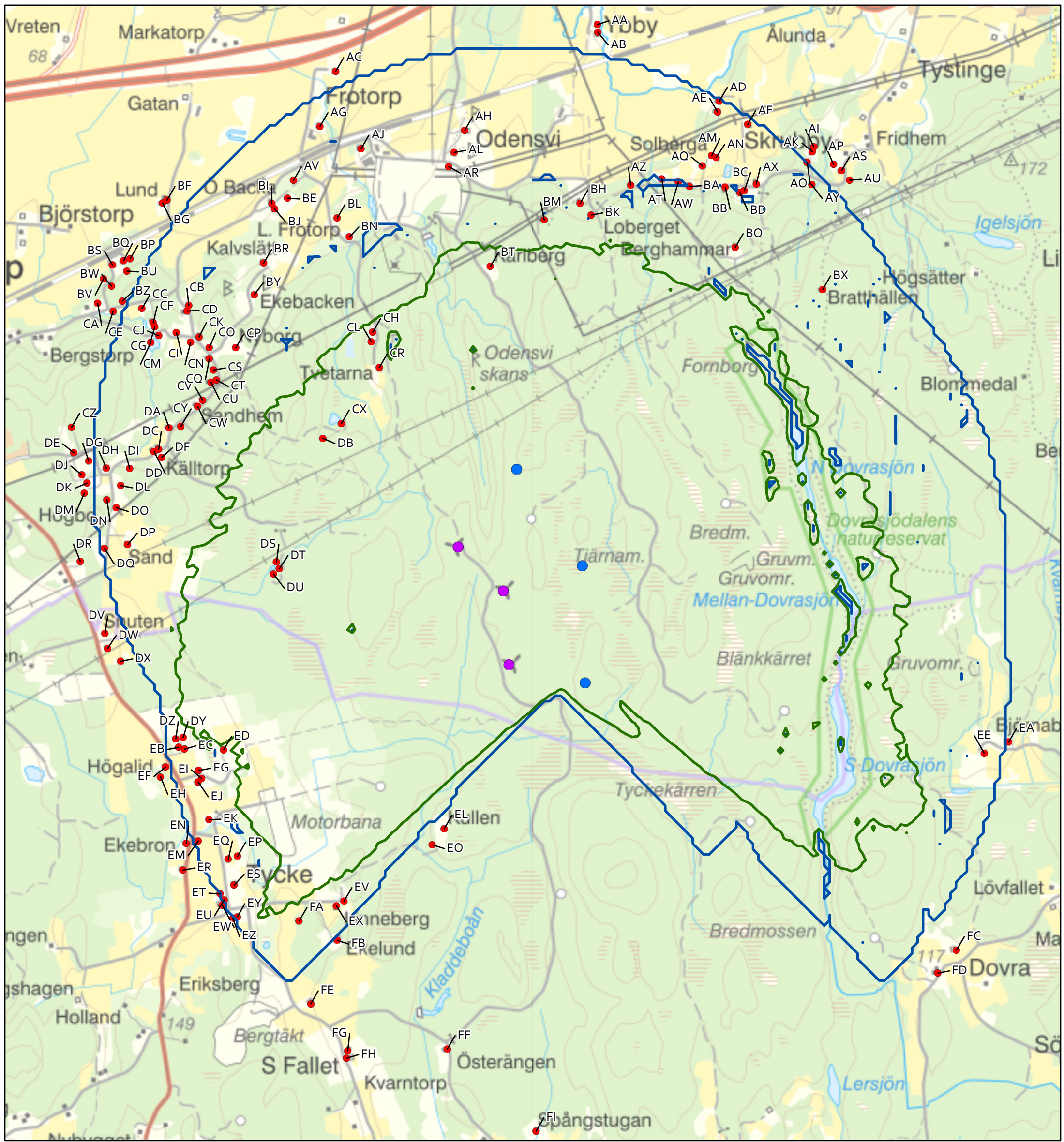




SKUGGANALYS - ODENSVI & FROTORP

Teckenförklaring

- Föreslagen layout
- Befintliga verk
- Byggnader

Sannolik skuggning

- 0 h/år
- 8 h/år



Project:

2000721_Odensvi_seaubo

Licensed user:

SWECO Energiguide AB
Gjörwellsgatan 22, Box 34004
SE-100 26 Stockholm
+46 8 695 60 00

Calculated:

2021-03-04 15:46/3.4.405

SHADOW - Main Result

Calculation: 210304 - Frotorp - Odensvi - Real Case

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
1,44	2,57	5,10	7,68	8,91	9,21	8,94	6,93	5,45	3,02	1,56	1,16

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

EmdEuropeEra5_N59.017494_E014.959991 (1)

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
415	615	679	420	447	518	696	916	1 267	1 202	562	432	8 170

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:

Height contours used: Height Contours: CONTOURLINE_210114_Odensvi_sea

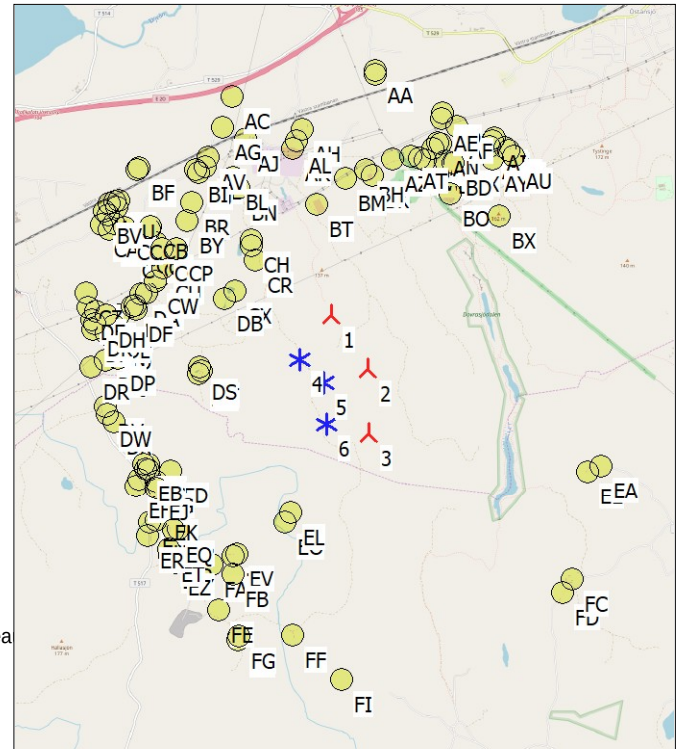
Obstacles used in calculation

Eye height for map: 1,5 m

Grid resolution: 1,0 m

All coordinates are in

Swedish UTM 33-SWREF99 (SE)



Scale 1:75 000
 * New WTG * Existing WTG * Shadow receptor

WTGs

	Easting	Northing	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]
1	495 869	6 541 988	132,5	Sweco S-210 13531 IECI ... No	No	Sweco	S-210 13531 IECI-13 531	13 531	210,0	165,0	2 301	10,0
2	496 228	6 541 460	138,9	Sweco S-210 13531 IECI ... No	No	Sweco	S-210 13531 IECI-13 531	13 531	210,0	165,0	2 301	10,0
3	496 244	6 540 819	149,7	Sweco S-210 13531 IECI ... No	No	Sweco	S-210 13531 IECI-13 531	13 531	210,0	165,0	2 301	10,0
4	495 549	6 541 564	138,8	VESTAS V90 2000 90.0 !O...Yes	Yes	VESTAS	V90-2 000	2 000	90,0	105,0	1 506	14,9
5	495 796	6 541 323	137,9	VESTAS V90 2000 90.0 !O...Yes	Yes	VESTAS	V90-2 000	2 000	90,0	105,0	1 506	14,9
6	495 827	6 540 919	143,0	VESTAS V90 2000 90.0 !O...Yes	Yes	VESTAS	V90-2 000	2 000	90,0	105,0	1 506	14,9

Shadow receptor-Input

No.	Name	Easting	Northing	Z	Width	Height	Elevation a.g.l.	Slope of window	Direction mode	Eye height (ZVI) a.g.l.
				[m]	[m]	[m]	[m]	[°]		[m]
AA	YBBY 1:1	496 310	6 544 421	82,5	5,0	5,0	1,0	0,0	"Green house mode"	1,0
AB	YBBY 2:6	496 312	6 544 380	82,5	5,0	5,0	1,0	0,0	"Green house mode"	1,0
AC	FROTORP 1:6	494 880	6 544 165	70,0	5,0	5,0	1,0	0,0	"Green house mode"	1,0
AD	VIBY-BERGA 2:2	496 977	6 544 002	93,2	5,0	5,0	1,0	0,0	"Green house mode"	1,0
AE	VIBY-BERGA 2:1	496 967	6 543 943	94,6	5,0	5,0	1,0	0,0	"Green house mode"	1,0
AF	SKRUBBY 2:28	497 132	6 543 875	100,0	5,0	5,0	1,0	0,0	"Green house mode"	1,0
AG	FROTORP 2:6	494 794	6 543 864	69,9	5,0	5,0	1,0	0,0	"Green house mode"	1,0
AH	SKRUBBY 1:3	495 585	6 543 842	93,0	5,0	5,0	1,0	0,0	"Green house mode"	1,0
AI	SKRUBBY 2:3	497 493	6 543 752	120,0	5,0	5,0	1,0	0,0	"Green house mode"	1,0
AJ	ODENSVI 2:8	495 018	6 543 742	82,5	5,0	5,0	1,0	0,0	"Green house mode"	1,0
AK	SKRUBBY 2:3	497 485	6 543 726	120,0	5,0	5,0	1,0	0,0	"Green house mode"	1,0
AL	SKRUBBY 1:3	495 527	6 543 722	96,6	5,0	5,0	1,0	0,0	"Green house mode"	1,0
AM	SKRUBBY 2:15	496 935	6 543 704	98,4	5,0	5,0	1,0	0,0	"Green house mode"	1,0
AN	SKRUBBY 2:15	496 959	6 543 694	99,3	5,0	5,0	1,0	0,0	"Green house mode"	1,0
AO	SKRUBBY 2:10	497 456	6 543 668	122,5	5,0	5,0	1,0	0,0	"Green house mode"	1,0
AP	VIBY-BERGA 1:12	497 601	6 543 657	116,8	5,0	5,0	1,0	0,0	"Green house mode"	1,0
AQ	VIBY-BERGA 1:16	496 884	6 543 648	99,0	5,0	5,0	1,0	0,0	"Green house mode"	1,0

To be continued on next page...

