

SHADOW - Main Result

Calculation: Slagschaduw windturbine Klein Gunnewiek_35,2m_211117

Assumptions for shadow calculations

Maximum distance for influence	2.500 m
Minimum sun height over horizon for influence	3 °
Day step for calculation	1 days
Time step for calculation	1 minutes

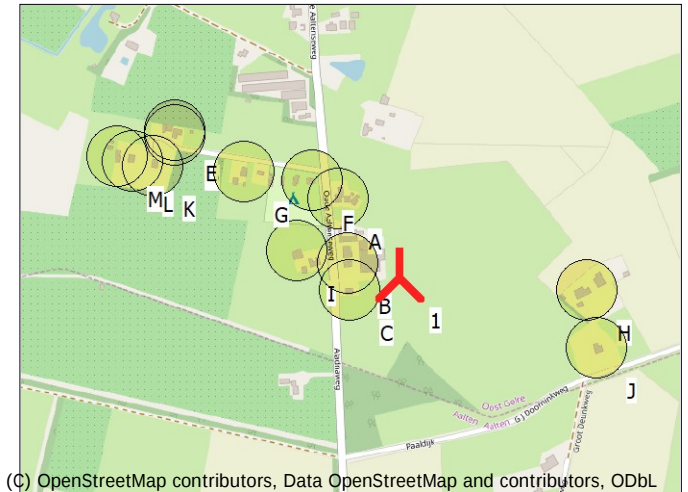
Sunshine probability S (Average daily sunshine hours) [BOCHOLT]

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1,64	3,01	3,53	5,65	7,16	6,01	6,70	6,24	4,57	3,38	2,03	1,16

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
385	684	574	504	436	731	797	1.164	1.146	770	577	539	8.307

All coordinates are in
Dutch Stereo-RD/NAP 2008



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

Scale 1:12.500

New WTG

Shadow receptor

WTGs

X (east)	Y (north)	Z [m]	Row data/Description	WTG type						
				Valid	Manufact.	Type-generator	Power, rated [kW]	Rotor diameter [m]	Hub height [m]	RPM [RPM]
1	236.094	443.527	0,0 VESTAS V20,4 100 20.4 !O! hub: 25,0 m (TOT: 35,2 ...No		VESTAS	V20,4-100	100	20,4	25,0	45,0

Shadow receptor-Input

No.	Name	X (east)	Y (north)	Z	Width	Height	Elevation a.g.l.	Slope of window	Direction mode	Eye height (ZVI) a.g.l.
				[m]	[m]	[m]	[m]	[°]		[m]
A	Oude Aaltenseweg 39, Lichtenvoorde	235.991	443.657	0,0	8,0	5,0	0,5	90,0	"Green house mode"	5,5
B	Oude Aaltenseweg 41, Lichtenvoorde	236.009	443.549	0,0	8,0	5,0	0,5	90,0	"Green house mode"	5,5
C	Oude Aaltenseweg 43, Lichtenvoorde	236.012	443.505	0,0	8,0	5,0	0,5	90,0	"Green house mode"	5,5
D	Oude Aaltenseweg 70, Lichtenvoorde	235.718	443.756	0,0	8,0	5,0	0,5	90,0	"Green house mode"	5,5
E	Oude Aaltenseweg 70a, Lichtenvoorde	235.718	443.763	0,0	8,0	5,0	0,5	90,0	"Green house mode"	5,5
F	Oude Aaltenseweg 72, Lichtenvoorde	235.948	443.685	0,0	8,0	5,0	0,5	90,0	"Green house mode"	5,5
G	Oude Aaltenseweg 68, Lichtenvoorde	235.833	443.697	0,0	8,0	5,0	0,5	90,0	"Green house mode"	5,5
H	G J Doorninkweg 8b, Lichtenvoorde	236.406	443.511	0,0	8,0	5,0	0,5	90,0	"Green house mode"	5,5
I	Oude Aaltenseweg 74, Lichtenvoorde	235.923	443.568	0,0	8,0	5,0	0,5	90,0	"Green house mode"	5,5
J	G J Doorninkweg 8, Lichtenvoorde	236.424	443.416	0,0	8,0	5,0	0,5	90,0	"Green house mode"	5,5
K	Oude Aaltenseweg 70b, Lichtenvoorde	235.682	443.705	0,0	8,0	5,0	0,5	90,0	"Green house mode"	5,5
L	Oude Aaltenseweg 70c, Lichtenvoorde	235.648	443.712	0,0	8,0	5,0	0,5	90,0	"Green house mode"	5,5
M	Oude Aaltenseweg 70d, Lichtenvoorde	235.622	443.718	0,0	8,0	5,0	0,5	90,0	"Green house mode"	5,5

Calculation Results

Shadow receptor

No.	Name	Shadow, expected values
		Shadow hours per year [h/year]
A	Oude Aaltenseweg 39, Lichtenvoorde	5:19
B	Oude Aaltenseweg 41, Lichtenvoorde	15:42
C	Oude Aaltenseweg 43, Lichtenvoorde	36:44
D	Oude Aaltenseweg 70, Lichtenvoorde	0:19
E	Oude Aaltenseweg 70a, Lichtenvoorde	0:18
F	Oude Aaltenseweg 72, Lichtenvoorde	3:39
G	Oude Aaltenseweg 68, Lichtenvoorde	1:03
H	G J Doorninkweg 8b, Lichtenvoorde	1:10
I	Oude Aaltenseweg 74, Lichtenvoorde	3:50
J	G J Doorninkweg 8, Lichtenvoorde	1:13
K	Oude Aaltenseweg 70b, Lichtenvoorde	0:17
L	Oude Aaltenseweg 70c, Lichtenvoorde	0:12
M	Oude Aaltenseweg 70d, Lichtenvoorde	0:09

Project:

Slagschaduw_KleinGunnewiek

Licensed user:

Bosch & Van Rijn

Franz-Lisztplantsoen 220

NL-3533 JG Utrecht

+31 6 51 71 04 93

Loes / loes@boschenvanrijn.nl

Calculated:

18-11-2021 17:31/3.5.552

SHADOW - Main Result

Calculation: Slagschaduw windturbine Klein Gunnewiek_35,2m_211117

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

No.	Name	Worst case	Expected
		[h/year]	[h/year]
1	VESTAS V20,4 100 20.4 !O! hub: 25,0 m (TOT: 35,2 m) (3)	331:21	64:40

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.