

SHADOW - Main Result

Calculation: Vestas V162 - Real Case Curtailment
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) []
Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
1,17 2,29 4,58 6,82 8,69 9,44 8,63 7,75 5,49 2,82 0,76 0,60

Operational hours are calculated from WTGs in calculation and
wind distribution:
EMD-WRF Europe ERA5

Operational time
N NNE ENE E ESE SSE S SSW WSW W WNW NNW Sum
512 408 421 308 369 814 801 858 1 132 977 984 664 8 248

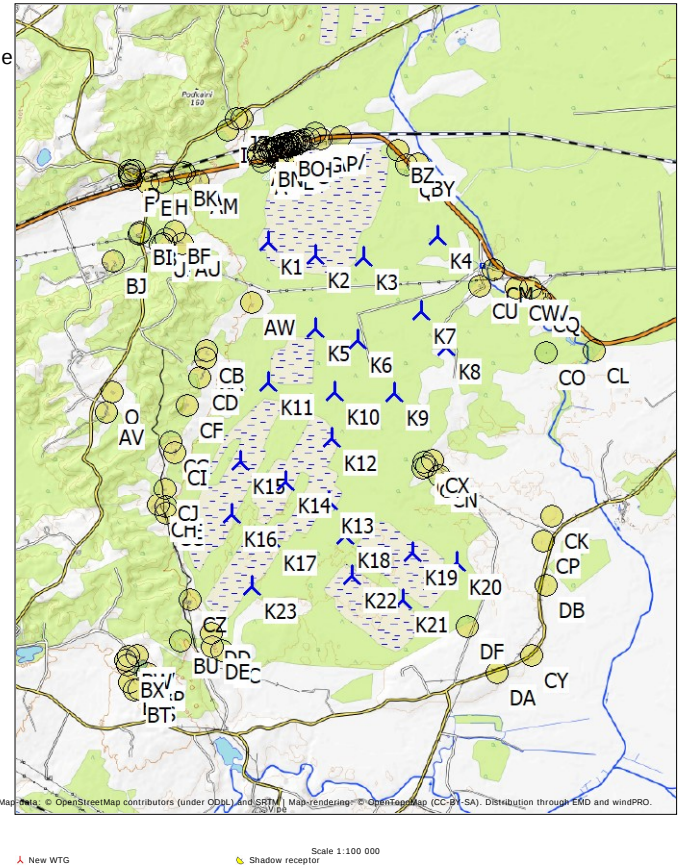
Monthly aggregation of real case reduction
Idle start wind speed 3,0 m/s
Flicker curtailment by stopping specific turbines

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: DTM - Terrain model
Receptor grid resolution: 1,0 m
Topographic shadow included in calculation

All coordinates are in
Geo [deg]-WGS84

WTGs

	Longitude	Latitude	Z	Row data/Description	WTG type		Power, rated [kW]	Rotor diameter [m]	Hub height [m]	Shadow data	
					Valid	Manufact.				Calculation distance [m]	RPM [RPM]
1	26,133687° E	56,495255° N	92,4	K20	Yes	VESTAS	V162-6.2-6 200	6 200	162,0	149,0	2 042 -
2	26,122079° E	56,490850° N	90,8	K21	Yes	VESTAS	V162-6.2-6 200	6 200	162,0	149,0	2 042 -
3	26,124174° E	56,496394° N	91,0	K19	Yes	VESTAS	V162-6.2-6 200	6 200	162,0	149,0	2 042 -
4	26,109636° E	56,498504° N	90,7	K18	Yes	VESTAS	V162-6.2-6 200	6 200	162,0	149,0	2 042 -
5	26,111253° E	56,493739° N	90,3	K22	Yes	VESTAS	V162-6.2-6 200	6 200	162,0	149,0	2 042 -
6	26,092987° E	56,533585° N	92,2	K1	Yes	VESTAS	V162-6.2-6 200	6 200	162,0	149,0	2 042 -
7	26,131467° E	56,521036° N	92,6	K8	Yes	VESTAS	V162-6.2-6 200	6 200	162,0	149,0	2 042 -
8	26,093765° E	56,498252° N	90,2	K17	Yes	VESTAS	V162-6.2-6 200	6 200	162,0	149,0	2 042 -
9	26,103142° E	56,523214° N	92,5	K5	Yes	VESTAS	V162-6.2-6 200	6 200	162,0	149,0	2 042 -
10	26,120254° E	56,515533° N	92,3	K9	Yes	VESTAS	V162-6.2-6 200	6 200	162,0	149,0	2 042 -
11	26,093276° E	56,516918° N	93,0	K11	Yes	VESTAS	V162-6.2-6 200	6 200	162,0	149,0	2 042 -
12	26,106853° E	56,510195° N	91,2	K12	Yes	VESTAS	V162-6.2-6 200	6 200	162,0	149,0	2 042 -
13	26,089645° E	56,492430° N	90,5	K23	Yes	VESTAS	V162-6.2-6 200	6 200	162,0	149,0	2 042 -
14	26,129593° E	56,534258° N	91,8	K4	Yes	VESTAS	V162-6.2-6 200	6 200	162,0	149,0	2 042 -
15	26,113605° E	56,531660° N	92,4	K3	Yes	VESTAS	V162-6.2-6 200	6 200	162,0	149,0	2 042 -
16	26,086963° E	56,507489° N	91,9	K15	Yes	VESTAS	V162-6.2-6 200	6 200	162,0	149,0	2 042 -
17	26,106123° E	56,502711° N	90,6	K13	Yes	VESTAS	V162-6.2-6 200	6 200	162,0	149,0	2 042 -
18	26,085094° E	56,501058° N	90,6	K16	Yes	VESTAS	V162-6.2-6 200	6 200	162,0	149,0	2 042 -
19	26,096745° E	56,505013° N	90,7	K14	Yes	VESTAS	V162-6.2-6 200	6 200	162,0	149,0	2 042 -
20	26,112453° E	56,521917° N	92,4	K6	Yes	VESTAS	V162-6.2-6 200	6 200	162,0	149,0	2 042 -
21	26,103421° E	56,531927° N	91,9	K2	Yes	VESTAS	V162-6.2-6 200	6 200	162,0	149,0	2 042 -
22	26,126045° E	56,525271° N	92,8	K7	Yes	VESTAS	V162-6.2-6 200	6 200	162,0	149,0	2 042 -
23	26,107497° E	56,515765° N	94,0	K10	Yes	VESTAS	V162-6.2-6 200	6 200	162,0	149,0	2 042 -