SHADOW - Main Result

Calculation: 210304 - Frotorp - Odensvi - Real Case

...continued from previous page

No.	Name	Easting	Northing	Z	Width	Height	Elevation a.g.l.	Slope of window	Direction mode	Eye height (ZVI) a.g.l.
				[m]	[m]	[m]	[m]	[°]		[m]
AR	ODENSVI 10:1	495 497	6 543 644	95,5	5,0	5,0	1,0	0,0	"Green house mode"	1,0
AS	VIBY-BERGA 1:4	497 645	6 543 622	118,9	5,0	5,0	1,0	0,0	"Green house mode"	1,0
AT	SKRUBBY 1:9	496 662	6 543 576	96,5	5,0	5,0	1,0	0,0	"Green house mode"	1,0
AU	VIBY-BERGA 1:7	497 688	6 543 570	120,0	5,0	5,0	1,0	0,0	"Green house mode"	1,0
AV	ÖSTRA BACKA 1:13	494 649	6 543 569	75,8	5,0	5,0	1,0	0,0	"Green house mode"	1,0
AW	SKRUBBY 1:21	496 753	6 543 558	99,6	5,0	5,0	1,0	0,0	"Green house mode"	1,0
AX	SKRUBBY 2:12	497 179	6 543 549	108,5	5,0	5,0	1,0	0,0	"Green house mode"	1,0
AY	VIBY-BERGA 1:13	497 482	6 543 545	123,3	5,0	5,0	1,0	0,0	"Green house mode"	1,0
AZ	SKRUBBY 1:3	496 493	6 543 542	96,3	5,0	5,0	1,0	0,0	"Green house mode"	1,0
BA	SKRUBBY 1:17	496 814	6 543 535	102,5	5,0	5,0	1,0	0,0	"Green house mode"	1,0
BB	SKRUBBY 1:18	497 008	6 543 531	103,8	5,0	5,0	1,0	0,0	"Green house mode"	1,0
BC	SKRUBBY 2:2	497 113	6 543 512	109,9	5,0	5,0	1,0	0,0	"Green house mode"	1,0
BD	SKRUBBY 1:10	497 088	6 543 503	110,0	5,0	5,0	1,0	0,0	"Green house mode"	1,0
BE	ÖSTRA BACKA 1:16	494 617	6 543 471	77,6	5,0	5,0	1,0	0,0	"Green house mode"	1,0
BF	MARKATORP 4:4	493 958	6 543 460	67,6	5,0	5,0	1,0	0,0	"Green house mode"	1,0
BG	MARKATORP 4:4	493 933	6 543 445	67,8	5,0	5,0	1,0	0,0	"Green house mode"	1,0
BH	YBBY 1:1	496 215	6 543 443	99,2	5,0	5,0	1,0	0,0	"Green house mode"	1,0
BI	ÖSTRA BACKA 1:15	494 531	6 543 441	78,4	5,0	5,0	1,0	0,0	"Green house mode"	1,0
BJ	ÖSTRA BACKA 1:5	494 546	6 543 413	80,0	5,0	5,0	1,0	0,0	"Green house mode"	1,0
BK	YBBY 2:4	496 277	6 543 379	104,3	5,0	5,0	1,0	0,0	"Green house mode"	1,0
BL	ODENSVI 11:1	494 888	6 543 362	82,1	5,0	5,0	1,0	0,0	"Green house mode"	1,0
BM	YBBY 1:1	496 019	6 543 353	120,0	5,0	5,0	1,0	0,0	"Green house mode"	1,0
BN	ODENSVI 2:7	494 954	6 543 259	84,5	5,0	5,0	1,0	0,0	"Green house mode"	1,0
BO	SKRUBBY 1:3	497 064	6 543 202	147,5	5,0	5,0	1,0	0,0	"Green house mode"	1,0
BP	SALSBRO 3:11	493 756	6 543 139	72,3	5,0	5,0	1,0	0,0	"Green house mode"	1,0
BQ	SALSBRO 3:11	493 720	6 543 129	72,5	5,0	5,0	1,0	0,0	"Green house mode"	1,0
BR	KALVSLÄTT 1:4	494 486	6 543 116	90,2	5,0	5,0	1,0	0,0	"Green house mode"	1,0
BS	SALSBRO 3:3	493 659	6 543 106	71,4	5,0	5,0	1,0	0,0	"Green house mode"	1,0
BT	ODENSVI 12:1	495 725	6 543 098	113,2	5,0	5,0	1,0	0,0	"Green house mode"	1,0
BU	SALSBRO 2:5	493 738	6 543 072	78,8	5,0	5,0	1,0	0,0	"Green house mode"	1,0
BV	SALSBRO 6:5	493 611	6 543 030	74,2	5,0	5,0	1,0	0,0	"Green house mode"	1,0
BW	SALSBRO 2:3	493 654	6 542 991	78,6	5,0	5,0	1,0	0,0	"Green house mode"	1,0
BX	SKRUBBY 2:17	497 541	6 542 971	159,2	5,0	5,0	1,0	0,0	"Green house mode"	1,0
BY	KALVSLÄTT 1:5	494 435	6 542 943	92,5	5,0	5,0	1,0	0,0	"Green house mode"	1,0
BZ	SALSBRO 1:11	493 713	6 542 909	89,7	5,0	5,0	1,0	0,0	"Green house mode"	1,0
CA	SALSBRO 1:7	493 578	6 542 896	80,9	5,0	5,0	1,0	0,0	"Green house mode"	1,0
CB	SALSBRO 3:12	494 077	6 542 883	89,7	5,0	5,0	1,0	0,0	"Green house mode"	1,0
CC	LUNDS SOLDATTORP 2:1	493 820	6 542 867	91,1	5,0	5,0	1,0	0,0	"Green house mode"	1,0
CD	SALSBRO 2:2	494 067	6 542 854	89,9	5,0	5,0	1,0	0,0	"Green house mode"	1,0
CE	SALSBRO 8:1	493 664	6 542 853	86,1	5,0	5,0	1,0	0,0	"Green house mode"	1,0
CF	SALSBRO 10:1	493 882	6 542 790	92,9	5,0	5,0	1,0	0,0	"Green house mode"	1,0
CG	SALSBRO 10:1	493 891	6 542 769	93,9	5,0	5,0	1,0	0,0	"Green house mode"	1,0
CH	KALVSLÄTT 1:7	495 082	6 542 738	110,5	5,0	5,0	1,0	0,0	"Green house mode"	1,0
CI	SALSBRO 5:1	494 008	6 542 736	94,7	5,0	5,0	1,0	0,0	"Green house mode"	1,0
CJ	MARKATORP 2:3	493 913	6 542 719	95,0	5,0	5,0	1,0	0,0	"Green house mode"	1,0
CK	SALSBRO 2:8	494 133	6 542 712	99,6	5,0	5,0	1,0	0,0	"Green house mode"	1,0
CL	KALVSLÄTT 1:6	495 074	6 542 687	111,4	5,0	5,0	1,0	0,0	"Green house mode"	1,0
CM	SKÄVI 3:36	493 869	6 542 682	95,0	5,0	5,0	1,0	0,0	"Green house mode"	1,0
CN	MARKATORP 4:9	494 087	6 542 682	97,8	5,0	5,0	1,0	0,0	"Green house mode"	1,0
CO	SALSBRO 2:6	494 189	6 542 653	102,5	5,0	5,0	1,0	0,0	"Green house mode"	1,0
CP	ÖSTRA BACKA 1:2	494 334	6 542 653	104,0	5,0	5,0	1,0	0,0	"Green house mode"	1,0
CQ	GATAN 1:4	494 189	6 542 593	102,5	5,0	5,0	1,0	0,0	"Green house mode"	1,0
CR	KALVSLÄTT 1:9	495 118	6 542 545	114,1	5,0	5,0	1,0	0,0	"Green house mode"	1,0
CS	MARKATORP 4:6	494 212	6 542 531	104,0	5,0	5,0	1,0	0,0	"Green house mode"	1,0
CT	MARKATORP 4:7	494 227	6 542 477	106,3	5,0	5,0	1,0	0,0	"Green house mode"	1,0
CU	MARKATORP 4:7	494 198	6 542 464	105,0	5,0	5,0	1,0	0,0	"Green house mode"	1,0
CV	ÖSTRA BACKA 1:14	494 153	6 542 365	107,7	5,0	5,0	1,0	0,0	"Green house mode"	1,0
CW	ÖSTRA BACKA 1:6	494 124	6 542 333	107,8	5,0	5,0	1,0	0,0	"Green house mode"	1,0
CX	SALSBRO 1:1	494 910	6 542 238	108,5	5,0	5,0	1,0	0,0	"Green house mode"	1,0
CY	MARKATORP 4:10	494 033	6 542 223	110,0	5,0	5,0	1,0	0,0	"Green house mode"	1,0
CZ	SKÄVI 3:43	493 436	6 542 218	120,0	5,0	5,0	1,0	0,0	"Green house mode"	1,0
DA	SALSBRO 4:5	493 969	6 542 215	110,0	5,0	5,0	1,0	0,0	"Green house mode"	1,0
DB	SALSBRO 1:1	494 810	6 542 157	115,0	5,0	5,0	1,0	0,0	"Green house mode"	1,0
DC	SALSBRO 4:15	493 912	6 542 098	112,7	5,0	5,0	1,0	0,0	"Green house mode"	1,0
DD	SALSBRO 4:17	493 886	6 542 084	113,4	5,0	5,0	1,0	0,0	"Green house mode"	1,0

To be continued on next page...

SHADOW - Main Result

Calculation: 210304 - Frotorp - Odensvi - Real Case

...continued from previous page

No.	Name	Easting	Northing	Z	Width	Height	Elevation a.g.l.	Slope of window	Direction mode	Eye height (ZVI) a.g.l.
				[m]	[m]	[m]	[m]	[°]		[m]
DE	SKÄVI 3:44	493 449	6 542 079	122,2	5,0	5,0	1,0	0,0	"Green house mode"	1,0
DF	MARKATORP 8:1	493 929	6 542 053	114,2	5,0	5,0	1,0	0,0	"Green house mode"	1,0
DG	SKÄVI 3:24	493 530	6 542 033	122,2	5,0	5,0	1,0	0,0	"Green house mode"	1,0
DH	SKÄVI 3:22	493 626	6 541 994	120,5	5,0	5,0	1,0	0,0	"Green house mode"	1,0
DI	MARKATORP 6:2	493 754	6 541 992	120,1	5,0	5,0	1,0	0,0	"Green house mode"	1,0
DJ	SKÄVI 3:17	493 492	6 541 958	125,7	5,0	5,0	1,0	0,0	"Green house mode"	1,0
DK	SKÄVI 3:26	493 521	6 541 914	126,9	5,0	5,0	1,0	0,0	"Green house mode"	1,0
DL	MARKATORP 7:1	493 705	6 541 899	125,0	5,0	5,0	1,0	0,0	"Green house mode"	1,0
DM	SKÄVI 3:25	493 505	6 541 857	127,9	5,0	5,0	1,0	0,0	"Green house mode"	1,0
DN	SKÄVI 3:33	493 629	6 541 821	125,0	5,0	5,0	1,0	0,0	"Green house mode"	1,0
DO	SAND 1:2	493 680	6 541 778	125,9	5,0	5,0	1,0	0,0	"Green house mode"	1,0
DP	SAND 1:1	493 742	6 541 577	130,4	5,0	5,0	1,0	0,0	"Green house mode"	1,0
DQ	SKÄVI 3:23	493 616	6 541 556	132,5	5,0	5,0	1,0	0,0	"Green house mode"	1,0
DR	HÖGBO 3:15	493 484	6 541 485	130,9	5,0	5,0	1,0	0,0	"Green house mode"	1,0
DS	MARKATORP 4:12	494 556	6 541 481	126,0	5,0	5,0	1,0	0,0	"Green house mode"	1,0
DT	MARKATORP 4:11	494 572	6 541 445	122,5	5,0	5,0	1,0	0,0	"Green house mode"	1,0
DU	MARKATORP 4:13	494 540	6 541 416	125,0	5,0	5,0	1,0	0,0	"Green house mode"	1,0
DV	TYCKE 1:18	493 618	6 541 090	142,5	5,0	5,0	1,0	0,0	"Green house mode"	1,0
DW	TYCKE 2:16	493 633	6 541 008	142,5	5,0	5,0	1,0	0,0	"Green house mode"	1,0
DX	TYCKE 2:18	493 704	6 540 938	140,0	5,0	5,0	1,0	0,0	"Green house mode"	1,0
DY	TYCKE 3:22	494 046	6 540 521	140,0	5,0	5,0	1,0	0,0	"Green house mode"	1,0
DZ	TYCKE 3:23	494 005	6 540 514	140,0	5,0	5,0	1,0	0,0	"Green house mode"	1,0
EA	BJÖRNABRO 1:3	498 558	6 540 496	124,8	5,0	5,0	1,0	0,0	"Green house mode"	1,0
EB	TYCKE 3:24	494 021	6 540 468	140,0	5,0	5,0	1,0	0,0	"Green house mode"	1,0
EC	TYCKE 3:16	494 053	6 540 457	140,0	5,0	5,0	1,0	0,0	"Green house mode"	1,0
ED	TYCKE 3:7	494 268	6 540 454	136,2	5,0	5,0	1,0	0,0	"Green house mode"	1,0
EE	BJÖRNABRO 1:2	498 425	6 540 434	121,8	5,0	5,0	1,0	0,0	"Green house mode"	1,0
EF	TYCKE 1:26	493 950	6 540 360	137,5	5,0	5,0	1,0	0,0	"Green house mode"	1,0
EG	TYCKE 3:25	494 131	6 540 341	134,2	5,0	5,0	1,0	0,0	"Green house mode"	1,0
EH	TYCKE 1:27	493 922	6 540 306	137,5	5,0	5,0	1,0	0,0	"Green house mode"	1,0
EI	TYCKE 3:19	494 146	6 540 298	133,0	5,0	5,0	1,0	0,0	"Green house mode"	1,0
EJ	TYCKE 3:19	494 127	6 540 279	132,7	5,0	5,0	1,0	0,0	"Green house mode"	1,0
EK	TYCKE 6:2	494 187	6 540 071	132,5	5,0	5,0	1,0	0,0	"Green house mode"	1,0
EL	TYCKE 10:1	495 472	6 540 022	125,0	5,0	5,0	1,0	0,0	"Green house mode"	1,0
EM	TYCKE 3:21	494 128	6 539 956	132,5	5,0	5,0	1,0	0,0	"Green house mode"	1,0
EN	TYCKE 7:1	494 063	6 539 942	131,6	5,0	5,0	1,0	0,0	"Green house mode"	1,0
EO	TYCKE 3:14	495 407	6 539 934	122,5	5,0	5,0	1,0	0,0	"Green house mode"	1,0
EP	TYCKE 3:18	494 343	6 539 872	135,0	5,0	5,0	1,0	0,0	"Green house mode"	1,0
EQ	TYCKE 6:3	494 292	6 539 856	135,0	5,0	5,0	1,0	0,0	"Green house mode"	1,0
ER	TYCKE 1:21	494 044	6 539 796	136,5	5,0	5,0	1,0	0,0	"Green house mode"	1,0
ES	TYCKE 1:29	494 323	6 539 714	135,5	5,0	5,0	1,0	0,0	"Green house mode"	1,0
ET	TYCKE 4:16	494 248	6 539 666	138,8	5,0	5,0	1,0	0,0	"Green house mode"	1,0
EU	TYCKE 2:28	494 270	6 539 633	139,9	5,0	5,0	1,0	0,0	"Green house mode"	1,0
EV	TYCKE 3:20	494 925	6 539 626	131,1	5,0	5,0	1,0	0,0	"Green house mode"	1,0
EW	TYCKE 2:11	494 259	6 539 603	140,0	5,0	5,0	1,0	0,0	"Green house mode"	1,0
EX	TYCKE 3:15	494 884	6 539 600	130,0	5,0	5,0	1,0	0,0	"Green house mode"	1,0
EY	TYCKE 4:7	494 342	6 539 541	135,3	5,0	5,0	1,0	0,0	"Green house mode"	1,0
EZ	TYCKE 4:7	494 317	6 539 532	135,6	5,0	5,0	1,0	0,0	"Green house mode"	1,0
FA	TYCKE 4:19	494 679	6 539 518	135,0	5,0	5,0	1,0	0,0	"Green house mode"	1,0
FB	TYCKE 4:2	494 888	6 539 412	132,5	5,0	5,0	1,0	0,0	"Green house mode"	1,0
FC	DOVRA 1:7	498 273	6 539 358	116,2	5,0	5,0	1,0	0,0	"Green house mode"	1,0
FD	DOVRA 1:5	498 171	6 539 233	117,5	5,0	5,0	1,0	0,0	"Green house mode"	1,0
FE	TYCKE 2:46	494 744	6 539 065	131,0	5,0	5,0	1,0	0,0	"Green house mode"	1,0
FF	SNÄVLUNDA-SKALLTORP 4:1	495 490	6 538 816	117,5	5,0	5,0	1,0	0,0	"Green house mode"	1,0
FG	TYCKE 2:42	494 945	6 538 807	126,0	5,0	5,0	1,0	0,0	"Green house mode"	1,0
FH	TYCKE 6:5	494 939	6 538 767	127,9	5,0	5,0	1,0	0,0	"Green house mode"	1,0
FI	TYCKE 5:2	495 974	6 538 368	112,5	5,0	5,0	1,0	0,0	"Green house mode"	1,0

