

SHADOW - Main Result

Calculation: Shadow Test

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

The calculated times are "worst case" given by the following assumptions:

The sun is shining all the day, from sunrise to sunset

The rotor plane is always perpendicular to the line from the WTG to the sun

The WTG is always operating

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:

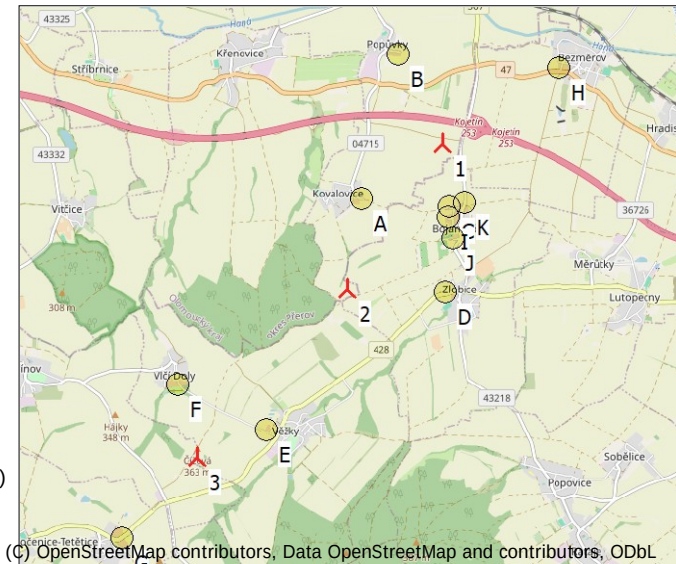
DHM: Elevation Grid Data Object: Kojetin_March 2025_EMDGrid_4.wpg (48)

Receptor grid resolution: 1,0 m

Topographic shadow included in calculation

All coordinates are in

Geo [deg]-WGS84



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

New WTG

Scale 1:100 000

Shadow receptor

WTGs

	Longitude	Latitude	Z	Row	data/Description	WTG type		Type-generator	Power, rated	Rotor diameter	Hub height	Shadow data	
						Valid	Manufact.					Calculation distance	RPM
			[m]						[kW]	[m]	[m]	[m]	[RPM]
1	17,309225° E	49,319482° N	239,8	WT 01		Yes	VESTAS	V162-6.2-6 200	6 200	162,0	149,0	2 042	-
2	17,291945° E	49,302342° N	322,7	WT 02		Yes	VESTAS	V162-6.2-6 200	6 200	162,0	149,0	2 042	-
3	17,264725° E	49,282245° N	356,9	WT 03		Yes	VESTAS	V162-6.2-6 200	6 200	162,0	149,0	2 042	-

Shadow receptor-Input

No.	Name	Longitude	Latitude	Z	Width	Height	Elevation	Slope of	Direction mode	Eye height
				[m]	[m]	[m]	a.g.l.	window		(ZVI) a.g.l.
							[m]	[°]		[m]
A	Kovalovice #92	17,294744° E	49,313072° N	269,9	1,0	1,0	1,0	90,0	"Green house mode"	2,0
B	Pupovky #73	17,301278° E	49,330156° N	194,4	1,0	1,0	1,0	90,0	"Green house mode"	2,0
C	Bojanovice #42	17,310752° E	49,312142° N	251,9	1,0	1,0	1,0	90,0	"Green house mode"	2,0
D	Zlobice #71	17,309818° E	49,301957° N	239,4	1,0	1,0	1,0	90,0	"Green house mode"	2,0
E	Vezky #97	17,277460° E	49,285611° N	292,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
F	Vlci Doly #10	17,261152° E	49,290986° N	295,3	1,0	1,0	1,0	90,0	"Green house mode"	2,0
G	Tetětice #72	17,251024° E	49,272621° N	331,5	1,0	1,0	1,0	90,0	"Green house mode"	2,0
H	Bezmerov #220	17,330643° E	49,328639° N	200,9	1,0	1,0	1,0	90,0	"Green house mode"	2,0
I	Bojanovice #44	17,310523° E	49,310843° N	243,5	1,0	1,0	1,0	90,0	"Green house mode"	2,0
J	Bojanovice #63	17,311431° E	49,308370° N	255,0	1,0	1,0	1,0	90,0	"Green house mode"	2,0
K	Bojanovice #53	17,313484° E	49,312550° N	243,6	1,0	1,0	1,0	90,0	"Green house mode"	2,0

Calculation Results

Shadow receptor

No.	Name	Shadow, worst case		
		Shadow hours per year	Shadow days per year	Max shadow hours per day
		[h/year]	[days/year]	[h/day]
A	Kovalovice #92	7:22	38	0:16
B	Pupovky #73	0:00	0	0:00
C	Bojanovice #42	11:45	40	0:23
D	Zlobice #71	14:28	39	0:29
E	Vezky #97	22:19	46	0:37
F	Vlci Doly #10	3:02	16	0:14
G	Tetětice #72	0:00	0	0:00
H	Bezmerov #220	9:02	33	0:21

To be continued on next page...

Project:

Koncepce území zelená Haná

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CZ-588 11 Stritez



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Calculated:

20.03.2025 8:32/4.1.273

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No.	Name	Shadow, worst case		
		Shadow hours per year [h/year]	Shadow days per year [days/year]	Max shadow hours per day [h/day]
I	Bojanovice #44	11:13	37	0:24
J	Bojanovice #63	10:09	32	0:24
K	Bojanovice #53	8:57	34	0:21

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

No.	Name	Worst case [h/year]
1	WT 01	16:24
2	WT 02	46:08
3	WT 03	25:21

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.