SHADOW - Main Result

Calculation: Vestas V162 - Real Case Curtailment
Shadow receptor-Input

No.	Name	Longitude	Latitude	Z	Width	Height	Elevation a.g.l.	Slope of window	Direction mode	Eye height (ZVI) a.g.l.
				[m]	[m]	[m]	[m]	[°]		[m]
A	Mizuki	26,063286° E	56,541498° N	115,1	1,0	1,0	1,0	90,0	"Green house mode"	2,0
B	Lejas Sunas	26,063506° E	56,541370° N	114,4	1,0	1,0	1,0	90,0	"Green house mode"	2,0
C	Me ž sunas	26,063185° E	56,541958° N	117,1	1,0	1,0	1,0	90,0	"Green house mode"	2,0
D	Veca skola	26,064137° E	56,542003° N	115,9	1,0	1,0	1,0	90,0	"Green house mode"	2,0
E	Lejas Suni	26,067220° E	56,540460° N	107,6	1,0	1,0	1,0	90,0	"Green house mode"	2,0
F	Papeles	26,063771° E	56,540924° N	112,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G	Vigriezes	26,087530° E	56,548261° N	102,8	1,0	1,0	1,0	90,0	"Green house mode"	2,0
H	Sunu Medilas	26,070454° E	56,540671° N	107,4	1,0	1,0	1,0	90,0	"Green house mode"	2,0
I	Kuku Pasile	26,084459° E	56,546804° N	104,3	1,0	1,0	1,0	90,0	"Green house mode"	2,0
J	Kuku Pasile 2	26,086284° E	56,548103° N	105,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
K	Bambari	26,071285° E	56,533849° N	106,9	1,0	1,0	1,0	90,0	"Green house mode"	2,0
L	Kukas Nr. 32	26,097933° E	56,545025° N	100,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
M	Zeltinkukas	26,097923° E	56,542609° N	100,1	1,0	1,0	1,0	90,0	"Green house mode"	2,0
N	Kukas Nr. 29	26,099665° E	56,545262° N	99,2	1,0	1,0	1,0	90,0	"Green house mode"	2,0
O	Lukapicku Bajari	26,059655° E	56,515709° N	136,3	1,0	1,0	1,0	90,0	"Green house mode"	2,0
P	Driksnas	26,097309° E	56,544914° N	100,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
Q	Lei š u Sils	26,122977° E	56,542609° N	92,7	1,0	1,0	1,0	90,0	"Green house mode"	2,0
R	Silmalas	26,070518° E	56,533356° N	109,1	1,0	1,0	1,0	90,0	"Green house mode"	2,0
S	Purmalrasas 2	26,096086° E	56,544720° N	99,3	1,0	1,0	1,0	90,0	"Green house mode"	2,0
T	Rozes	26,096916° E	56,544879° N	100,1	1,0	1,0	1,0	90,0	"Green house mode"	2,0
U	Gobinas	26,069881° E	56,533175° N	109,6	1,0	1,0	1,0	90,0	"Green house mode"	2,0
V	Kukas Nr. 5A	26,108687° E	56,545953° N	93,2	1,0	1,0	1,0	90,0	"Green house mode"	2,0
W	Kukas Nr. 1	26,094393° E	56,544291° N	98,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
X	Kaplica	26,101901° E	56,545728° N	97,3	1,0	1,0	1,0	90,0	"Green house mode"	2,0
Y	Kukas Nr. 8	26,096829° E	56,543964° N	97,7	1,0	1,0	1,0	90,0	"Green house mode"	2,0
Z	Kukas Nr. 22	26,097396° E	56,545205° N	100,2	1,0	1,0	1,0	90,0	"Green house mode"	2,0
AA	Vasjkova nams	26,096559° E	56,544498° N	99,1	1,0	1,0	1,0	90,0	"Green house mode"	2,0
AB	Kukas Nr. 7	26,097318° E	56,544069° N	97,5	1,0	1,0	1,0	90,0	"Green house mode"	2,0
AC	Kukas Nr. 28	26,100077° E	56,545512° N	98,4	1,0	1,0	1,0	90,0	"Green house mode"	2,0
AD	Kukas Nr. 2	26,093910° E	56,544204° N	97,5	1,0	1,0	1,0	90,0	"Green house mode"	2,0