SHADOW - Main Result

Calculation: 210304 - Frotorp - Odensvi - Real Case

Calculation Results

Shadow receptor

No.	Name	Shadow, worst case			Shadow, expected values
		Shadow hours	Shadow days	Max shadow	Shadow hours
		per year [h/year]	per year [days/year]	hours per day [h/day]	per year [h/year]
AA	YBBY 1:1	0:00	0	0:00	0:00
AB	YBBY 2:6	0:00	0	0:00	0:00
AC	FROTORP 1:6	0:00	0	0:00	0:00
AD	VIBY-BERGA 2:2	0:00	0	0:00	0:00
AE	VIBY-BERGA 2:1	22:46	68	0:24	2:55
AF	SKRUBBY 2:28	15:20	55	0:23	2:02
AG	FROTORP 2:6	21:56	76	0:24	2:19
AH	SKRUBBY 1:3	18:09	48	0:28	1:57
AI	SKRUBBY 2:3	0:00	0	0:00	0:00
AJ	ODENSVI 2:8	28:17	74	0:27	2:59
AK	SKRUBBY 2:3	0:00	0	0:00	0:00
AL	SKRUBBY 1:3	23:22	55	0:31	2:29
AM	SKRUBBY 2:15	22:20	80	0:26	2:56
AN	SKRUBBY 2:15	20:39	67	0:26	2:44
AO	SKRUBBY 2:10	0:00	0	0:00	0:00
AP	VIBY-BERGA 1:12	0:00	0	0:00	0:00
AQ	VIBY-BERGA 1:16	36:30	80	0:36	4:38
AR	ODENSVI 10:1	27:44	60	0:32	2:56
AS	VIBY-BERGA 1:4	0:00	0	0:00	0:00
AT	SKRUBBY 1:9	0:00	0	0:00	0:00
AU	VIBY-BERGA 1:7	0:00	0	0:00	0:00
AV	ÖSTRA BACKA 1:13	15:45	46	0:26	1:44
AW	SKRUBBY 1:21	0:00	0	0:00	0:00
AX	SKRUBBY 2:12	32:50	95	0:26	4:18
AY	VIBY-BERGA 1:13	8:58	34	0:23	1:20
AZ	SKRUBBY 1:3	34:40	74	0:32	4:21
BA	SKRUBBY 1:17	0:00	0	0:00	0:00
BB	SKRUBBY 1:18	0:00	0	0:00	0:00
BC	SKRUBBY 2:2	15:37	47	0:27	2:11
BD	SKRUBBY 1:10	0:00	0	0:00	0:00
BE	ÖSTRA BACKA 1:16	15:28	46	0:27	1:45
BF	MARKATORP 4:4	0:00	0	0:00	0:00
BG	MARKATORP 4:4	0:00	0	0:00	0:00
BH	YBBY 1:1	11:22	36	0:23	1:16
BI	ÖSTRA BACKA 1:15	14:15	42	0:26	1:39
BJ	ÖSTRA BACKA 1:5	14:29	42	0:26	1:41
BK	YBBY 2:4	41:16	76	0:37	5:02
BL	ODENSVI 11:1	21:55	56	0:31	2:28
BM	YBBY 1:1	49:21	68	1:02	5:44
BN	ODENSVI 2:7	28:03	70	0:33	3:12
BO	SKRUBBY 1:3	40:04	105	0:30	5:25
BP	SALSBRO 3:11	0:00	0	0:00	0:00
BQ	SALSBRO 3:11	0:00	0	0:00	0:00
BR	KALVSLÄTT 1:4	14:48	41	0:28	2:05
BS	SALSBRO 3:3	0:00	0	0:00	0:00
BT	ODENSVI 12:1	90:26	90	1:17	10:00
BU	SALSBRO 2:5	0:00	0	0:00	0:00
BV	SALSBRO 6:5	0:00	0	0:00	0:00
BW	SALSBRO 2:3	0:00	0	0:00	0:00
BX	SKRUBBY 2:17	19:55	70	0:26	3:10
BY	KALVSLÄTT 1:5	14:44	39	0:29	2:17
BZ	SALSBRO 1:11	0:00	0	0:00	0:00
CA	SALSBRO 1:7	0:00	0	0:00	0:00
CB	SALSBRO 3:12	10:21	33	0:25	1:47
CC	LUNDS SOLDATTORP 2:1	7:56	28	0:22	1:28
CD	SALSBRO 2:2	10:22	32	0:25	1:50
CE	SALSBRO 8:1	0:00	0	0:00	0:00
CF	SALSBRO 10:1	8:38	30	0:23	1:39
CG	SALSBRO 10:1	8:46	30	0:24	1:41
CH	KALVSLÄTT 1:7	84:44	146	0:46	10:20
CI	SALSBRO 5:1	9:55	31	0:25	1:54
CJ	MARKATORP 2:3	8:58	30	0:24	1:46
CK	SALSBRO 2:8	11:18	33	0:26	2:08

To be continued on next page...

SHADOW - Main Result

Calculation: 210304 - Frotorp - Odensvi - Real Case

...continued from previous page

No.	Name	Shadow, worst case			Shadow, expected values
		Shadow hours	Shadow days	Max shadow	Shadow hours
		per year [h/year]	per year [days/year]	hours per day [h/day]	per year [h/year]
	CL KALVSLÄTT 1:6	87:42	152	0:47	11:05
	CM SKÄVI 3:36	8:39	30	0:24	1:44
	CN MARKATORP 4:9	10:55	33	0:26	2:08
	CO SALSBRO 2:6	12:12	34	0:27	2:23
	CP ÖSTRA BACKA 1:2	22:45	62	0:30	4:01
	CQ GATAN 1:4	12:23	36	0:28	2:32
	CR KALVSLÄTT 1:9	115:30	171	0:58	15:37
	CS MARKATORP 4:6	20:39	62	0:28	3:58
	CT MARKATORP 4:7	21:08	63	0:29	4:09
	CU MARKATORP 4:7	20:39	64	0:28	4:07
	CV ÖSTRA BACKA 1:14	19:59	63	0:28	4:16
	CW ÖSTRA BACKA 1:6	19:27	61	0:28	4:15
	CX SALSBRO 1:1	76:04	152	0:49	14:34
	CY MARKATORP 4:10	11:06	33	0:27	2:44
	CZ SKÄVI 3:43	0:00	0	0:00	0:00
	DA SALSBRO 4:5	10:19	32	0:26	2:33
	DB SALSBRO 1:1	73:10	146	0:46	14:38
	DC SALSBRO 4:15	9:44	32	0:25	2:32
	DD SALSBRO 4:17	9:26	32	0:25	2:28
	DE SKÄVI 3:44	0:00	0	0:00	0:00
	DF MARKATORP 8:1	9:56	32	0:26	2:38
	DG SKÄVI 3:24	0:00	0	0:00	0:00
	DH SKÄVI 3:22	6:43	28	0:22	1:49
	DI MARKATORP 6:2	7:54	29	0:24	2:09
	DJ SKÄVI 3:17	0:00	0	0:00	0:00
	DK SKÄVI 3:26	0:00	0	0:00	0:00
	DL MARKATORP 7:1	7:15	29	0:23	2:03
	DM SKÄVI 3:25	0:00	0	0:00	0:00
	DN SKÄVI 3:33	6:46	28	0:22	1:57
	DO SAND 1:2	7:05	28	0:22	2:04
	DP SAND 1:1	7:40	30	0:23	2:18
	DQ SKÄVI 3:23	6:20	26	0:21	1:54
	DR HÖGBO 3:15	0:00	0	0:00	0:00
	DS MARKATORP 4:12	69:50	169	0:39	19:20
	DT MARKATORP 4:11	74:44	177	0:40	21:11
	DU MARKATORP 4:13	70:22	173	0:38	20:06
	DV TYCKE 1:18	0:00	0	0:00	0:00
	DW TYCKE 2:16	0:00	0	0:00	0:00
	DX TYCKE 2:18	0:00	0	0:00	0:00
	DY TYCKE 3:22	7:17	28	0:22	2:09
	DZ TYCKE 3:23	6:53	28	0:22	2:02
	EA BJÖRNABRO 1:3	0:00	0	0:00	0:00
	EB TYCKE 3:24	7:02	28	0:22	2:06
	EC TYCKE 3:16	7:19	28	0:23	2:11
	ED TYCKE 3:7	24:16	103	0:25	7:42
	EE BJÖRNABRO 1:2	8:07	30	0:23	2:14
	EF TYCKE 1:26	0:00	0	0:00	0:00
	EG TYCKE 3:25	8:27	31	0:23	2:33
	EH TYCKE 1:27	0:00	0	0:00	0:00
	EI TYCKE 3:19	8:44	31	0:23	2:38
	EJ TYCKE 3:19	8:36	32	0:23	2:36
	EK TYCKE 6:2	9:31	35	0:23	2:57
	EL TYCKE 10:1	0:00	0	0:00	0:00
	EM TYCKE 3:21	8:55	34	0:23	2:48
	EN TYCKE 7:1	0:00	0	0:00	0:00
	EO TYCKE 3:14	0:00	0	0:00	0:00
	EP TYCKE 3:18	12:37	44	0:25	4:07
	EQ TYCKE 6:3	11:35	41	0:24	3:46
	ER TYCKE 1:21	0:00	0	0:00	0:00
	ES TYCKE 1:29	13:03	47	0:23	4:23
	ET TYCKE 4:16	0:00	0	0:00	0:00
	EU TYCKE 2:28	0:00	0	0:00	0:00
	EV TYCKE 3:20	9:50	38	0:22	3:15
	EW TYCKE 2:11	0:00	0	0:00	0:00

To be continued on next page...

SHADOW - Main Result

Calculation: 210304 - Frotorp - Odensvi - Real Case

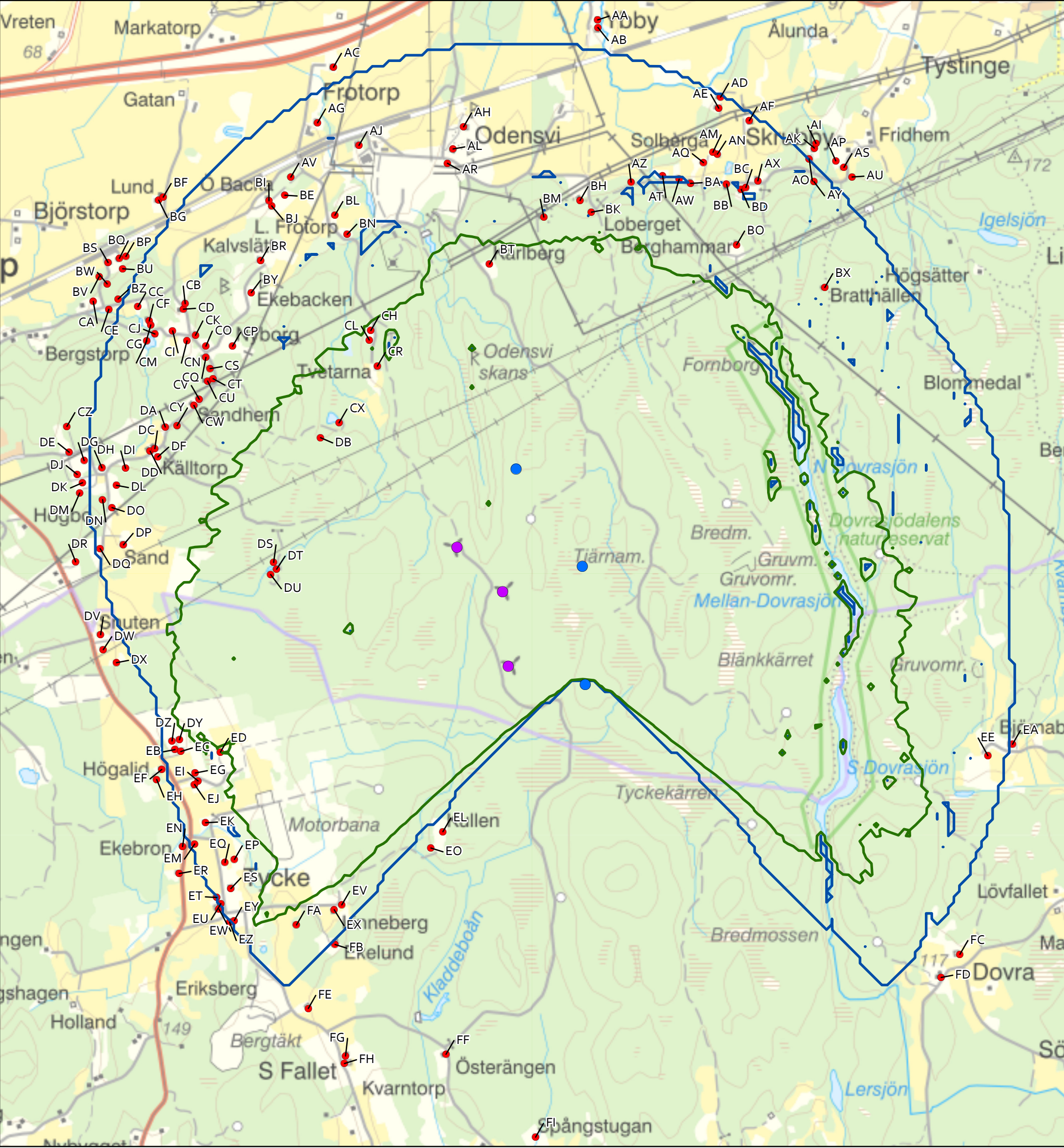
...continued from previous page

No.	Name	Shadow, worst case			Shadow, expected values
		Shadow hours	Shadow days	Max shadow	Shadow hours
		per year [h/year]	per year [days/year]	hours per day [h/day]	per year [h/year]
EX	TYCKE 3:15	10:46	40	0:23	3:34
EY	TYCKE 4:7	17:12	67	0:23	5:49
EZ	TYCKE 4:7	0:00	0	0:00	0:00
FA	TYCKE 4:19	17:50	53	0:27	5:56
FB	TYCKE 4:2	0:00	0	0:00	0:00
FC	DOVRA 1:7	0:00	0	0:00	0:00
FD	DOVRA 1:5	0:00	0	0:00	0:00
FE	TYCKE 2:46	0:00	0	0:00	0:00
FF	SNÄVLUNDA-SKALLTORP 4:1	0:00	0	0:00	0:00
FG	TYCKE 2:42	0:00	0	0:00	0:00
FH	TYCKE 6:5	0:00	0	0:00	0:00
FI	TYCKE 5:2	0:00	0	0:00	0:00

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

No.	Name	Worst case [h/year]	Expected [h/year]
1	Sweco S-210 13531 IECI 13531 210.0 !-! hub: 165,0 m (TOT: 270,0 m) (145)	581:41	96:26
2	Sweco S-210 13531 IECI 13531 210.0 !-! hub: 165,0 m (TOT: 270,0 m) (146)	214:05	32:26
3	Sweco S-210 13531 IECI 13531 210.0 !-! hub: 165,0 m (TOT: 270,0 m) (144)	164:09	39:42
4	VESTAS V90 2000 90.0 !O! hub: 105,0 m (TOT: 150,0 m) (1)	61:54	10:10
5	VESTAS V90 2000 90.0 !O! hub: 105,0 m (TOT: 150,0 m) (2)	33:49	5:06
6	VESTAS V90 2000 90.0 !O! hub: 105,0 m (TOT: 150,0 m) (3)	7:42	1:26

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.



