

6

Skuggberäkningar

SHADOW - Main Result

Calculation: Skuggberäkning LO: Stormossen

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) [BORLANGE]

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1,76	2,86	3,88	5,64	9,16	8,08	7,55	5,65	4,80	3,10	1,88	1,43

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
748	960	581	372	415	413	600	1 002	1 137	838	688	880	8 634

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: GSD50

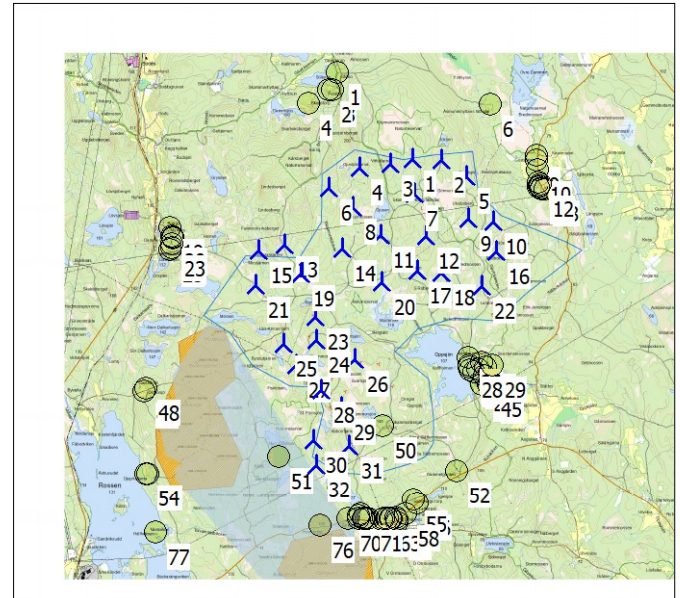
Obstacles used in calculation

Receptor grid resolution: 1,0 m

All coordinates are in

Swedish UTM 33-SWREF99 (SE)

