11:19	
G25	12:03	
G26	11:32	
G27	6:55	
G28	8:38	
G29	8:36	
G30	8:35	
G31	8:37	
G32	10:00	
G33	10:06	
G34	10:13	
G35	10:54	
G36*	17:03	14:12
G37*	31:27	30:25
G38*	29:45	29:23
G39*	25:45	27:01
G40*	21:59	46:07
G41*	26:27	38:00
G42	27:33	
G43	24:30	
G44	16:19	
G45	15:29	
G46	15:49	
G47	16:26	
G48	17:16	
G49	18:23	
G50	21:09	
G51	12:39	
G52	13:38	
G53*	22:25	0:53
G54*	27:39	2:54
G55	18:57	
G56	17:56	
G57	21:47	
G58	25:39	

* Receptors where shadow flicker is reduced by curtailment

SHADOW - Main Result

Calculation: SHADOW

Total amount of flickering on the shadow receptors caused by each WTG

No.	Name	Stopped due to flicker curtailment [h/year]	Expected [h/year]
2	Siemens Gamesa SG 6.0-170 6600 170.0 !O! hub: 169,0 m (TOT: 254,0 m) (1)		13:54
3	Siemens Gamesa SG 6.0-170 6600 170.0 !O! hub: 169,0 m (TOT: 254,0 m) (2)		0:35
4	Siemens Gamesa SG 6.0-170 6600 170.0 !O! hub: 169,0 m (TOT: 254,0 m) (3)		0:00
5	Siemens Gamesa SG 6.0-170 6600 170.0 !O! hub: 169,0 m (TOT: 254,0 m) (4)		26:34
26	ENERCON E-175 EP5 6000 175.0 !O! hub: 182,5 m (TOT: 270,0 m) (47)		0:00
27	ENERCON E-175 EP5 6000 175.0 !O! hub: 182,5 m (TOT: 270,0 m) (48)		0:00
28	ENERCON E-175 EP5 6000 175.0 !O! hub: 182,5 m (TOT: 270,0 m) (49)		0:00
29	ENERCON E-175 EP5 6000 175.0 !O! hub: 182,5 m (TOT: 270,0 m) (50)		0:00
30	ENERCON E-175 EP5 6000 175.0 !O! hub: 182,5 m (TOT: 270,0 m) (51)		0:00
31	ENERCON E-175 EP5 6000 175.0 !O! hub: 182,5 m (TOT: 270,0 m) (52)		0:00
32	ENERCON E-175 EP5 6000 175.0 !O! hub: 182,5 m (TOT: 270,0 m) (53)		2:36
32	Hypotetic 8.0 8000 180.0 !-! hub: 170,0 m (TOT: 260,0 m) (44)		8:52
33	ENERCON E-175 EP5 6000 175.0 !O! hub: 182,5 m (TOT: 270,0 m) (54)		0:00
33	Hypotetic 8.0 8000 180.0 !-! hub: 170,0 m (TOT: 260,0 m) (45)		33:03
50	Hypotetic 8.0 8000 180.0 !-! hub: 170,0 m (TOT: 260,0 m) (43)		13:05
52	Hypotetic 8.0 8000 180.0 !-! hub: 170,0 m (TOT: 260,0 m) (38)		11:22
53	Hypotetic 8.0 8000 180.0 !-! hub: 170,0 m (TOT: 260,0 m) (39)		23:22
54	Hypotetic 8.0 8000 180.0 !-! hub: 170,0 m (TOT: 260,0 m) (40)		2:44
55	Hypotetic 8.0 8000 180.0 !-! hub: 170,0 m (TOT: 260,0 m) (41)		21:42
56	Hypotetic 8.0 8000 180.0 !-! hub: 170,0 m (TOT: 260,0 m) (42)		47:42
E-VE01	Hypothetical 10000 200.0 !O! hub: 180,0 m (TOT: 280,0 m) (9)	73:27	2:30
E-VE02	Hypothetical 10000 200.0 !O! hub: 180,0 m (TOT: 280,0 m) (10)	133:04	13:35
E-VE03	Hypothetical 10000 200.0 !O! hub: 180,0 m (TOT: 280,0 m) (11)	59:54	2:31
E-VE04	Hypothetical 10000 200.0 !O! hub: 180,0 m (TOT: 280,0 m) (12)	97:17	0:00
E-VE05	Hypothetical 10000 200.0 !O! hub: 180,0 m (TOT: 280,0 m) (13)	14:31	8:48
E-VE06	Hypothetical 10000 200.0 !O! hub: 180,0 m (TOT: 280,0 m) (14)	72:55	5:31
E-VE07	Hypothetical 10000 200.0 !O! hub: 180,0 m (TOT: 280,0 m) (15)	163:00	0:26
E-VE08	Hypothetical 10000 200.0 !O! hub: 180,0 m (TOT: 280,0 m) (16)	106:47	21:51
E-VE09	Hypothetical 10000 200.0 !O! hub: 180,0 m (TOT: 280,0 m) (17)	110:51	4:45
E-VE10	Hypothetical 10000 200.0 !O! hub: 180,0 m (TOT: 280,0 m) (18)		6:58
E-VE11	Hypothetical 10000 200.0 !O! hub: 180,0 m (TOT: 280,0 m) (19)	8:14	3:09
E-VE12	Hypothetical 10000 200.0 !O! hub: 180,0 m (TOT: 280,0 m) (20)		3:32
E-VE13	Hypothetical 10000 200.0 !O! hub: 180,0 m (TOT: 280,0 m) (21)		2:03
E-VE14	Hypothetical 10000 200.0 !O! hub: 180,0 m (TOT: 280,0 m) (22)		1:01
E-VE15	Hypothetical 10000 200.0 !O! hub: 180,0 m (TOT: 280,0 m) (23)	48:21	0:00
E-VE16	Hypothetical 10000 200.0 !O! hub: 180,0 m (TOT: 280,0 m) (24)		21:53
E-VE17	Hypothetical 10000 200.0 !O! hub: 180,0 m (TOT: 280,0 m) (25)		18:22
E-VE18	Hypothetical 10000 200.0 !O! hub: 180,0 m (TOT: 280,0 m) (26)	9:49	5:58
E-VE19	Hypothetical 10000 200.0 !O! hub: 180,0 m (TOT: 280,0 m) (27)		0:00
E-VE20	Hypothetical 10000 200.0 !O! hub: 180,0 m (TOT: 280,0 m) (28)		7:38
E-VE21	Hypothetical 10000 200.0 !O! hub: 180,0 m (TOT: 280,0 m) (29)		0:00
E-VE22	Hypothetical 10000 200.0 !O! hub: 180,0 m (TOT: 280,0 m) (30)		0:00
E-VE23	Hypothetical 10000 200.0 !O! hub: 180,0 m (TOT: 280,0 m) (31)		0:00
E-VE24	Hypothetical 10000 200.0 !O! hub: 180,0 m (TOT: 280,0 m) (32)		0:00
E-VE25	Hypothetical 10000 200.0 !O! hub: 180,0 m (TOT: 280,0 m) (33)		0:00
E-VE26	Hypothetical 10000 200.0 !O! hub: 180,0 m (TOT: 280,0 m) (34)		40:50
E-VE27	Hypothetical 10000 200.0 !O! hub: 180,0 m (TOT: 280,0 m) (35)		18:00
N-VE01	Hypothetical 10000 200.0 !O! hub: 180,0 m (TOT: 280,0 m) (1)	5:11	0:55
N-VE02	Hypothetical 10000 200.0 !O! hub: 180,0 m (TOT: 280,0 m) (2)	112:34	11:12
N-VE03	Hypothetical 10000 200.0 !O! hub: 180,0 m (TOT: 280,0 m) (3)		0:00
N-VE04	Hypothetical 10000 200.0 !O! hub: 180,0 m (TOT: 280,0 m) (4)	30:47	11:09
N-VE05	Hypothetical 10000 200.0 !O! hub: 180,0 m (TOT: 280,0 m) (5)	124:04	8:23
N-VE06	Hypothetical 10000 200.0 !O! hub: 180,0 m (TOT: 280,0 m) (6)	94:18	7:22
N-VE07	Hypothetical 10000 200.0 !O! hub: 180,0 m (TOT: 280,0 m) (7)	337:28	18:25
N-VE08	Hypothetical 10000 200.0 !O! hub: 180,0 m (TOT: 280,0 m) (8)	168:38	20:34
VE06	Hypotetic 8.0 8000 180.0 !-! hub: 169,0 m (TOT: 259,0 m) (5)		1:08
VE07	Hypotetic 8.0 8000 180.0 !-! hub: 169,0 m (TOT: 259,0 m) (6)		6:48
VE1	Hypotetic 8.0 8000 180.0 !-! hub: 170,0 m (TOT: 260,0 m) (7)		48:23
VE1	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (21)		6:20
VE10	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (15)		0:00
VE11	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (14)		19:50
VE12	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (13)		9:31
VE13	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (26)		2:06
VE14	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (12)		0:00
VE15	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (24)		10:42