AE	Kukas Nr. 33	26,095190° E	56,544610° N	99,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
AF	Kukas Nr. 24	26,098771° E	56,545347° N	99,8	1,0	1,0	1,0	90,0	"Green house mode"	2,0
AG	Kukas Nr. 27	26,099229° E	56,545399° N	99,4	1,0	1,0	1,0	90,0	"Green house mode"	2,0
AH	Kukas Nr. 10	26,096024° E	56,543781° N	97,4	1,0	1,0	1,0	90,0	"Green house mode"	2,0
AI	Kukas Nr. 9	26,096452° E	56,543877° N	97,6	1,0	1,0	1,0	90,0	"Green house mode"	2,0
AJ	Kukas Nr. 3	26,093305° E	56,544298° N	97,3	1,0	1,0	1,0	90,0	"Green house mode"	2,0
AK	1	26,090963° E	56,543704° N	97,8	1,0	1,0	1,0	90,0	"Green house mode"	2,0
AL	1	26,091047° E	56,544021° N	97,8	1,0	1,0	1,0	90,0	"Green house mode"	2,0
AM	Kuku Drava	26,077988° E	56,540746° N	102,7	1,0	1,0	1,0	90,0	"Green house mode"	2,0
AN	Kukas Nr. 17	26,095025° E	56,544828° N	99,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
AO	Maja 145,3. km	26,103352° E	56,546415° N	94,9	1,0	1,0	1,0	90,0	"Green house mode"	2,0
AP	Kukas Nr. 6	26,104578° E	56,545778° N	96,4	1,0	1,0	1,0	90,0	"Green house mode"	2,0
AQ	Kukas Nr. 23	26,098304° E	56,545304° N	99,9	1,0	1,0	1,0	90,0	"Green house mode"	2,0
AR	Kukas Nr. 15	26,093682° E	56,544507° N	97,9	1,0	1,0	1,0	90,0	"Green house mode"	2,0
AS	Kukas Nr. 16	26,094237° E	56,544642° N	98,5	1,0	1,0	1,0	90,0	"Green house mode"	2,0
AT	Kukas Nr. 31	26,097683° E	56,544128° N	97,4	1,0	1,0	1,0	90,0	"Green house mode"	2,0
AU	Dukernieki	26,074658° E	56,533321° N	109,1	1,0	1,0	1,0	90,0	"Green house mode"	2,0
AV	Lukapickas	26,058230° E	56,513249° N	135,3	1,0	1,0	1,0	90,0	"Green house mode"	2,0
AW	Purmalrasas	26,089573° E	56,526337° N	100,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
AX	Kukas 11	26,095602° E	56,543691° N	97,1	1,0	1,0	1,0	90,0	"Green house mode"	2,0
AY	Kukas Nr. 4	26,092904° E	56,544767° N	97,4	1,0	1,0	1,0	90,0	"Green house mode"	2,0
AZ	Kukas Nr. 34	26,091860° E	56,543045° N	95,7	1,0	1,0	1,0	90,0	"Green house mode"	2,0
BA	Kuku Medilas	26,075079° E	56,541753° N	104,7	1,0	1,0	1,0	90,0	"Green house mode"	2,0
BB	Kraukli	26,065152° E	56,534400° N	110,8	1,0	1,0	1,0	90,0	"Green house mode"	2,0
BC	Kuku Balo ž i	26,098273° E	56,544306° N	97,6	1,0	1,0	1,0	90,0	"Green house mode"	2,0
BD	Kukas Nr. 13	26,094800° E	56,543545° N	96,6	1,0	1,0	1,0	90,0	"Green house mode"	2,0
BE	Kukas Nr. 12	26,095264° E	56,543601° N	96,7	1,0	1,0	1,0	90,0	"Green house mode"	2,0
BF	Kartupnieki	26,073040° E	56,534828° N	105,5	1,0	1,0	1,0	90,0	"Green house mode"	2,0
BG	Kukas Nr. 30	26,100708° E	56,545660° N	97,1	1,0	1,0	1,0	90,0	"Green house mode"	2,0
BH	Zeltinkukas 1	26,098768° E	56,545101° N	99,8	1,0	1,0	1,0	90,0	"Green house mode"	2,0
BI	Mednieki	26,065620° E	56,534715° N	109,5	1,0	1,0	1,0	90,0	"Green house mode"	2,0
BJ	O š lejas	26,059760° E	56,531276° N	111,3	1,0	1,0	1,0	90,0	"Green house mode"	2,0
BK	Kraces	26,074410° E	56,541680° N	105,1	1,0	1,0	1,0	90,0	"Green house mode"	2,0