SKUGGANALYS - ODENSVI

Teckenförklaring

- Föreslagen layout
- Befintliga verk
- Byggnader

Sannolik skuggning

- 0 h/år
- 8 h/år



SHADOW - Main Result

Calculation: 210323 - Odensvi - Real Case

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
1,44	2,57	5,10	7,68	8,91	9,21	8,94	6,93	5,45	3,02	1,56	1,16

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

EmdEuropeEra5_N59.017494_E014.959991 (1)

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
431	639	705	436	465	538	722	951	1 316	1 248	583	449	8 483

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:

Height contours used: Height Contours: CONTOURLINE_210114_Odensvi_sea

Obstacles used in calculation

Eye height for map: 1,5 m

Grid resolution: 1,0 m

All coordinates are in

Swedish UTM 33-SWREF99 (SE)

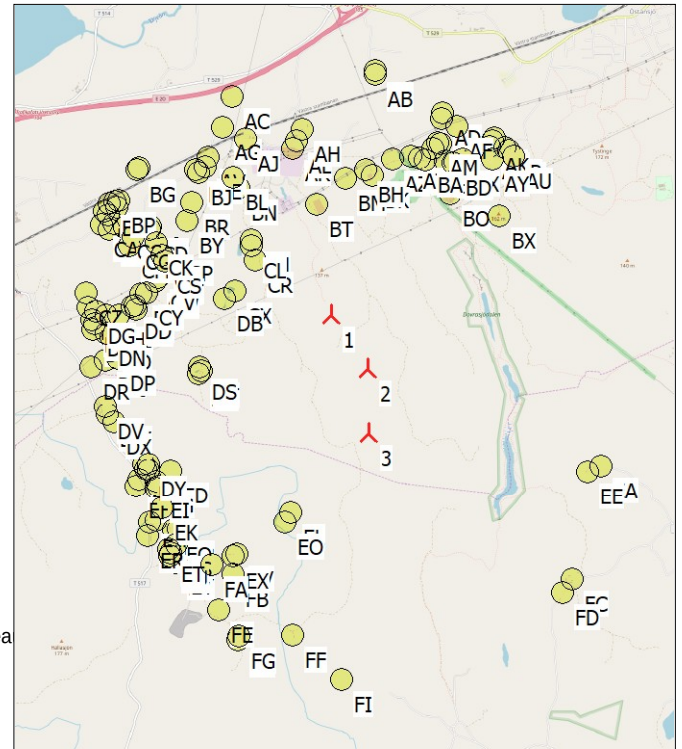
WTGs

	Easting	Northing	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]
1	495 869	6 541 988	132,5	Sweco S-210 13531 IECI ... No	No	Sweco	S-210 13531 IECI-13 531	13 531	210,0	165,0	2 301	10,0	
2	496 228	6 541 460	138,9	Sweco S-210 13531 IECI ... No	No	Sweco	S-210 13531 IECI-13 531	13 531	210,0	165,0	2 301	10,0	
3	496 244	6 540 819	149,7	Sweco S-210 13531 IECI ... No	No	Sweco	S-210 13531 IECI-13 531	13 531	210,0	165,0	2 301	10,0	

Shadow receptor-Input

No.	Name	Easting	Northing	Z	Width	Height	Elevation a.g.l.	Slope of window	Direction mode	Eye height (ZVI) a.g.l.
				[m]	[m]	[m]	[m]	[°]		[m]
AA	YBBY 1:1	496 310	6 544 421	82,5	5,0	5,0	1,0	0,0	"Green house mode"	1,0
AB	YBBY 2:6	496 312	6 544 380	82,5	5,0	5,0	1,0	0,0	"Green house mode"	1,0
AC	FROTORP 1:6	494 880	6 544 165	70,0	5,0	5,0	1,0	0,0	"Green house mode"	1,0
AD	VIBY-BERGA 2:2	496 977	6 544 002	93,2	5,0	5,0	1,0	0,0	"Green house mode"	1,0
AE	VIBY-BERGA 2:1	496 967	6 543 943	94,6	5,0	5,0	1,0	0,0	"Green house mode"	1,0
AF	SKRUBBY 2:28	497 132	6 543 875	100,0	5,0	5,0	1,0	0,0	"Green house mode"	1,0
AG	FROTORP 2:6	494 794	6 543 864	69,9	5,0	5,0	1,0	0,0	"Green house mode"	1,0
AH	SKRUBBY 1:3	495 585	6 543 842	93,0	5,0	5,0	1,0	0,0	"Green house mode"	1,0
AI	SKRUBBY 2:3	497 493	6 543 752	120,0	5,0	5,0	1,0	0,0	"Green house mode"	1,0
AJ	ODENSVI 2:8	495 018	6 543 742	82,5	5,0	5,0	1,0	0,0	"Green house mode"	1,0
AK	SKRUBBY 2:3	497 485	6 543 726	120,0	5,0	5,0	1,0	0,0	"Green house mode"	1,0
AL	SKRUBBY 1:3	495 527	6 543 722	96,6	5,0	5,0	1,0	0,0	"Green house mode"	1,0
AM	SKRUBBY 2:15	496 935	6 543 704	98,4	5,0	5,0	1,0	0,0	"Green house mode"	1,0
AN	SKRUBBY 2:15	496 959	6 543 694	99,3	5,0	5,0	1,0	0,0	"Green house mode"	1,0
AO	SKRUBBY 2:10	497 456	6 543 668	122,5	5,0	5,0	1,0	0,0	"Green house mode"	1,0
AP	VIBY-BERGA 1:12	497 601	6 543 657	116,8	5,0	5,0	1,0	0,0	"Green house mode"	1,0
AQ	VIBY-BERGA 1:16	496 884	6 543 648	99,0	5,0	5,0	1,0	0,0	"Green house mode"	1,0
AR	ODENSVI 10:1	495 497	6 543 644	95,5	5,0	5,0	1,0	0,0	"Green house mode"	1,0
AS	VIBY-BERGA 1:4	497 645	6 543 622	118,9	5,0	5,0	1,0	0,0	"Green house mode"	1,0
AT	SKRUBBY 1:9	496 662	6 543 576	96,5	5,0	5,0	1,0	0,0	"Green house mode"	1,0
AU	VIBY-BERGA 1:7	497 688	6 543 570	120,0	5,0	5,0	1,0	0,0	"Green house mode"	1,0

To be continued on next page...



Scale 1:75 000
New WTG
Shadow receptor

SHADOW - Main Result

Calculation: 210323 - Odensvi - Real Case

...continued from previous page

No.	Name	Easting	Northing	Z	Width	Height	Elevation a.g.l.	Slope of window	Direction mode	Eye height (ZVI) a.g.l.
				[m]	[m]	[m]	[m]	[°]		[m]
AV	ÖSTRA BACKA 1:13	494 649	6 543 569	75,8	5,0	5,0	1,0	0,0	"Green house mode"	1,0
AW	SKRUBBY 1:21	496 753	6 543 558	99,6	5,0	5,0	1,0	0,0	"Green house mode"	1,0
AX	SKRUBBY 2:12	497 179	6 543 549	108,5	5,0	5,0	1,0	0,0	"Green house mode"	1,0
AY	VIBY-BERGA 1:13	497 482	6 543 545	123,3	5,0	5,0	1,0	0,0	"Green house mode"	1,0
AZ	SKRUBBY 1:3	496 493	6 543 542	96,3	5,0	5,0	1,0	0,0	"Green house mode"	1,0
BA	SKRUBBY 1:17	496 814	6 543 535	102,5	5,0	5,0	1,0	0,0	"Green house mode"	1,0
BB	SKRUBBY 1:18	497 008	6 543 531	103,8	5,0	5,0	1,0	0,0	"Green house mode"	1,0
BC	SKRUBBY 2:2	497 113	6 543 512	109,9	5,0	5,0	1,0	0,0	"Green house mode"	1,0
BD	SKRUBBY 1:10	497 088	6 543 503	110,0	5,0	5,0	1,0	0,0	"Green house mode"	1,0
BE	ÖSTRA BACKA 1:16	494 617	6 543 471	77,6	5,0	5,0	1,0	0,0	"Green house mode"	1,0
BF	MARKATORP 4:4	493 958	6 543 460	67,6	5,0	5,0	1,0	0,0	"Green house mode"	1,0
BG	MARKATORP 4:4	493 933	6 543 445	67,8	5,0	5,0	1,0	0,0	"Green house mode"	1,0
BH	YBBY 1:1	496 215	6 543 443	99,2	5,0	5,0	1,0	0,0	"Green house mode"	1,0
BI	ÖSTRA BACKA 1:15	494 531	6 543 441	78,4	5,0	5,0	1,0	0,0	"Green house mode"	1,0
BJ	ÖSTRA BACKA 1:5	494 546	6 543 413	80,0	5,0	5,0	1,0	0,0	"Green house mode"	1,0
BK	YBBY 2:4	496 277	6 543 379	104,3	5,0	5,0	1,0	0,0	"Green house mode"	1,0
BL	ODENSVI 11:1	494 888	6 543 362	82,1	5,0	5,0	1,0	0,0	"Green house mode"	1,0
BM	YBBY 1:1	496 019	6 543 353	120,0	5,0	5,0	1,0	0,0	"Green house mode"	1,0
BN	ODENSVI 2:7	494 954	6 543 259	84,5	5,0	5,0	1,0	0,0	"Green house mode"	1,0
BO	SKRUBBY 1:3	497 064	6 543 202	147,5	5,0	5,0	1,0	0,0	"Green house mode"	1,0
BP	SALSBRO 3:11	493 756	6 543 139	72,3	5,0	5,0	1,0	0,0	"Green house mode"	1,0
BQ	SALSBRO 3:11	493 720	6 543 129	72,5	5,0	5,0	1,0	0,0	"Green house mode"	1,0
BR	KALVSLÄTT 1:4	494 486	6 543 116	90,2	5,0	5,0	1,0	0,0	"Green house mode"	1,0
BS	SALSBRO 3:3	493 659	6 543 106	71,4	5,0	5,0	1,0	0,0	"Green house mode"	1,0
BT	ODENSVI 12:1	495 725	6 543 098	113,2	5,0	5,0	1,0	0,0	"Green house mode"	1,0
BU	SALSBRO 2:5	493 738	6 543 072	78,8	5,0	5,0	1,0	0,0	"Green house mode"	1,0
BV	SALSBRO 6:5	493 611	6 543 030	74,2	5,0	5,0	1,0	0,0	"Green house mode"	1,0
BW	SALSBRO 2:3	493 654	6 542 991	78,6	5,0	5,0	1,0	0,0	"Green house mode"	1,0
BX	SKRUBBY 2:17	497 541	6 542 971	159,2	5,0	5,0	1,0	0,0	"Green house mode"	1,0
BY	KALVSLÄTT 1:5	494 435	6 542 943	92,5	5,0	5,0	1,0	0,0	"Green house mode"	1,0
BZ	SALSBRO 1:11	493 713	6 542 909	89,7	5,0	5,0	1,0	0,0	"Green house mode"	1,0
CA	SALSBRO 1:7	493 578	6 542 896	80,9	5,0	5,0	1,0	0,0	"Green house mode"	1,0
CB	SALSBRO 3:12	494 077	6 542 883	89,7	5,0	5,0	1,0	0,0	"Green house mode"	1,0
CC	LUNDS SOLDATTORP 2:1	493 820	6 542 867	91,1	5,0	5,0	1,0	0,0	"Green house mode"	1,0
CD	SALSBRO 2:2	494 067	6 542 854	89,9	5,0	5,0	1,0	0,0	"Green house mode"	1,0
CE	SALSBRO 8:1	493 664	6 542 853	86,1	5,0	5,0	1,0	0,0	"Green house mode"	1,0
CF	SALSBRO 10:1	493 882	6 542 790	92,9	5,0	5,0	1,0	0,0	"Green house mode"	1,0
CG	SALSBRO 10:1	493 891	6 542 769	93,9	5,0	5,0	1,0	0,0	"Green house mode"	1,0
CH	KALVSLÄTT 1:7	495 082	6 542 738	110,5	5,0	5,0	1,0	0,0	"Green house mode"	1,0
CI	SALSBRO 5:1	494 008	6 542 736	94,7	5,0	5,0	1,0	0,0	"Green house mode"	1,0
CJ	MARKATORP 2:3	493 913	6 542 719	95,0	5,0	5,0	1,0	0,0	"Green house mode"	1,0
CK	SALSBRO 2:8	494 133	6 542 712	99,6	5,0	5,0	1,0	0,0	"Green house mode"	1,0
CL	KALVSLÄTT 1:6	495 074	6 542 687	111,4	5,0	5,0	1,0	0,0	"Green house mode"	1,0
CM	SKÄVI 3:36	493 869	6 542 682	95,0	5,0	5,0	1,0	0,0	"Green house mode"	1,0
CN	MARKATORP 4:9	494 087	6 542 682	97,8	5,0	5,0	1,0	0,0	"Green house mode"	1,0
CO	SALSBRO 2:6	494 189	6 542 653	102,5	5,0	5,0	1,0	0,0	"Green house mode"	1,0
CP	ÖSTRA BACKA 1:2	494 334	6 542 653	104,0	5,0	5,0	1,0	0,0	"Green house mode"	1,0
CQ	GATAN 1:4	494 189	6 542 593	102,5	5,0	5,0	1,0	0,0	"Green house mode"	1,0
CR	KALVSLÄTT 1:9	495 118	6 542 545	114,1	5,0	5,0	1,0	0,0	"Green house mode"	1,0
CS	MARKATORP 4:6	494 212	6 542 531	104,0	5,0	5,0	1,0	0,0	"Green house mode"	1,0
CT	MARKATORP 4:7	494 227	6 542 477	106,3	5,0	5,0	1,0	0,0	"Green house mode"	1,0
CU	MARKATORP 4:7	494 198	6 542 464	105,0	5,0	5,0	1,0	0,0	"Green house mode"	1,0
CV	ÖSTRA BACKA 1:14	494 153	6 542 365	107,7	5,0	5,0	1,0	0,0	"Green house mode"	1,0
CW	ÖSTRA BACKA 1:6	494 124	6 542 333	107,8	5,0	5,0	1,0	0,0	"Green house mode"	1,0
CX	SALSBRO 1:1	494 910	6 542 238	108,5	5,0	5,0	1,0	0,0	"Green house mode"	1,0
CY	MARKATORP 4:10	494 033	6 542 223	110,0	5,0	5,0	1,0	0,0	"Green house mode"	1,0
CZ	SKÄVI 3:43	493 436	6 542 218	120,0	5,0	5,0	1,0	0,0	"Green house mode"	1,0
DA	SALSBRO 4:5	493 969	6 542 215	110,0	5,0	5,0	1,0	0,0	"Green house mode"	1,0
DB	SALSBRO 1:1	494 810	6 542 157	115,0	5,0	5,0	1,0	0,0	"Green house mode"	1,0
DC	SALSBRO 4:15	493 912	6 542 098	112,7	5,0	5,0	1,0	0,0	"Green house mode"	1,0
DD	SALSBRO 4:17	493 886	6 542 084	113,4	5,0	5,0	1,0	0,0	"Green house mode"	1,0
DE	SKÄVI 3:44	493 449	6 542 079	122,2	5,0	5,0	1,0	0,0	"Green house mode"	1,0
DF	MARKATORP 8:1	493 929	6 542 053	114,2	5,0	5,0	1,0	0,0	"Green house mode"	1,0
DG	SKÄVI 3:24	493 530	6 542 033	122,2	5,0	5,0	1,0	0,0	"Green house mode"	1,0
DH	SKÄVI 3:22	493 626	6 541 994	120,5	5,0	5,0	1,0	0,0	"Green house mode"	1,0

To be continued on next page...