To be continued on next page...

Project:

UAB Eurostat 1 planuojamos ukinės veiklos – vejo elektriniu irengimas Pasvalio r. sav., Pusaloto sen., Pagirnupiu k., Jaciunu k., Matkunu k., Deglenu k., Daukuciu vs., Jakuboniu k., Sermuksniu k., Mickaiciu k., Budininku k., Kidzioniu k., Ozkyciu k. ir Panevezio r. sav., Panevezio sen., Pazuku k., Eimuliskio k., Grikpedziu k., Staciunu k.

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Calculated:

2024-11-22 10:34/4.1.254

SHADOW - Main Result

Calculation: SHADOW

...continued from previous page

No.	Name	Stopped due to flicker curtailment [h/year]	Expected [h/year]
VE16	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (27)		5:26
VE17	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (28)		1:32
VE18	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (25)		0:00
VE19	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (31)		13:29
VE2	Hypotetic 8.0 8000 180.0 !-! hub: 170,0 m (TOT: 260,0 m) (8)		18:19
VE2	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (32)		21:54
VE20	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (30)		0:00
VE21	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (29)		28:47
VE27	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (55)		1:10
VE29	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (56)		3:21
VE3	Hypotetic 8.0 8000 180.0 !-! hub: 170,0 m (TOT: 260,0 m) (9)		11:20
VE3	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (20)		0:00
VE4	Hypotetic 8.0 8000 180.0 !-! hub: 170,0 m (TOT: 260,0 m) (11)		0:00
VE4	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (19)		0:00
VE5	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (22)		11:37
VE6	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (23)		14:54
VE6	Hypotetic 8.0 8000 180.0 !-! hub: 170,0 m (TOT: 260,0 m) (10)		1:03
VE7	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (17)		4:55
VE8	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (18)		11:10
VE9	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 165,0 m (TOT: 250,0 m) (16)		16:56

Total times in Receptor wise and WTG wise tables can differ, as a WTG can lead to flicker at 2 or more receptors simultaneously and/or receptors may receive flicker from 2 or more WTGs simultaneously.

The calculation of the total expected values for a given receptor assumes a weighted average directional reduction for all WTGs contributing to shadow flicker within the same day. In the case where shadow flicker from different WTGs is not concurrent within the day, the total expected time at a given receptor may deviate marginally from the individual flicker time caused by each turbine separately.