To be continued on next page...

SHADOW - Main Result

Calculation: Vestas V162 - Real Case Curtailment

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No.	Name	Longitude	Latitude	Z	Width	Height	Elevation a.g.l.	Slope of window	Direction mode	Eye height (ZVI) a.g.l.
				[m]	[m]	[m]	[m]	[°]		[m]
	BL Kukas Nr. 5	26,092328° E	56,544483° N	97,6	1,0	1,0	1,0	90,0	"Green house mode"	2,0
	BM Jani š i	26,096074° E	56,545089° N	99,7	1,0	1,0	1,0	90,0	"Green house mode"	2,0
	BN Kukas Nr. 36	26,092574° E	56,544009° N	96,9	1,0	1,0	1,0	90,0	"Green house mode"	2,0
	BO Kukas Nr. 20	26,096859° E	56,545176° N	100,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
	BP Speldzinu Ozolini	26,067071° E	56,482035° N	105,1	1,0	1,0	1,0	90,0	"Green house mode"	2,0
	BQ Bisenieki 2	26,063230° E	56,480993° N	104,5	1,0	1,0	1,0	90,0	"Green house mode"	2,0
	BR Dujas	26,062426° E	56,483614° N	104,7	1,0	1,0	1,0	90,0	"Green house mode"	2,0
	BS Malini	26,065318° E	56,480229° N	109,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
	BT Speldzinās	26,064354° E	56,480104° N	109,7	1,0	1,0	1,0	90,0	"Green house mode"	2,0
	BU Virzinas	26,074364° E	56,485874° N	104,9	1,0	1,0	1,0	90,0	"Green house mode"	2,0
	BV Lici š i	26,064859° E	56,484163° N	103,5	1,0	1,0	1,0	90,0	"Green house mode"	2,0
	BW Priednieku Bisenieki	26,063061° E	56,484142° N	106,3	1,0	1,0	1,0	90,0	"Green house mode"	2,0
	BX Bisenieki	26,062834° E	56,483109° N	103,1	1,0	1,0	1,0	90,0	"Green house mode"	2,0
	BY Lei š u Sils	26,125444° E	56,542875° N	92,8	1,0	1,0	1,0	90,0	"Green house mode"	2,0
	BZ Lei š usils	26,121034° E	56,544456° N	94,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
	CA Strazdi	26,079632° E	56,519765° N	106,7	1,0	1,0	1,0	90,0	"Green house mode"	2,0
	CB Radini	26,079889° E	56,520588° N	108,3	1,0	1,0	1,0	90,0	"Green house mode"	2,0
	CC Kreslini	26,071224° E	56,501171° N	107,5	1,0	1,0	1,0	90,0	"Green house mode"	2,0
	CD Sili	26,078392° E	56,517462° N	105,6	1,0	1,0	1,0	90,0	"Green house mode"	2,0
	CE Skujenieki	26,071168° E	56,502014° N	107,2	1,0	1,0	1,0	90,0	"Green house mode"	2,0
	CF Salmini	26,075652° E	56,514176° N	109,9	1,0	1,0	1,0	90,0	"Green house mode"	2,0
	CG Senci	26,072043° E	56,509743° N	111,1	1,0	1,0	1,0	90,0	"Green house mode"	2,0
	CH Pakalni	26,069473° E	56,502185° N	111,2	1,0	1,0	1,0	90,0	"Green house mode"	2,0
	CI Skalbes	26,072883° E	56,508558° N	110,7	1,0	1,0	1,0	90,0	"Green house mode"	2,0
	CJ Kastani	26,070978° E	56,504189° N	108,9	1,0	1,0	1,0	90,0	"Green house mode"	2,0
	CK Kvie š i	26,154401° E	56,500923° N	90,8	1,0	1,0	1,0	90,0	"Green house mode"	2,0
	CL Pukulejas	26,163466° E	56,520586° N	91,5	1,0	1,0	1,0	90,0	"Green house mode"	2,0
	CM Celinieki	26,141552° E	56,530263° N	91,8	1,0	1,0	1,0	90,0	"Green house mode"	2,0
	CN Purvini	26,130133° E	56,505780° N	94,5	1,0	1,0	1,0	90,0	"Green house mode"	2,0
	CO Salenieki	26,152954° E	56,520418° N	93,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
	CP Ogu Purvs	26,152484° E	56,497834° N	90,8	1,0	1,0	1,0	90,0	"Green house mode"	2,0
	CQ Me ž a Papuli	26,151833° E	56,526776° N	90,3	1,0	1,0	1,0	90,0	"Green house mode"	2,0
	CR Noras	26,126508° E	56,506629° N	96,7	1,0	1,0	1,0	90,0	"Green house mode"	2,0
	CS Me ž mali	26,126691° E	56,507313° N	97,1	1,0	1,0	1,0	90,0	"Green house mode"	2,0
	CT Kurani	26,127398° E	56,506989° N	97,4	1,0	1,0	1,0	90,0	"Green house mode"	2,0
	CU Berzkalni	26,138739° E	56,528258° N	92,5	1,0	1,0	1,0	90,0	"Green house mode"	2,0
	CV Saulcerini	26,149626° E	56,528094° N	93,5	1,0	1,0	1,0	90,0	"Green house mode"	2,0
	CW Airites	26,146614° E	56,528054° N	93,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
	CX Lejnietki	26,128573° E	56,507638° N	96,1	1,0	1,0	1,0	90,0	"Green house mode"	2,0
	CY Vipmali	26,149895° E	56,484226° N	91,5	1,0	1,0	1,0	90,0	"Green house mode"	2,0
	CZ Celmalas	26,076176° E	56,490952° N	108,1	1,0	1,0	1,0	90,0	"Green house mode"	2,0
	DA Kalna Galvani	26,142426° E	56,482217° N	98,8	1,0	1,0	1,0	90,0	"Green house mode"	2,0
	DB Su š i	26,153079° E	56,492558° N	90,8	1,0	1,0	1,0	90,0	"Green house mode"	2,0
	DC Strautlejas	26,083178° E	56,484852° N	97,2	1,0	1,0	1,0	90,0	"Green house mode"	2,0
	DD Irgeni	26,080875° E	56,486825° N	98,2	1,0	1,0	1,0	90,0	"Green house mode"	2,0
	DE Alejas	26,081081° E	56,485255° N	101,5	1,0	1,0	1,0	90,0	"Green house mode"	2,0
	DF Galvani	26,135915° E	56,487671° N	95,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0