SHADOW - Main Result

Calculation: 210323 - Odensvi - Real Case

...continued from previous page

No.	Name	Easting	Northing	Z	Width	Height	Elevation a.g.l.	Slope of window	Direction mode	Eye height (ZVI) a.g.l.
				[m]	[m]	[m]	[m]	[°]		[m]
DI	MARKATORP 6:2	493 754	6 541 992	120,1	5,0	5,0	1,0	0,0	"Green house mode"	1,0
DJ	SKÄVI 3:17	493 492	6 541 958	125,7	5,0	5,0	1,0	0,0	"Green house mode"	1,0
DK	SKÄVI 3:26	493 521	6 541 914	126,9	5,0	5,0	1,0	0,0	"Green house mode"	1,0
DL	MARKATORP 7:1	493 705	6 541 899	125,0	5,0	5,0	1,0	0,0	"Green house mode"	1,0
DM	SKÄVI 3:25	493 505	6 541 857	127,9	5,0	5,0	1,0	0,0	"Green house mode"	1,0
DN	SKÄVI 3:33	493 629	6 541 821	125,0	5,0	5,0	1,0	0,0	"Green house mode"	1,0
DO	SAND 1:2	493 680	6 541 778	125,9	5,0	5,0	1,0	0,0	"Green house mode"	1,0
DP	SAND 1:1	493 742	6 541 577	130,4	5,0	5,0	1,0	0,0	"Green house mode"	1,0
DQ	SKÄVI 3:23	493 616	6 541 556	132,5	5,0	5,0	1,0	0,0	"Green house mode"	1,0
DR	HÖGBO 3:15	493 484	6 541 485	130,9	5,0	5,0	1,0	0,0	"Green house mode"	1,0
DS	MARKATORP 4:12	494 556	6 541 481	126,0	5,0	5,0	1,0	0,0	"Green house mode"	1,0
DT	MARKATORP 4:11	494 572	6 541 445	122,5	5,0	5,0	1,0	0,0	"Green house mode"	1,0
DU	MARKATORP 4:13	494 540	6 541 416	125,0	5,0	5,0	1,0	0,0	"Green house mode"	1,0
DV	TYCKE 1:18	493 618	6 541 090	142,5	5,0	5,0	1,0	0,0	"Green house mode"	1,0
DW	TYCKE 2:16	493 633	6 541 008	142,5	5,0	5,0	1,0	0,0	"Green house mode"	1,0
DX	TYCKE 2:18	493 704	6 540 938	140,0	5,0	5,0	1,0	0,0	"Green house mode"	1,0
DY	TYCKE 3:22	494 046	6 540 521	140,0	5,0	5,0	1,0	0,0	"Green house mode"	1,0
DZ	TYCKE 3:23	494 005	6 540 514	140,0	5,0	5,0	1,0	0,0	"Green house mode"	1,0
EA	BJÖRNABRO 1:3	498 558	6 540 496	124,8	5,0	5,0	1,0	0,0	"Green house mode"	1,0
EB	TYCKE 3:24	494 021	6 540 468	140,0	5,0	5,0	1,0	0,0	"Green house mode"	1,0
EC	TYCKE 3:16	494 053	6 540 457	140,0	5,0	5,0	1,0	0,0	"Green house mode"	1,0
ED	TYCKE 3:7	494 268	6 540 454	136,2	5,0	5,0	1,0	0,0	"Green house mode"	1,0
EE	BJÖRNABRO 1:2	498 425	6 540 434	121,8	5,0	5,0	1,0	0,0	"Green house mode"	1,0
EF	TYCKE 1:26	493 950	6 540 360	137,5	5,0	5,0	1,0	0,0	"Green house mode"	1,0
EG	TYCKE 3:25	494 131	6 540 341	134,2	5,0	5,0	1,0	0,0	"Green house mode"	1,0
EH	TYCKE 1:27	493 922	6 540 306	137,5	5,0	5,0	1,0	0,0	"Green house mode"	1,0
EI	TYCKE 3:19	494 146	6 540 298	133,0	5,0	5,0	1,0	0,0	"Green house mode"	1,0
EJ	TYCKE 3:19	494 127	6 540 279	132,7	5,0	5,0	1,0	0,0	"Green house mode"	1,0
EK	TYCKE 6:2	494 187	6 540 071	132,5	5,0	5,0	1,0	0,0	"Green house mode"	1,0
EL	TYCKE 10:1	495 472	6 540 022	125,0	5,0	5,0	1,0	0,0	"Green house mode"	1,0
EM	TYCKE 3:21	494 128	6 539 956	132,5	5,0	5,0	1,0	0,0	"Green house mode"	1,0
EN	TYCKE 7:1	494 063	6 539 942	131,6	5,0	5,0	1,0	0,0	"Green house mode"	1,0
EO	TYCKE 3:14	495 407	6 539 934	122,5	5,0	5,0	1,0	0,0	"Green house mode"	1,0
EP	TYCKE 3:18	494 343	6 539 872	135,0	5,0	5,0	1,0	0,0	"Green house mode"	1,0
EQ	TYCKE 6:3	494 292	6 539 856	135,0	5,0	5,0	1,0	0,0	"Green house mode"	1,0
ER	TYCKE 1:21	494 044	6 539 796	136,5	5,0	5,0	1,0	0,0	"Green house mode"	1,0
ES	TYCKE 1:29	494 323	6 539 714	135,5	5,0	5,0	1,0	0,0	"Green house mode"	1,0
ET	TYCKE 4:16	494 248	6 539 666	138,8	5,0	5,0	1,0	0,0	"Green house mode"	1,0
EU	TYCKE 2:28	494 270	6 539 633	139,9	5,0	5,0	1,0	0,0	"Green house mode"	1,0
EV	TYCKE 3:20	494 925	6 539 626	131,1	5,0	5,0	1,0	0,0	"Green house mode"	1,0
EW	TYCKE 2:11	494 259	6 539 603	140,0	5,0	5,0	1,0	0,0	"Green house mode"	1,0
EX	TYCKE 3:15	494 884	6 539 600	130,0	5,0	5,0	1,0	0,0	"Green house mode"	1,0
EY	TYCKE 4:7	494 342	6 539 541	135,3	5,0	5,0	1,0	0,0	"Green house mode"	1,0
EZ	TYCKE 4:7	494 317	6 539 532	135,6	5,0	5,0	1,0	0,0	"Green house mode"	1,0
FA	TYCKE 4:19	494 679	6 539 518	135,0	5,0	5,0	1,0	0,0	"Green house mode"	1,0
FB	TYCKE 4:2	494 888	6 539 412	132,5	5,0	5,0	1,0	0,0	"Green house mode"	1,0
FC	DOVRA 1:7	498 273	6 539 358	116,2	5,0	5,0	1,0	0,0	"Green house mode"	1,0
FD	DOVRA 1:5	498 171	6 539 233	117,5	5,0	5,0	1,0	0,0	"Green house mode"	1,0
FE	TYCKE 2:46	494 744	6 539 065	131,0	5,0	5,0	1,0	0,0	"Green house mode"	1,0
FF	SNÄVLUNDA-SKALLTORP 4:1	495 490	6 538 816	117,5	5,0	5,0	1,0	0,0	"Green house mode"	1,0
FG	TYCKE 2:42	494 945	6 538 807	126,0	5,0	5,0	1,0	0,0	"Green house mode"	1,0
FH	TYCKE 6:5	494 939	6 538 767	127,9	5,0	5,0	1,0	0,0	"Green house mode"	1,0
FI	TYCKE 5:2	495 974	6 538 368	112,5	5,0	5,0	1,0	0,0	"Green house mode"	1,0

Calculation Results

Shadow receptor

		Shadow, worst case			Shadow, expected values
No.	Name	Shadow hours per year [h/year]	Shadow days per year [days/year]	Max shadow hours per day [h/day]	Shadow hours per year [h/year]
	AA YBBY 1:1	0:00	0	0:00	0:00
	AB YBBY 2:6	0:00	0	0:00	0:00
	AC FROTORP 1:6	0:00	0	0:00	0:00
	AD VIBY-BERGA 2:2	0:00	0	0:00	0:00

To be continued on next page...

SHADOW - Main Result

Calculation: 210323 - Odensvi - Real Case

...continued from previous page

No.	Name	Shadow, worst case		Shadow, expected values	
		Shadow hours per year [h/year]	Shadow days per year [days/year]	Max shadow hours per day [h/day]	Shadow hours per year [h/year]
AE	VIBY-BERGA 2:1	22:46	68	0:24	3:02
AF	SKRUBBY 2:28	15:20	55	0:23	2:06
AG	FROTORP 2:6	21:56	76	0:24	2:24
AH	SKRUBBY 1:3	18:09	48	0:28	2:02
AI	SKRUBBY 2:3	0:00	0	0:00	0:00
AJ	ODENSVI 2:8	28:17	74	0:27	3:05
AK	SKRUBBY 2:3	0:00	0	0:00	0:00
AL	SKRUBBY 1:3	23:22	55	0:31	2:35
AM	SKRUBBY 2:15	22:20	80	0:26	3:03
AN	SKRUBBY 2:15	20:39	67	0:26	2:50
AO	SKRUBBY 2:10	0:00	0	0:00	0:00
AP	VIBY-BERGA 1:12	0:00	0	0:00	0:00
AQ	VIBY-BERGA 1:16	36:30	80	0:36	4:48
AR	ODENSVI 10:1	27:44	60	0:32	3:03
AS	VIBY-BERGA 1:4	0:00	0	0:00	0:00
AT	SKRUBBY 1:9	0:00	0	0:00	0:00
AU	VIBY-BERGA 1:7	0:00	0	0:00	0:00
AV	ÖSTRA BACKA 1:13	15:45	46	0:26	1:48
AW	SKRUBBY 1:21	0:00	0	0:00	0:00
AX	SKRUBBY 2:12	32:50	95	0:26	4:28
AY	VIBY-BERGA 1:13	8:58	34	0:23	1:23
AZ	SKRUBBY 1:3	34:40	74	0:32	4:31
BA	SKRUBBY 1:17	0:00	0	0:00	0:00
BB	SKRUBBY 1:18	0:00	0	0:00	0:00
BC	SKRUBBY 2:2	15:37	47	0:27	2:16
BD	SKRUBBY 1:10	0:00	0	0:00	0:00
BE	ÖSTRA BACKA 1:16	15:28	46	0:27	1:49
BF	MARKATORP 4:4	0:00	0	0:00	0:00
BG	MARKATORP 4:4	0:00	0	0:00	0:00
BH	YBBY 1:1	11:22	36	0:23	1:19
BI	ÖSTRA BACKA 1:15	14:15	42	0:26	1:43
BJ	ÖSTRA BACKA 1:5	14:29	42	0:26	1:45
BK	YBBY 2:4	41:16	76	0:37	5:13
BL	ODENSVI 11:1	21:55	56	0:31	2:34
BM	YBBY 1:1	49:21	68	1:02	5:58
BN	ODENSVI 2:7	28:03	70	0:33	3:19
BO	SKRUBBY 1:3	40:04	105	0:30	5:37
BP	SALSBRO 3:11	0:00	0	0:00	0:00
BQ	SALSBRO 3:11	0:00	0	0:00	0:00
BR	KALVSLÄTT 1:4	14:48	41	0:28	2:10
BS	SALSBRO 3:3	0:00	0	0:00	0:00
BT	ODENSVI 12:1	90:26	90	1:17	10:23
BU	SALSBRO 2:5	0:00	0	0:00	0:00
BV	SALSBRO 6:5	0:00	0	0:00	0:00
BW	SALSBRO 2:3	0:00	0	0:00	0:00
BX	SKRUBBY 2:17	19:55	70	0:26	3:17
BY	KALVSLÄTT 1:5	14:44	39	0:29	2:22
BZ	SALSBRO 1:11	0:00	0	0:00	0:00
CA	SALSBRO 1:7	0:00	0	0:00	0:00
CB	SALSBRO 3:12	10:21	33	0:25	1:52
CC	LUNDS SOLDATTORP 2:1	7:56	28	0:22	1:31
CD	SALSBRO 2:2	10:22	32	0:25	1:54
CE	SALSBRO 8:1	0:00	0	0:00	0:00
CF	SALSBRO 10:1	8:38	30	0:23	1:43
CG	SALSBRO 10:1	8:46	30	0:24	1:45
CH	KALVSLÄTT 1:7	69:47	146	0:46	9:06
CI	SALSBRO 5:1	9:55	31	0:25	1:58
CJ	MARKATORP 2:3	8:58	30	0:24	1:50
CK	SALSBRO 2:8	11:18	33	0:26	2:13
CL	KALVSLÄTT 1:6	71:14	148	0:47	9:42
CM	SKÄVI 3:36	8:39	30	0:24	1:49
CN	MARKATORP 4:9	10:55	33	0:26	2:13
CO	SALSBRO 2:6	12:12	34	0:27	2:29
CP	ÖSTRA BACKA 1:2	22:45	62	0:30	4:10

To be continued on next page...