Calculation Results

Shadow receptor

No.	Name	Shadow, worst case				Shadow, expected values	
		Shadow hours per year	Shadow days per year	Max shadow hours per day	Avoided hours per year	Avoided days per year	Shadow hours per year
		[h/year]	[days/year]	[h/day]	[h/year]	[days/year]	[h/year]
A Mizuki		3:59	21	0:18			0:37
B Lejas Sunas		4:09	22	0:18			0:38
C Me ž sunas		0:00	0	0:00			0:00
D Veca skola		4:11	22	0:18			0:38
E Lejas Suni		6:32	27	0:22			1:01
F Papeles		4:23	23	0:18			0:41
G Vigriezes		0:00	0	0:00			0:00

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SHADOW - Main Result

Calculation: Vestas V162 - Real Case Curtailment

...continued from previous page

No.	Name	Shadow, worst case			Avoided hours per year	Avoided days per year	Shadow, expected values	
		Shadow hours per year	Shadow days per year	Max shadow hours per day			Shadow hours per year	Avoided hours per year
		[h/year]	[days/year]	[h/day]	[h/year]	[days/year]	[h/year]	[h/year]
	H Sunu Medilas	8:52	32	0:24			1:22	
	I Kuku Pasile	14:42	51	0:20			0:56	
	J Kuku Pasile 2	0:00	0	0:00			0:00	
	K* Bambari	6:00	41	0:21	10:18	9	1:30	2:43
	L* Kukas Nr. 32	17:46	53	0:23	5:13		1:08	0:16
	M* Zeltinkukas	17:36	53	0:23	4:40		1:07	0:14
	N* Kukas Nr. 29	13:22	43	0:22	8:06		0:49	0:27
	O Lukapicku Bajari	3:49	22	0:17			0:35	
	P* Driksnas	19:17	57	0:23	4:45		1:15	0:14
	Q* Lei š u Sils	11:36	42	0:23	68:44	52	0:55	4:33
	R* Silmalas	4:05	22	0:19	11:17	29	1:00	3:03
	S* Purmalrasas 2	19:30	64	0:23	4:12		1:18	0:13
	T* Rozes	19:36	59	0:23	4:10		1:16	0:12
	U* Gobinas	0:12	9	0:02	10:30	25	0:03	2:51
	V* Kukas Nr. 5A	10:01	39	0:22	22:44	49	0:44	1:30
	W* Kukas Nr. 1	22:00	74	0:22	6:40		1:27	0:22
	X* Kaplica	5:09	25	0:15	11:02	11	0:16	0:39
	Y* Kukas Nr. 8	25:34	69	0:28	13:49		1:40	0:48
	Z* Kukas Nr. 22	17:52	54	0:23	2:19		1:08	0:07
	AA* Vasjkova nams	20:54	64	0:23	7:19		1:23	0:24
	AB* Kukas Nr. 7	24:37	66	0:29	13:52		1:36	0:48