SHADOW - Main Result

Calculation: 210323 - Odensvi - Real Case

...continued from previous page

No.	Name	Shadow, worst case		Shadow, expected values	
		Shadow hours	Shadow days	Max shadow	Shadow hours
		per year [h/year]	per year [days/year]	hours per day [h/day]	per year [h/year]
CQ	GATAN 1:4	12:23	36	0:28	2:38
CR	KALVSLÄTT 1:9	84:18	152	0:53	12:46
CS	MARKATORP 4:6	20:39	62	0:28	4:07
CT	MARKATORP 4:7	21:08	63	0:29	4:19
CU	MARKATORP 4:7	20:39	64	0:28	4:16
CV	ÖSTRA BACKA 1:14	19:59	63	0:28	4:26
CW	ÖSTRA BACKA 1:6	19:27	61	0:28	4:25
CX	SALSBRO 1:1	71:49	148	0:49	14:31
CY	MARKATORP 4:10	11:06	33	0:27	2:51
CZ	SKÄVI 3:43	0:00	0	0:00	0:00
DA	SALSBRO 4:5	10:19	32	0:26	2:39
DB	SALSBRO 1:1	63:55	138	0:46	13:48
DC	SALSBRO 4:15	9:44	32	0:25	2:38
DD	SALSBRO 4:17	9:26	32	0:25	2:34
DE	SKÄVI 3:44	0:00	0	0:00	0:00
DF	MARKATORP 8:1	9:56	32	0:26	2:45
DG	SKÄVI 3:24	0:00	0	0:00	0:00
DH	SKÄVI 3:22	6:43	28	0:22	1:53
DI	MARKATORP 6:2	7:54	29	0:24	2:14
DJ	SKÄVI 3:17	0:00	0	0:00	0:00
DK	SKÄVI 3:26	0:00	0	0:00	0:00
DL	MARKATORP 7:1	7:15	29	0:23	2:08
DM	SKÄVI 3:25	0:00	0	0:00	0:00
DN	SKÄVI 3:33	6:46	28	0:22	2:02
DO	SAND 1:2	7:05	28	0:22	2:09
DP	SAND 1:1	7:40	30	0:23	2:24
DQ	SKÄVI 3:23	6:20	26	0:21	1:58
DR	HÖGBO 3:15	0:00	0	0:00	0:00
DS	MARKATORP 4:12	56:08	139	0:36	16:18
DT	MARKATORP 4:11	60:04	145	0:36	17:50
DU	MARKATORP 4:13	56:48	142	0:35	16:58
DV	TYCKE 1:18	0:00	0	0:00	0:00
DW	TYCKE 2:16	0:00	0	0:00	0:00
DX	TYCKE 2:18	0:00	0	0:00	0:00
DY	TYCKE 3:22	7:17	28	0:22	2:14
DZ	TYCKE 3:23	6:53	28	0:22	2:07
EA	BJÖRNABRO 1:3	0:00	0	0:00	0:00
EB	TYCKE 3:24	7:02	28	0:22	2:10
EC	TYCKE 3:16	7:19	28	0:23	2:16
ED	TYCKE 3:7	24:16	103	0:25	7:59
EE	BJÖRNABRO 1:2	8:07	30	0:23	2:19
EF	TYCKE 1:26	0:00	0	0:00	0:00
EG	TYCKE 3:25	8:27	31	0:23	2:39
EH	TYCKE 1:27	0:00	0	0:00	0:00
EI	TYCKE 3:19	8:44	31	0:23	2:44
EJ	TYCKE 3:19	8:36	32	0:23	2:42
EK	TYCKE 6:2	9:31	35	0:23	3:04
EL	TYCKE 10:1	0:00	0	0:00	0:00
EM	TYCKE 3:21	8:55	34	0:23	2:54
EN	TYCKE 7:1	0:00	0	0:00	0:00
EO	TYCKE 3:14	0:00	0	0:00	0:00
EP	TYCKE 3:18	12:37	44	0:25	4:17
EQ	TYCKE 6:3	11:35	41	0:24	3:55
ER	TYCKE 1:21	0:00	0	0:00	0:00
ES	TYCKE 1:29	13:03	47	0:23	4:34
ET	TYCKE 4:16	0:00	0	0:00	0:00
EU	TYCKE 2:28	0:00	0	0:00	0:00
EV	TYCKE 3:20	9:50	38	0:22	3:22
EW	TYCKE 2:11	0:00	0	0:00	0:00
EX	TYCKE 3:15	10:46	40	0:23	3:42
EY	TYCKE 4:7	17:12	67	0:23	6:03
EZ	TYCKE 4:7	0:00	0	0:00	0:00
FA	TYCKE 4:19	17:50	53	0:27	6:10
FB	TYCKE 4:2	0:00	0	0:00	0:00

To be continued on next page...

SHADOW - Main Result

Calculation: 210323 - Odensvi - Real Case

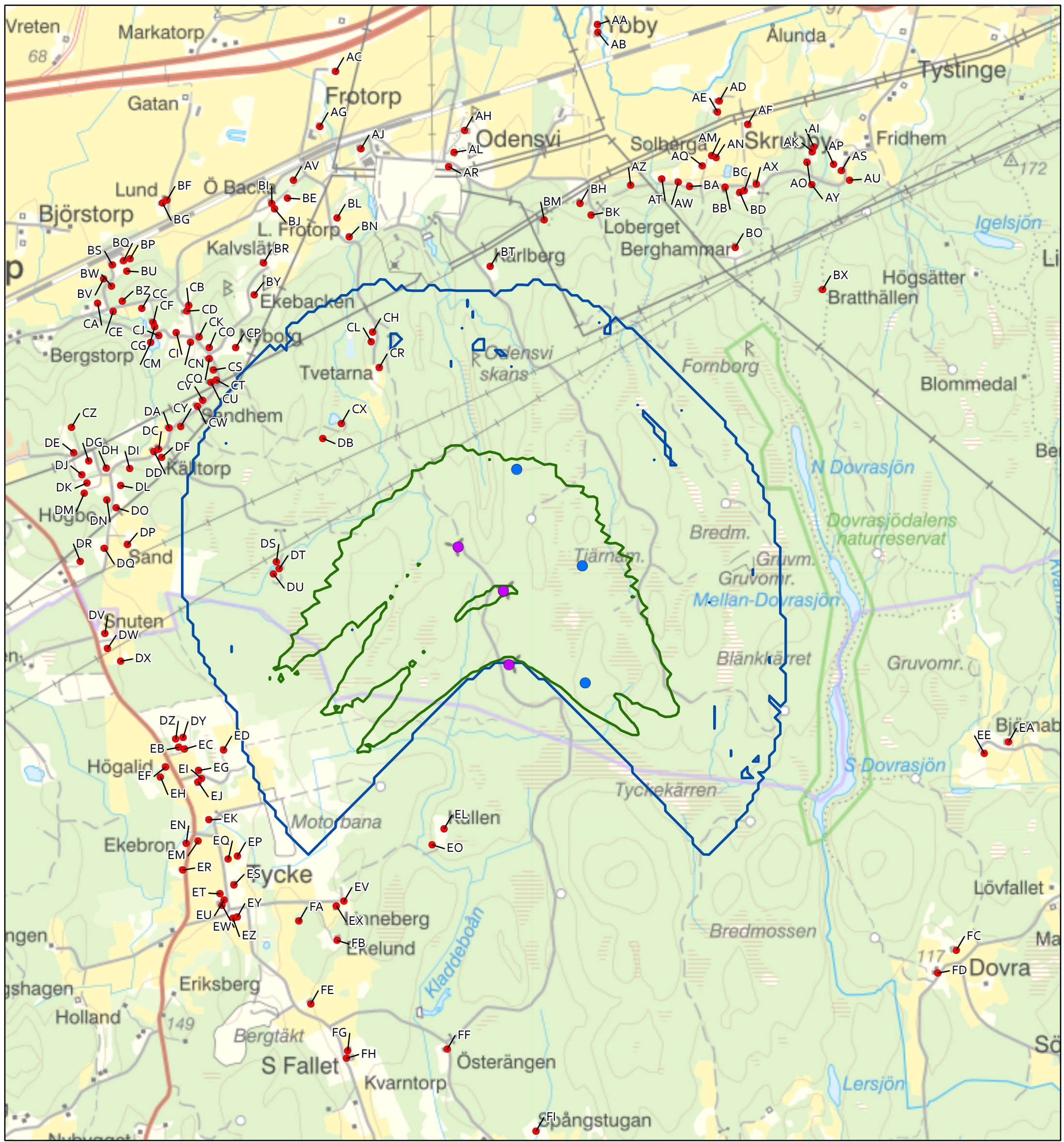
...continued from previous page

No.	Name	Shadow, worst case			Shadow, expected values
		Shadow hours	Shadow days	Max shadow	Shadow hours
		per year [h/year]	per year [days/year]	hours per day [h/day]	per year [h/year]
	FC DOVRA 1:7	0:00	0	0:00	0:00
	FD DOVRA 1:5	0:00	0	0:00	0:00
	FE TYCKE 2:46	0:00	0	0:00	0:00
	FF SNAVLUNDA-SKALLTORP 4:1	0:00	0	0:00	0:00
	FG TYCKE 2:42	0:00	0	0:00	0:00
	FH TYCKE 6:5	0:00	0	0:00	0:00
	FI TYCKE 5:2	0:00	0	0:00	0:00

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

No.	Name	Worst case [h/year]	Expected [h/year]
1	Sweco S-210 13531 IECI 13531 210.0 !-! hub: 165,0 m (TOT: 270,0 m) (145)	581:41	100:08
2	Sweco S-210 13531 IECI 13531 210.0 !-! hub: 165,0 m (TOT: 270,0 m) (146)	214:05	33:41
3	Sweco S-210 13531 IECI 13531 210.0 !-! hub: 165,0 m (TOT: 270,0 m) (144)	164:09	41:13

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.



SKUGGANALYS - ODENSVI & FROTORP

Teckenförklaring

- Föreslagen layout
- Befintliga verk
- Byggnader

Sannolik skuggning

- 0 h/år
- 8 h/år



SHADOW - Main Result

Calculation: 210323 - Frotorp - Real Case

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
1,44	2,57	5,10	7,68	8,91	9,21	8,94	6,93	5,45	3,02	1,56	1,16

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

EmdEuropeEra5_N59.017494_E014.959991 (1)

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
399	591	653	404	430	498	669	881	1 219	1 156	540	416	7 856

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:

Height contours used: Height Contours: CONTOURLINE_210114_Odensvi_sea

Obstacles used in calculation

Eye height for map: 1,5 m

Grid resolution: 1,0 m

All coordinates are in

Swedish UTM 33-SWREF99 (SE)

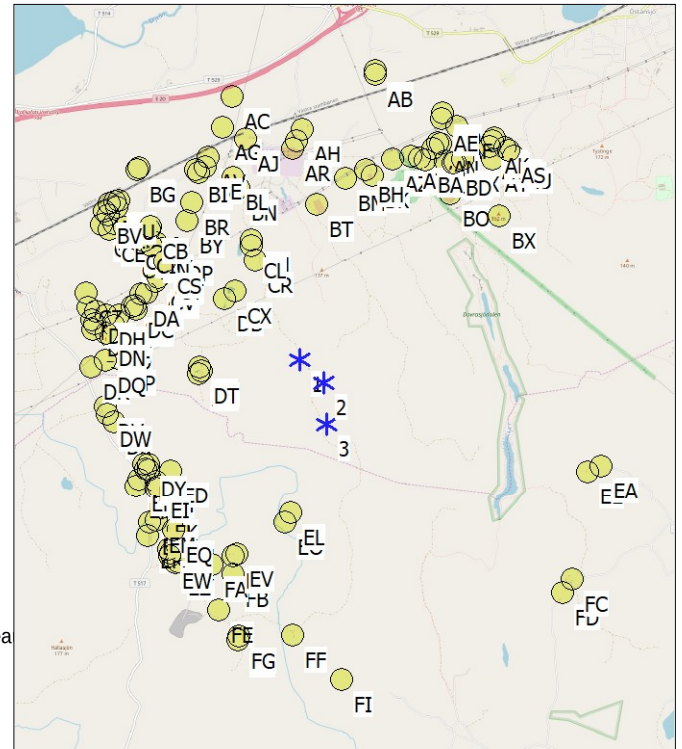
WTGs

Easting	Northing	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]									
1	495 549	6 541 564	138,8 VESTAS V90 2000 90.0 !O! hub: 10...	Yes	VESTAS	V90-2 000	2 000	90,0	105,0	1 506	14,9
2	495 796	6 541 323	137,9 VESTAS V90 2000 90.0 !O! hub: 10...	Yes	VESTAS	V90-2 000	2 000	90,0	105,0	1 506	14,9
3	495 827	6 540 919	143,0 VESTAS V90 2000 90.0 !O! hub: 10...	Yes	VESTAS	V90-2 000	2 000	90,0	105,0	1 506	14,9

Shadow receptor-Input

No.	Name	Easting	Northing	Z	Width	Height	Elevation a.g.l.	Slope of window	Direction mode	Eye height (ZVI) a.g.l.
				[m]	[m]	[m]	[m]	[°]		[m]
AA	YBBY 1:1	496 310	6 544 421	82,5	5,0	5,0	1,0	0,0	"Green house mode"	1,0
AB	YBBY 2:6	496 312	6 544 380	82,5	5,0	5,0	1,0	0,0	"Green house mode"	1,0
AC	FROTROP 1:6	494 880	6 544 165	70,0	5,0	5,0	1,0	0,0	"Green house mode"	1,0
AD	VIBY-BERGA 2:2	496 977	6 544 002	93,2	5,0	5,0	1,0	0,0	"Green house mode"	1,0
AE	VIBY-BERGA 2:1	496 967	6 543 943	94,6	5,0	5,0	1,0	0,0	"Green house mode"	1,0
AF	SKRUBBY 2:28	497 132	6 543 875	100,0	5,0	5,0	1,0	0,0	"Green house mode"	1,0
AG	FROTROP 2:6	494 794	6 543 864	69,9	5,0	5,0	1,0	0,0	"Green house mode"	1,0
AH	SKRUBBY 1:3	495 585	6 543 842	93,0	5,0	5,0	1,0	0,0	"Green house mode"	1,0
AI	SKRUBBY 2:3	497 493	6 543 752	120,0	5,0	5,0	1,0	0,0	"Green house mode"	1,0
AJ	ODENSVI 2:8	495 018	6 543 742	82,5	5,0	5,0	1,0	0,0	"Green house mode"	1,0
AK	SKRUBBY 2:3	497 485	6 543 726	120,0	5,0	5,0	1,0	0,0	"Green house mode"	1,0
AL	SKRUBBY 1:3	495 527	6 543 722	96,6	5,0	5,0	1,0	0,0	"Green house mode"	1,0
AM	SKRUBBY 2:15	496 935	6 543 704	98,4	5,0	5,0	1,0	0,0	"Green house mode"	1,0
AN	SKRUBBY 2:15	496 959	6 543 694	99,3	5,0	5,0	1,0	0,0	"Green house mode"	1,0
AO	SKRUBBY 2:10	497 456	6 543 668	122,5	5,0	5,0	1,0	0,0	"Green house mode"	1,0
AP	VIBY-BERGA 1:12	497 601	6 543 657	116,8	5,0	5,0	1,0	0,0	"Green house mode"	1,0
AQ	VIBY-BERGA 1:16	496 884	6 543 648	99,0	5,0	5,0	1,0	0,0	"Green house mode"	1,0
AR	ODENSVI 10:1	495 497	6 543 644	95,5	5,0	5,0	1,0	0,0	"Green house mode"	1,0
AS	VIBY-BERGA 1:4	497 645	6 543 622	118,9	5,0	5,0	1,0	0,0	"Green house mode"	1,0
AT	SKRUBBY 1:9	496 662	6 543 576	96,5	5,0	5,0	1,0	0,0	"Green house mode"	1,0
AU	VIBY-BERGA 1:7	497 688	6 543 570	120,0	5,0	5,0	1,0	0,0	"Green house mode"	1,0

To be continued on next page...