	AC* Kukas Nr. 28	11:24	39	0:22	6:53		0:41	0:22
	AD* Kukas Nr. 2	23:15	76	0:23	7:23		1:32	0:24
	AE* Kukas Nr. 33	20:10	68	0:22	3:59		1:20	0:12
	AF* Kukas Nr. 24	14:41	47	0:23	4:36		0:55	0:14
	AG* Kukas Nr. 27	13:31	44	0:22	5:31		0:50	0:17
	AH* Kukas Nr. 10	25:43	73	0:25	14:20		1:42	0:51
	AI* Kukas Nr. 9	25:43	71	0:26	14:04		1:41	0:49
	AJ* Kukas Nr. 3	23:08	77	0:24	6:17		1:31	0:20
	AK* 1	30:06	89	0:27	13:32		2:02	0:48
	AL* 1	28:02	86	0:27	9:58		1:52	0:34
	AM* Kuku Drava	6:31	28	0:21	20:12	27	0:56	2:09
	AN* Kukas Nr. 17	18:56	67	0:22	1:51		1:15	0:05
	AO* Maja 145,3. km	4:53	36	0:10	5:35		0:17	0:19
	AP* Kukas Nr. 6	24:19	78	0:26	0:02		1:43	0:00
	AQ* Kukas Nr. 23	15:51	49	0:23	3:36		1:00	0:10
	AR* Kukas Nr. 15	21:10	74	0:22	4:04		1:23	0:12
	AS* Kukas Nr. 16	19:40	71	0:22	2:58		1:18	0:09
	AT* Kukas Nr. 31	23:50	64	0:29	14:11		1:33	0:50
	AU* Dukernieki	5:47	25	0:21	18:31	38	1:26	5:08
	AV* Lukapickas	3:00	19	0:18	0:44	2	0:32	0:08
	AW* Purmalrasas	35:54	120	0:25	70:23	113	6:41	13:44
	AX* Kukas 11	26:06	76	0:24	14:50		1:44	0:53
	AY* Kukas Nr. 4	20:20	75	0:21	1:45		1:20	0:05
	AZ* Kukas Nr. 34	34:45	92	0:29	21:19		2:23	1:20
	BA* Kuku Medilas	1:49	31	0:05	12:06	11	0:11	1:15
	BB* Kraukli	1:22	18	0:11	4:59	8	0:20	1:15
	BC* Kuku Balo ž i	21:24	60	0:24	13:45		1:24	0:48
	BD* Kukas Nr. 13	27:43	80	0:26	15:34		1:50	0:56
	BE* Kukas Nr. 12	26:52	78	0:25	15:27		1:47	0:55
	BF* Kartupnieki	4:54	23	0:19	12:17	25	1:10	3:05
	BG* Kukas Nr. 30	9:48	34	0:20	7:16		0:35	0:24
	BH* Zeltinkukas 1	16:06	49	0:23	6:45		1:01	0:21
	BI* Mednieki	1:12	17	0:07	5:29	10	0:17	1:21
	BJ O š lejas	0:00	0	0:00			0:00	
	BK* Kraces	4:20	35	0:09	8:31	5	0:30	0:55
	BL* Kukas Nr. 5	23:02	79	0:24	4:31		1:30	0:14
	BM* Jani š i	18:35	60	0:22	0:45		1:13	0:02
	BN* Kukas Nr. 36	26:48	82	0:27	9:02		1:46	0:31
	BO* Kukas Nr. 20	18:34	57	0:22	1:22		1:12	0:04
	BP* Speldzinu Ozolini	0:02	2	0:01	5:38	34	0:00	1:46
	BQ Bisenieki 2	0:00	0	0:00			0:00	