* Existing WTG

Scale 1:75 000

Shadow receptor

SHADOW - Main Result

Calculation: 210323 - Frotorp - Real Case

...continued from previous page

No.	Name	Easting	Northing	Z	Width	Height	Elevation a.g.l.	Slope of window	Direction mode	Eye height (ZVI) a.g.l.
				[m]	[m]	[m]	[m]	[°]		[m]
AV	ÖSTRA BACKA 1:13	494 649	6 543 569	75,8	5,0	5,0	1,0	0,0	"Green house mode"	1,0
AW	SKRUBBY 1:21	496 753	6 543 558	99,6	5,0	5,0	1,0	0,0	"Green house mode"	1,0
AX	SKRUBBY 2:12	497 179	6 543 549	108,5	5,0	5,0	1,0	0,0	"Green house mode"	1,0
AY	VIBY-BERGA 1:13	497 482	6 543 545	123,3	5,0	5,0	1,0	0,0	"Green house mode"	1,0
AZ	SKRUBBY 1:3	496 493	6 543 542	96,3	5,0	5,0	1,0	0,0	"Green house mode"	1,0
BA	SKRUBBY 1:17	496 814	6 543 535	102,5	5,0	5,0	1,0	0,0	"Green house mode"	1,0
BB	SKRUBBY 1:18	497 008	6 543 531	103,8	5,0	5,0	1,0	0,0	"Green house mode"	1,0
BC	SKRUBBY 2:2	497 113	6 543 512	109,9	5,0	5,0	1,0	0,0	"Green house mode"	1,0
BD	SKRUBBY 1:10	497 088	6 543 503	110,0	5,0	5,0	1,0	0,0	"Green house mode"	1,0
BE	ÖSTRA BACKA 1:16	494 617	6 543 471	77,6	5,0	5,0	1,0	0,0	"Green house mode"	1,0
BF	MARKATORP 4:4	493 958	6 543 460	67,6	5,0	5,0	1,0	0,0	"Green house mode"	1,0
BG	MARKATORP 4:4	493 933	6 543 445	67,8	5,0	5,0	1,0	0,0	"Green house mode"	1,0
BH	YBBY 1:1	496 215	6 543 443	99,2	5,0	5,0	1,0	0,0	"Green house mode"	1,0
BI	ÖSTRA BACKA 1:15	494 531	6 543 441	78,4	5,0	5,0	1,0	0,0	"Green house mode"	1,0
BJ	ÖSTRA BACKA 1:5	494 546	6 543 413	80,0	5,0	5,0	1,0	0,0	"Green house mode"	1,0
BK	YBBY 2:4	496 277	6 543 379	104,3	5,0	5,0	1,0	0,0	"Green house mode"	1,0
BL	ODENSVI 11:1	494 888	6 543 362	82,1	5,0	5,0	1,0	0,0	"Green house mode"	1,0
BM	YBBY 1:1	496 019	6 543 353	120,0	5,0	5,0	1,0	0,0	"Green house mode"	1,0
BN	ODENSVI 2:7	494 954	6 543 259	84,5	5,0	5,0	1,0	0,0	"Green house mode"	1,0
BO	SKRUBBY 1:3	497 064	6 543 202	147,5	5,0	5,0	1,0	0,0	"Green house mode"	1,0
BP	SALSBRO 3:11	493 756	6 543 139	72,3	5,0	5,0	1,0	0,0	"Green house mode"	1,0
BQ	SALSBRO 3:11	493 720	6 543 129	72,5	5,0	5,0	1,0	0,0	"Green house mode"	1,0
BR	KALVSLÄTT 1:4	494 486	6 543 116	90,2	5,0	5,0	1,0	0,0	"Green house mode"	1,0
BS	SALSBRO 3:3	493 659	6 543 106	71,4	5,0	5,0	1,0	0,0	"Green house mode"	1,0
BT	ODENSVI 12:1	495 725	6 543 098	113,2	5,0	5,0	1,0	0,0	"Green house mode"	1,0
BU	SALSBRO 2:5	493 738	6 543 072	78,8	5,0	5,0	1,0	0,0	"Green house mode"	1,0
BV	SALSBRO 6:5	493 611	6 543 030	74,2	5,0	5,0	1,0	0,0	"Green house mode"	1,0
BW	SALSBRO 2:3	493 654	6 542 991	78,6	5,0	5,0	1,0	0,0	"Green house mode"	1,0
BX	SKRUBBY 2:17	497 541	6 542 971	159,2	5,0	5,0	1,0	0,0	"Green house mode"	1,0
BY	KALVSLÄTT 1:5	494 435	6 542 943	92,5	5,0	5,0	1,0	0,0	"Green house mode"	1,0
BZ	SALSBRO 1:11	493 713	6 542 909	89,7	5,0	5,0	1,0	0,0	"Green house mode"	1,0
CA	SALSBRO 1:7	493 578	6 542 896	80,9	5,0	5,0	1,0	0,0	"Green house mode"	1,0
CB	SALSBRO 3:12	494 077	6 542 883	89,7	5,0	5,0	1,0	0,0	"Green house mode"	1,0
CC	LUNDS SOLDATTORP 2:1	493 820	6 542 867	91,1	5,0	5,0	1,0	0,0	"Green house mode"	1,0
CD	SALSBRO 2:2	494 067	6 542 854	89,9	5,0	5,0	1,0	0,0	"Green house mode"	1,0
CE	SALSBRO 8:1	493 664	6 542 853	86,1	5,0	5,0	1,0	0,0	"Green house mode"	1,0
CF	SALSBRO 10:1	493 882	6 542 790	92,9	5,0	5,0	1,0	0,0	"Green house mode"	1,0
CG	SALSBRO 10:1	493 891	6 542 769	93,9	5,0	5,0	1,0	0,0	"Green house mode"	1,0
CH	KALVSLÄTT 1:7	495 082	6 542 738	110,5	5,0	5,0	1,0	0,0	"Green house mode"	1,0
CI	SALSBRO 5:1	494 008	6 542 736	94,7	5,0	5,0	1,0	0,0	"Green house mode"	1,0
CJ	MARKATORP 2:3	493 913	6 542 719	95,0	5,0	5,0	1,0	0,0	"Green house mode"	1,0
CK	SALSBRO 2:8	494 133	6 542 712	99,6	5,0	5,0	1,0	0,0	"Green house mode"	1,0
CL	KALVSLÄTT 1:6	495 074	6 542 687	111,4	5,0	5,0	1,0	0,0	"Green house mode"	1,0
CM	SKÄVI 3:36	493 869	6 542 682	95,0	5,0	5,0	1,0	0,0	"Green house mode"	1,0
CN	MARKATORP 4:9	494 087	6 542 682	97,8	5,0	5,0	1,0	0,0	"Green house mode"	1,0
CO	SALSBRO 2:6	494 189	6 542 653	102,5	5,0	5,0	1,0	0,0	"Green house mode"	1,0
CP	ÖSTRA BACKA 1:2	494 334	6 542 653	104,0	5,0	5,0	1,0	0,0	"Green house mode"	1,0
CQ	GATAN 1:4	494 189	6 542 593	102,5	5,0	5,0	1,0	0,0	"Green house mode"	1,0
CR	KALVSLÄTT 1:9	495 118	6 542 545	114,1	5,0	5,0	1,0	0,0	"Green house mode"	1,0
CS	MARKATORP 4:6	494 212	6 542 531	104,0	5,0	5,0	1,0	0,0	"Green house mode"	1,0
CT	MARKATORP 4:7	494 227	6 542 477	106,3	5,0	5,0	1,0	0,0	"Green house mode"	1,0
CU	MARKATORP 4:7	494 198	6 542 464	105,0	5,0	5,0	1,0	0,0	"Green house mode"	1,0
CV	ÖSTRA BACKA 1:14	494 153	6 542 365	107,7	5,0	5,0	1,0	0,0	"Green house mode"	1,0
CW	ÖSTRA BACKA 1:6	494 124	6 542 333	107,8	5,0	5,0	1,0	0,0	"Green house mode"	1,0
CX	SALSBRO 1:1	494 910	6 542 238	108,5	5,0	5,0	1,0	0,0	"Green house mode"	1,0
CY	MARKATORP 4:10	494 033	6 542 223	110,0	5,0	5,0	1,0	0,0	"Green house mode"	1,0
CZ	SKÄVI 3:43	493 436	6 542 218	120,0	5,0	5,0	1,0	0,0	"Green house mode"	1,0
DA	SALSBRO 4:5	493 969	6 542 215	110,0	5,0	5,0	1,0	0,0	"Green house mode"	1,0
DB	SALSBRO 1:1	494 810	6 542 157	115,0	5,0	5,0	1,0	0,0	"Green house mode"	1,0
DC	SALSBRO 4:15	493 912	6 542 098	112,7	5,0	5,0	1,0	0,0	"Green house mode"	1,0
DD	SALSBRO 4:17	493 886	6 542 084	113,4	5,0	5,0	1,0	0,0	"Green house mode"	1,0
DE	SKÄVI 3:44	493 449	6 542 079	122,2	5,0	5,0	1,0	0,0	"Green house mode"	1,0
DF	MARKATORP 8:1	493 929	6 542 053	114,2	5,0	5,0	1,0	0,0	"Green house mode"	1,0
DG	SKÄVI 3:24	493 530	6 542 033	122,2	5,0	5,0	1,0	0,0	"Green house mode"	1,0
DH	SKÄVI 3:22	493 626	6 541 994	120,5	5,0	5,0	1,0	0,0	"Green house mode"	1,0

To be continued on next page...

SHADOW - Main Result

Calculation: 210323 - Frotorp - Real Case

...continued from previous page

No.	Name	Easting	Northing	Z	Width	Height	Elevation a.g.l.	Slope of window	Direction mode	Eye height (ZVI) a.g.l.
				[m]	[m]	[m]	[m]	[°]		[m]
DI	MARKATORP 6:2	493 754	6 541 992	120,1	5,0	5,0	1,0	0,0	"Green house mode"	1,0
DJ	SKÄVI 3:17	493 492	6 541 958	125,7	5,0	5,0	1,0	0,0	"Green house mode"	1,0
DK	SKÄVI 3:26	493 521	6 541 914	126,9	5,0	5,0	1,0	0,0	"Green house mode"	1,0
DL	MARKATORP 7:1	493 705	6 541 899	125,0	5,0	5,0	1,0	0,0	"Green house mode"	1,0
DM	SKÄVI 3:25	493 505	6 541 857	127,9	5,0	5,0	1,0	0,0	"Green house mode"	1,0
DN	SKÄVI 3:33	493 629	6 541 821	125,0	5,0	5,0	1,0	0,0	"Green house mode"	1,0
DO	SAND 1:2	493 680	6 541 778	125,9	5,0	5,0	1,0	0,0	"Green house mode"	1,0
DP	SAND 1:1	493 742	6 541 577	130,4	5,0	5,0	1,0	0,0	"Green house mode"	1,0
DQ	SKÄVI 3:23	493 616	6 541 556	132,5	5,0	5,0	1,0	0,0	"Green house mode"	1,0
DR	HÖGBO 3:15	493 484	6 541 485	130,9	5,0	5,0	1,0	0,0	"Green house mode"	1,0
DS	MARKATORP 4:12	494 556	6 541 481	126,0	5,0	5,0	1,0	0,0	"Green house mode"	1,0
DT	MARKATORP 4:11	494 572	6 541 445	122,5	5,0	5,0	1,0	0,0	"Green house mode"	1,0
DU	MARKATORP 4:13	494 540	6 541 416	125,0	5,0	5,0	1,0	0,0	"Green house mode"	1,0
DV	TYCKE 1:18	493 618	6 541 090	142,5	5,0	5,0	1,0	0,0	"Green house mode"	1,0
DW	TYCKE 2:16	493 633	6 541 008	142,5	5,0	5,0	1,0	0,0	"Green house mode"	1,0
DX	TYCKE 2:18	493 704	6 540 938	140,0	5,0	5,0	1,0	0,0	"Green house mode"	1,0
DY	TYCKE 3:22	494 046	6 540 521	140,0	5,0	5,0	1,0	0,0	"Green house mode"	1,0
DZ	TYCKE 3:23	494 005	6 540 514	140,0	5,0	5,0	1,0	0,0	"Green house mode"	1,0
EA	BJÖRNABRO 1:3	498 558	6 540 496	124,8	5,0	5,0	1,0	0,0	"Green house mode"	1,0
EB	TYCKE 3:24	494 021	6 540 468	140,0	5,0	5,0	1,0	0,0	"Green house mode"	1,0
EC	TYCKE 3:16	494 053	6 540 457	140,0	5,0	5,0	1,0	0,0	"Green house mode"	1,0
ED	TYCKE 3:7	494 268	6 540 454	136,2	5,0	5,0	1,0	0,0	"Green house mode"	1,0
EE	BJÖRNABRO 1:2	498 425	6 540 434	121,8	5,0	5,0	1,0	0,0	"Green house mode"	1,0
EF	TYCKE 1:26	493 950	6 540 360	137,5	5,0	5,0	1,0	0,0	"Green house mode"	1,0
EG	TYCKE 3:25	494 131	6 540 341	134,2	5,0	5,0	1,0	0,0	"Green house mode"	1,0
EH	TYCKE 1:27	493 922	6 540 306	137,5	5,0	5,0	1,0	0,0	"Green house mode"	1,0
EI	TYCKE 3:19	494 146	6 540 298	133,0	5,0	5,0	1,0	0,0	"Green house mode"	1,0
EJ	TYCKE 3:19	494 127	6 540 279	132,7	5,0	5,0	1,0	0,0	"Green house mode"	1,0
EK	TYCKE 6:2	494 187	6 540 071	132,5	5,0	5,0	1,0	0,0	"Green house mode"	1,0
EL	TYCKE 10:1	495 472	6 540 022	125,0	5,0	5,0	1,0	0,0	"Green house mode"	1,0
EM	TYCKE 3:21	494 128	6 539 956	132,5	5,0	5,0	1,0	0,0	"Green house mode"	1,0
EN	TYCKE 7:1	494 063	6 539 942	131,6	5,0	5,0	1,0	0,0	"Green house mode"	1,0
EO	TYCKE 3:14	495 407	6 539 934	122,5	5,0	5,0	1,0	0,0	"Green house mode"	1,0
EP	TYCKE 3:18	494 343	6 539 872	135,0	5,0	5,0	1,0	0,0	"Green house mode"	1,0
EQ	TYCKE 6:3	494 292	6 539 856	135,0	5,0	5,0	1,0	0,0	"Green house mode"	1,0
ER	TYCKE 1:21	494 044	6 539 796	136,5	5,0	5,0	1,0	0,0	"Green house mode"	1,0
ES	TYCKE 1:29	494 323	6 539 714	135,5	5,0	5,0	1,0	0,0	"Green house mode"	1,0
ET	TYCKE 4:16	494 248	6 539 666	138,8	5,0	5,0	1,0	0,0	"Green house mode"	1,0
EU	TYCKE 2:28	494 270	6 539 633	139,9	5,0	5,0	1,0	0,0	"Green house mode"	1,0
EV	TYCKE 3:20	494 925	6 539 626	131,1	5,0	5,0	1,0	0,0	"Green house mode"	1,0
EW	TYCKE 2:11	494 259	6 539 603	140,0	5,0	5,0	1,0	0,0	"Green house mode"	1,0
EX	TYCKE 3:15	494 884	6 539 600	130,0	5,0	5,0	1,0	0,0	"Green house mode"	1,0
EY	TYCKE 4:7	494 342	6 539 541	135,3	5,0	5,0	1,0	0,0	"Green house mode"	1,0
EZ	TYCKE 4:7	494 317	6 539 532	135,6	5,0	5,0	1,0	0,0	"Green house mode"	1,0
FA	TYCKE 4:19	494 679	6 539 518	135,0	5,0	5,0	1,0	0,0	"Green house mode"	1,0
FB	TYCKE 4:2	494 888	6 539 412	132,5	5,0	5,0	1,0	0,0	"Green house mode"	1,0
FC	DOVRA 1:7	498 273	6 539 358	116,2	5,0	5,0	1,0	0,0	"Green house mode"	1,0
FD	DOVRA 1:5	498 171	6 539 233	117,5	5,0	5,0	1,0	0,0	"Green house mode"	1,0
FE	TYCKE 2:46	494 744	6 539 065	131,0	5,0	5,0	1,0	0,0	"Green house mode"	1,0
FF	SNÄVLUNDA-SKALLTORP 4:1	495 490	6 538 816	117,5	5,0	5,0	1,0	0,0	"Green house mode"	1,0
FG	TYCKE 2:42	494 945	6 538 807	126,0	5,0	5,0	1,0	0,0	"Green house mode"	1,0
FH	TYCKE 6:5	494 939	6 538 767	127,9	5,0	5,0	1,0	0,0	"Green house mode"	1,0
FI	TYCKE 5:2	495 974	6 538 368	112,5	5,0	5,0	1,0	0,0	"Green house mode"	1,0