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SHADOW - Main Result

Calculation: Vestas V162 - Real Case Curtailment

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No.	Name	Shadow, worst case			Avoided hours per year	Avoided days per year	Shadow, expected values	
		Shadow hours per year	Shadow days per year	Max shadow hours per day			Shadow hours per year	Avoided hours per year
		[h/year]	[days/year]	[h/day]	[h/year]	[days/year]	[h/year]	[h/year]
	BR Dujas	9:29	42	0:20			2:58	
	BS Malini	0:00	0	0:00			0:00	
	BT Speldzinas	0:00	0	0:00			0:00	
	BU* Virzinas	0:00	0	0:00	17:37	48	0:00	5:34
	BV Lici š i	14:15	57	0:23			4:28	
	BW Priednieku Bisenieki	9:43	42	0:21			3:03	
	BX* Bisenieki	11:20	52	0:20	0:14		3:33	0:04
	BY* Lei š u Sils	29:45	98	0:24	42:50		2:09	2:44
	BZ* Lei š usils	22:50	70	0:24	25:55		1:31	1:41
	CA* Strazdi	38:43	153	0:26	30:16	27	7:12	6:05
	CB* Radini	35:03	162	0:26	28:09	28	7:12	5:07
	CC* Kreslini	31:44	106	0:27	58:17	101	6:03	17:14
	CD* Sili	35:35	151	0:24	51:09	46	6:36	8:14
	CE* Skujenieki	30:54	106	0:26	69:42	125	5:34	20:17
	CF* Salmini	27:35	129	0:24	56:21	86	5:57	9:51
	CG* Senci	15:32	62	0:24	74:02	155	2:03	15:03
	CH* Pakalni	26:07	112	0:24	61:28	120	4:50	18:01
	CI* Skalbes	33:54	124	0:25	61:32	81	7:43	10:46
	CJ* Kastani	29:04	109	0:25	54:16	103	4:32	14:38
	CK Kvie š i	17:12	54	0:26			3:03	
	CL Pukulejas	5:02	24	0:19			1:21	
	CM* Celinieki	12:24	52	0:22	98:52	169	2:50	19:03
	CN* Purvini	36:57	114	0:26	62:09	114	3:21	10:56
	CO Salenieki	22:38	72	0:28			6:33	
	CP* Ogu Purvs	11:27	49	0:22	16:11	22	2:28	3:42
	CQ* Me ž a Papuli	26:46	116	0:27	20:19	28	5:59	6:25
	CR* Noras	35:02	155	0:29	65:19	79	5:24	9:25
	CS* Me ž mali	32:09	160	0:27	57:55	85	4:43	10:42
	CT* Kurani	30:54	167	0:27	62:59	79	4:36	10:47
	CU* Berzkalni	32:18	127	0:24	85:24	70	5:17	10:08
	CV* Saulcerini	28:06	103	0:26	27:35	56	6:03	8:04
	CW* Airites	24:26	102	0:29	39:45	48	6:29	8:37
	CX* Lejnieki	37:47	180	0:25	50:03	72	7:39	9:14
	CY* Vipmali	2:16	27	0:08	6:12	7	0:42	1:57
	CZ* Celmalas	0:00	0	0:00	60:56	127	0:00	18:46
	DA Kalna Galvani	15:12	50	0:25			4:46	
	DB* Su š i	12:10	52	0:21	12:59	23	3:20	3:53
	DC Strautlejas	9:12	42	0:20			2:53	
	DD Irgeni	6:02	28	0:19			1:52	
	DE Alejas	0:00	0	0:00			0:00	
	DF* Galvani	13:58	54	0:20	64:11	52	4:23	20:13

* Receptors where shadow flicker is reduced by curtailment

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

No.	Name	Worst case [h/year]	Stopped due to flicker curtailment [h/year]	Expected [h/year]
1	K20	28:21	48:10	2:57
2	K21	27:25	60:57	7:35
3	K19	25:59	43:59	5:12
4	K18	46:55		8:07
5	K22	35:03	31:28	6:09
6	K1	41:36	162:45	4:38
7	K8	38:09	86:15	7:41
8	K17	37:24	20:17	5:56
9	K5	37:56	28:17	11:35
10	K9	15:04		1:05
11	K11	16:22	147:45	5:11
12	K12	26:08	26:53	5:26
13	K23	50:03	58:16	8:36
14	K4	36:22	123:46	7:03
15	K3	127:47	23:32	15:23