Calculation Results

Shadow receptor

		Shadow, worst case			Shadow, expected values
No.	Name	Shadow hours per year [h/year]	Shadow days per year [days/year]	Max shadow hours per day [h/day]	Shadow hours per year [h/year]
	AA YBBY 1:1	0:00	0	0:00	0:00
	AB YBBY 2:6	0:00	0	0:00	0:00
	AC FROTORP 1:6	0:00	0	0:00	0:00
	AD VIBY-BERGA 2:2	0:00	0	0:00	0:00

To be continued on next page...

SHADOW - Main Result

Calculation: 210323 - Frotorp - Real Case

...continued from previous page

No.	Name	Shadow, worst case			Shadow, expected values
		Shadow hours	Shadow days	Max shadow	Shadow hours
		per year [h/year]	per year [days/year]	hours per day [h/day]	per year [h/year]
AE	VIBY-BERGA 2:1	0:00	0	0:00	0:00
AF	SKRUBBY 2:28	0:00	0	0:00	0:00
AG	FROTORP 2:6	0:00	0	0:00	0:00
AH	SKRUBBY 1:3	0:00	0	0:00	0:00
AI	SKRUBBY 2:3	0:00	0	0:00	0:00
AJ	ODENSVI 2:8	0:00	0	0:00	0:00
AK	SKRUBBY 2:3	0:00	0	0:00	0:00
AL	SKRUBBY 1:3	0:00	0	0:00	0:00
AM	SKRUBBY 2:15	0:00	0	0:00	0:00
AN	SKRUBBY 2:15	0:00	0	0:00	0:00
AO	SKRUBBY 2:10	0:00	0	0:00	0:00
AP	VIBY-BERGA 1:12	0:00	0	0:00	0:00
AQ	VIBY-BERGA 1:16	0:00	0	0:00	0:00
AR	ODENSVI 10:1	0:00	0	0:00	0:00
AS	VIBY-BERGA 1:4	0:00	0	0:00	0:00
AT	SKRUBBY 1:9	0:00	0	0:00	0:00
AU	VIBY-BERGA 1:7	0:00	0	0:00	0:00
AV	ÖSTRA BACKA 1:13	0:00	0	0:00	0:00
AW	SKRUBBY 1:21	0:00	0	0:00	0:00
AX	SKRUBBY 2:12	0:00	0	0:00	0:00
AY	VIBY-BERGA 1:13	0:00	0	0:00	0:00
AZ	SKRUBBY 1:3	0:00	0	0:00	0:00
BA	SKRUBBY 1:17	0:00	0	0:00	0:00
BB	SKRUBBY 1:18	0:00	0	0:00	0:00
BC	SKRUBBY 2:2	0:00	0	0:00	0:00
BD	SKRUBBY 1:10	0:00	0	0:00	0:00
BE	ÖSTRA BACKA 1:16	0:00	0	0:00	0:00
BF	MARKATORP 4:4	0:00	0	0:00	0:00
BG	MARKATORP 4:4	0:00	0	0:00	0:00
BH	YBBY 1:1	0:00	0	0:00	0:00
BI	ÖSTRA BACKA 1:15	0:00	0	0:00	0:00
BJ	ÖSTRA BACKA 1:5	0:00	0	0:00	0:00
BK	YBBY 2:4	0:00	0	0:00	0:00
BL	ODENSVI 11:1	0:00	0	0:00	0:00
BM	YBBY 1:1	0:00	0	0:00	0:00
BN	ODENSVI 2:7	0:00	0	0:00	0:00
BO	SKRUBBY 1:3	0:00	0	0:00	0:00
BP	SALSBRO 3:11	0:00	0	0:00	0:00
BQ	SALSBRO 3:11	0:00	0	0:00	0:00
BR	KALVSLÄTT 1:4	0:00	0	0:00	0:00
BS	SALSBRO 3:3	0:00	0	0:00	0:00
BT	ODENSVI 12:1	0:00	0	0:00	0:00
BU	SALSBRO 2:5	0:00	0	0:00	0:00
BV	SALSBRO 6:5	0:00	0	0:00	0:00
BW	SALSBRO 2:3	0:00	0	0:00	0:00
BX	SKRUBBY 2:17	0:00	0	0:00	0:00
BY	KALVSLÄTT 1:5	0:00	0	0:00	0:00
BZ	SALSBRO 1:11	0:00	0	0:00	0:00
CA	SALSBRO 1:7	0:00	0	0:00	0:00
CB	SALSBRO 3:12	0:00	0	0:00	0:00
CC	LUNDS SOLDATTORP 2:1	0:00	0	0:00	0:00
CD	SALSBRO 2:2	0:00	0	0:00	0:00
CE	SALSBRO 8:1	0:00	0	0:00	0:00
CF	SALSBRO 10:1	0:00	0	0:00	0:00
CG	SALSBRO 10:1	0:00	0	0:00	0:00
CH	KALVSLÄTT 1:7	14:57	54	0:19	1:29
CI	SALSBRO 5:1	0:00	0	0:00	0:00
CJ	MARKATORP 2:3	0:00	0	0:00	0:00
CK	SALSBRO 2:8	0:00	0	0:00	0:00
CL	KALVSLÄTT 1:6	16:28	58	0:20	1:39
CM	SKÄVI 3:36	0:00	0	0:00	0:00
CN	MARKATORP 4:9	0:00	0	0:00	0:00
CO	SALSBRO 2:6	0:00	0	0:00	0:00
CP	ÖSTRA BACKA 1:2	0:00	0	0:00	0:00

To be continued on next page...

SHADOW - Main Result

Calculation: 210323 - Frotorp - Real Case

...continued from previous page

No.	Name	Shadow, worst case			Shadow, expected values
		Shadow hours	Shadow days	Max shadow	Shadow hours
		per year [h/year]	per year [days/year]	hours per day [h/day]	per year [h/year]
CQ	GATAN 1:4	0:00	0	0:00	0:00
CR	KALVSLÄTT 1:9	32:23	68	0:38	3:16
CS	MARKATORP 4:6	0:00	0	0:00	0:00
CT	MARKATORP 4:7	0:00	0	0:00	0:00
CU	MARKATORP 4:7	0:00	0	0:00	0:00
CV	ÖSTRA BACKA 1:14	0:00	0	0:00	0:00
CW	ÖSTRA BACKA 1:6	0:00	0	0:00	0:00
CX	SALSBRO 1:1	13:45	42	0:25	1:41
CY	MARKATORP 4:10	0:00	0	0:00	0:00
CZ	SKÄVI 3:43	0:00	0	0:00	0:00
DA	SALSBRO 4:5	0:00	0	0:00	0:00
DB	SALSBRO 1:1	12:41	44	0:24	1:44
DC	SALSBRO 4:15	0:00	0	0:00	0:00
DD	SALSBRO 4:17	0:00	0	0:00	0:00
DE	SKÄVI 3:44	0:00	0	0:00	0:00
DF	MARKATORP 8:1	0:00	0	0:00	0:00
DG	SKÄVI 3:24	0:00	0	0:00	0:00
DH	SKÄVI 3:22	0:00	0	0:00	0:00
DI	MARKATORP 6:2	0:00	0	0:00	0:00
DJ	SKÄVI 3:17	0:00	0	0:00	0:00
DK	SKÄVI 3:26	0:00	0	0:00	0:00
DL	MARKATORP 7:1	0:00	0	0:00	0:00
DM	SKÄVI 3:25	0:00	0	0:00	0:00
DN	SKÄVI 3:33	0:00	0	0:00	0:00
DO	SAND 1:2	0:00	0	0:00	0:00
DP	SAND 1:1	0:00	0	0:00	0:00
DQ	SKÄVI 3:23	0:00	0	0:00	0:00
DR	HÖGBO 3:15	0:00	0	0:00	0:00
DS	MARKATORP 4:12	17:12	72	0:22	4:10
DT	MARKATORP 4:11	17:54	72	0:22	4:26
DU	MARKATORP 4:13	17:09	72	0:22	4:18
DV	TYCKE 1:18	0:00	0	0:00	0:00
DW	TYCKE 2:16	0:00	0	0:00	0:00
DX	TYCKE 2:18	0:00	0	0:00	0:00
DY	TYCKE 3:22	0:00	0	0:00	0:00
DZ	TYCKE 3:23	0:00	0	0:00	0:00
EA	BJÖRNABRO 1:3	0:00	0	0:00	0:00
EB	TYCKE 3:24	0:00	0	0:00	0:00
EC	TYCKE 3:16	0:00	0	0:00	0:00
ED	TYCKE 3:7	0:00	0	0:00	0:00
EE	BJÖRNABRO 1:2	0:00	0	0:00	0:00
EF	TYCKE 1:26	0:00	0	0:00	0:00
EG	TYCKE 3:25	0:00	0	0:00	0:00
EH	TYCKE 1:27	0:00	0	0:00	0:00
EI	TYCKE 3:19	0:00	0	0:00	0:00
EJ	TYCKE 3:19	0:00	0	0:00	0:00
EK	TYCKE 6:2	0:00	0	0:00	0:00
EL	TYCKE 10:1	0:00	0	0:00	0:00
EM	TYCKE 3:21	0:00	0	0:00	0:00
EN	TYCKE 7:1	0:00	0	0:00	0:00
EO	TYCKE 3:14	0:00	0	0:00	0:00
EP	TYCKE 3:18	0:00	0	0:00	0:00
EQ	TYCKE 6:3	0:00	0	0:00	0:00
ER	TYCKE 1:21	0:00	0	0:00	0:00
ES	TYCKE 1:29	0:00	0	0:00	0:00
ET	TYCKE 4:16	0:00	0	0:00	0:00
EU	TYCKE 2:28	0:00	0	0:00	0:00
EV	TYCKE 3:20	0:00	0	0:00	0:00
EW	TYCKE 2:11	0:00	0	0:00	0:00
EX	TYCKE 3:15	0:00	0	0:00	0:00
EY	TYCKE 4:7	0:00	0	0:00	0:00
EZ	TYCKE 4:7	0:00	0	0:00	0:00
FA	TYCKE 4:19	0:00	0	0:00	0:00
FB	TYCKE 4:2	0:00	0	0:00	0:00

To be continued on next page...

SHADOW - Main Result

Calculation: 210323 - Frotorp - Real Case

...continued from previous page

No.	Name	Shadow, worst case			Shadow, expected values
		Shadow hours	Shadow days	Max shadow	Shadow hours
		per year [h/year]	per year [days/year]	hours per day [h/day]	per year [h/year]
	FC DOVRA 1:7	0:00	0	0:00	0:00
	FD DOVRA 1:5	0:00	0	0:00	0:00
	FE TYCKE 2:46	0:00	0	0:00	0:00
	FF SNAVLUNDA-SKALLTORP 4:1	0:00	0	0:00	0:00
	FG TYCKE 2:42	0:00	0	0:00	0:00
	FH TYCKE 6:5	0:00	0	0:00	0:00
	FI TYCKE 5:2	0:00	0	0:00	0:00

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

No.	Name	Worst case [h/year]	Expected [h/year]
1	VESTAS V90 2000 90.0 !O! hub: 105,0 m (TOT: 150,0 m) (1)	61:54	9:46
2	VESTAS V90 2000 90.0 !O! hub: 105,0 m (TOT: 150,0 m) (2)	33:49	4:54
3	VESTAS V90 2000 90.0 !O! hub: 105,0 m (TOT: 150,0 m) (3)	7:42	1:23

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.