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SHADOW - Main Result

Calculation: Vestas V162 - Real Case Curtailment

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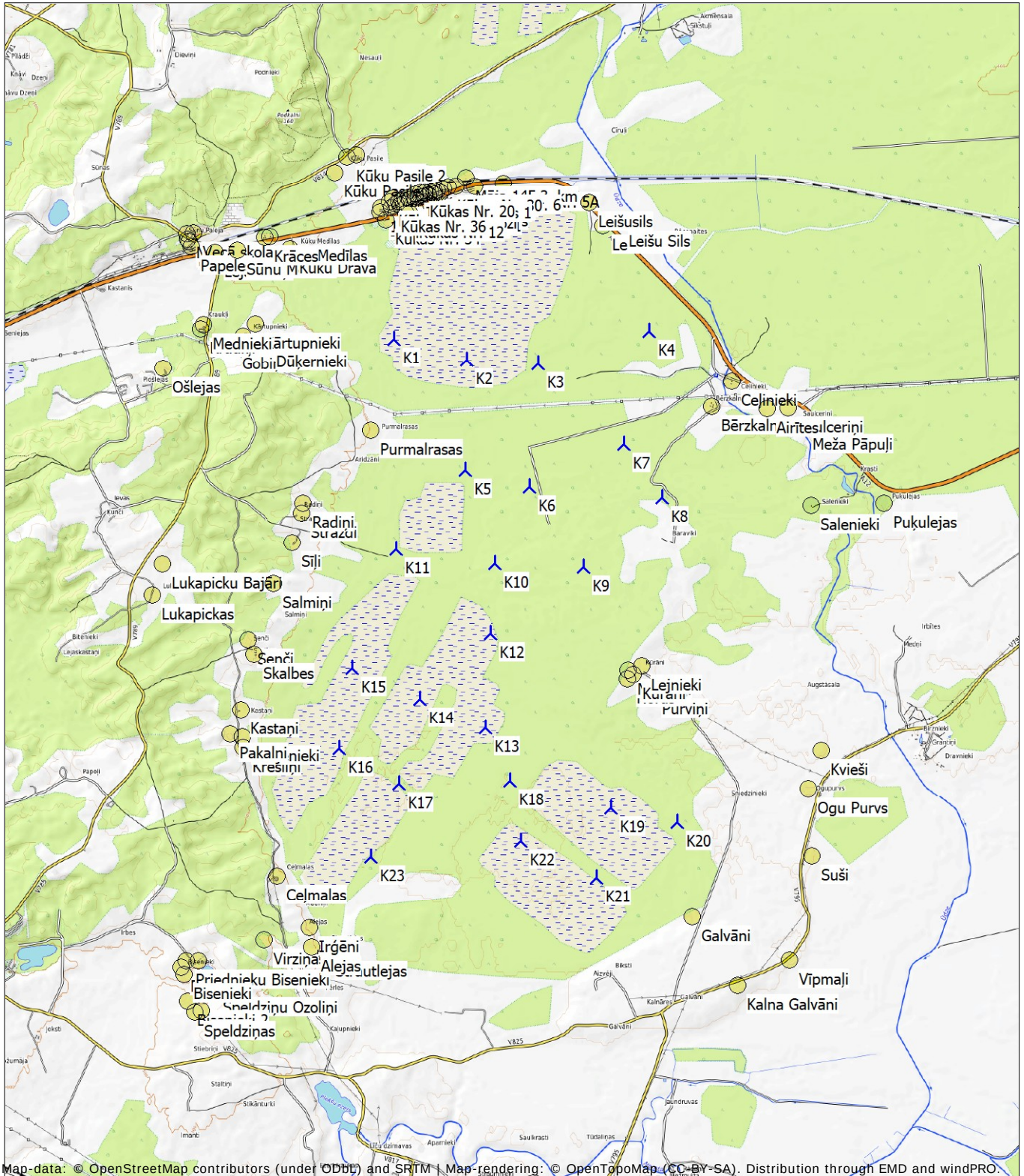
No.	Name	Worst case [h/year]	Stopped due to flicker [h/year]	Expected [h/year]
16	K15	6:49	210:00	1:08
17	K13	0:00	27:59	0:00
18	K16	1:49	118:59	0:19
19	K14	84:32		14:48
20	K6	27:59		5:40
21	K2	124:15	23:40	11:15
22	K7	32:59	48:42	8:20
23	K10	50:19	11:03	10:48

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.

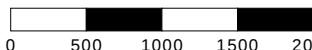
The calculation of the total expected values for a given receptor assumes a weighted average directional reduction for all WTGs contributing to shadow flicker within the same day. In the case where shadow flicker from different WTGs is not concurrent within the day, the total expected time at a given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

SHADOW - Map

Calculation: Vestas V162 - Real Case Curtailment



Map-data: © OpenStreetMap contributors (under ODbL) and SRTM | Map-rendering: © OpenTopoMap (CC-BY-SA). Distribution through EMD and windPRO.



Map: OpenTopoMap, Print scale 1:50 000, Map center Geo WGS84 East: 26,110848° E North: 56,514183° N

New WTG

Shadow receptor

Flicker map level: DTM - Terrain model