WTGs



Scale 1:200 000

▲ New WTG

● Shadow receptor

	Easting	Northing	Z	Row data/Description	WTG type		Power, rated [kW]	Rotor diameter [m]	Hub height [m]	Shadow data	
					Valid	Manufact.				Calculation distance [m]	RPM
			[m]								[RPM]
1	586 966	6 697 292	149,3	USER F200 8500 200.0 !O! hub: 19...Yes	USER	F200-8 500	8 500	200,0	190,0	1 898	9,8
2	587 740	6 697 262	144,3	USER F200 8500 200.0 !O! hub: 19...Yes	USER	F200-8 500	8 500	200,0	190,0	1 898	9,8
3	586 387	6 697 167	149,5	USER F200 8500 200.0 !O! hub: 19...Yes	USER	F200-8 500	8 500	200,0	190,0	1 898	9,8
4	585 571	6 697 063	155,4	USER F200 8500 200.0 !O! hub: 19...Yes	USER	F200-8 500	8 500	200,0	190,0	1 898	9,8
5	588 387	6 696 837	143,4	USER F200 8500 200.0 !O! hub: 19...Yes	USER	F200-8 500	8 500	200,0	190,0	1 898	9,8
6	584 757	6 696 524	161,9	USER F200 8500 200.0 !O! hub: 19...Yes	USER	F200-8 500	8 500	200,0	190,0	1 898	9,8
7	587 032	6 696 359	136,1	USER F200 8500 200.0 !O! hub: 19...Yes	USER	F200-8 500	8 500	200,0	190,0	1 898	9,8
8	585 387	6 696 010	134,6	USER F200 8500 200.0 !O! hub: 19...Yes	USER	F200-8 500	8 500	200,0	190,0	1 898	9,8
9	588 445	6 695 717	132,8	USER F200 8500 200.0 !O! hub: 19...Yes	USER	F200-8 500	8 500	200,0	190,0	1 898	9,8
10	589 111	6 695 647	119,5	USER F200 8500 200.0 !O! hub: 19...Yes	USER	F200-8 500	8 500	200,0	190,0	1 898	9,8
11	586 140	6 695 279	125,3	USER F200 8500 200.0 !O! hub: 19...Yes	USER	F200-8 500	8 500	200,0	190,0	1 898	9,8
12	587 334	6 695 249	140,0	USER F200 8500 200.0 !O! hub: 19...Yes	USER	F200-8 500	8 500	200,0	190,0	1 898	9,8
13	583 600	6 695 022	150,5	USER F200 8500 200.0 !O! hub: 19...Yes	USER	F200-8 500	8 500	200,0	190,0	1 898	9,8
14	585 111	6 694 919	140,7	USER F200 8500 200.0 !O! hub: 19...Yes	USER	F200-8 500	8 500	200,0	190,0	1 898	9,8
15	582 911	6 694 872	142,6	USER F200 8500 200.0 !O! hub: 19...Yes	USER	F200-8 500	8 500	200,0	190,0	1 898	9,8
16	589 186	6 694 858	133,7	USER F200 8500 200.0 !O! hub: 19...Yes	USER	F200-8 500	8 500	200,0	190,0	1 898	9,8
17	587 107	6 694 343	123,8	USER F200 8500 200.0 !O! hub: 19...Yes	USER	F200-8 500	8 500	200,0	190,0	1 898	9,8
18	587 721	6 694 277	118,9	USER F200 8500 200.0 !O! hub: 19...Yes	USER	F200-8 500	8 500	200,0	190,0	1 898	9,8
19	584 013	6 694 262	137,8	USER F200 8500 200.0 !O! hub: 19...Yes	USER	F200-8 500	8 500	200,0	190,0	1 898	9,8
20	586 153	6 694 024	118,3	USER F200 8500 200.0 !O! hub: 19...Yes	USER	F200-8 500	8 500	200,0	190,0	1 898	9,8
21	582 836	6 693 961	141,7	USER F200 8500 200.0 !O! hub: 19...Yes	USER	F200-8 500	8 500	200,0	190,0	1 898	9,8
22	588 804	6 693 937	114,3	USER F200 8500 200.0 !O! hub: 19...Yes	USER	F200-8 500	8 500	200,0	190,0	1 898	9,8
23	584 410	6 693 123	149,5	USER F200 8500 200.0 !O! hub: 19...Yes	USER	F200-8 500	8 500	200,0	190,0	1 898	9,8
24	584 437	6 692 518	146,9	USER F200 8500 200.0 !O! hub: 19...Yes	USER	F200-8 500	8 500	200,0	190,0	1 898	9,8
25	583 552	6 692 405	145,6	USER F200 8500 200.0 !O! hub: 19...Yes	USER	F200-8 500	8 500	200,0	190,0	1 898	9,8
26	585 455	6 691 996	143,1	USER F200 8500 200.0 !O! hub: 19...Yes	USER	F200-8 500	8 500	200,0	190,0	1 898	9,8
27	583 891	6 691 857	147,7	USER F200 8500 200.0 !O! hub: 19...Yes	USER	F200-8 500	8 500	200,0	190,0	1 898	9,8
28	584 548	6 691 184	152,1	USER F200 8500 200.0 !O! hub: 19...Yes	USER	F200-8 500	8 500	200,0	190,0	1 898	9,8
29	585 102	6 690 725	146,4	USER F200 8500 200.0 !O! hub: 19...Yes	USER	F200-8 500	8 500	200,0	190,0	1 898	9,8
30	584 341	6 689 861	146,6	USER F200 8500 200.0 !O! hub: 19...Yes	USER	F200-8 500	8 500	200,0	190,0	1 898	9,8
31	585 304	6 689 700	143,4	USER F200 8500 200.0 !O! hub: 19...Yes	USER	F200-8 500	8 500	200,0	190,0	1 898	9,8
32	584 432	6 689 193	140,4	USER F200 8500 200.0 !O! hub: 19...Yes	USER	F200-8 500	8 500	200,0	190,0	1 898	9,8

SHADOW - Main Result

Calculation: Skuggberäkning LO: Stormossen

Shadow receptor-Input

No.	Name	Easting	Northing	Z	Width	Height	Elevation a.g.l.	Slope of window	Direction mode
				[m]	[m]	[m]	[m]	[°]	
1	STILLBO 1:2>1	584 995	6 699 573	107,2	5,0	5,0	0,0	0,0	"Green house mode"
2	SKOMMARHYTTAN 2:3>1	584 756	6 699 128	111,9	5,0	5,0	0,0	0,0	"Green house mode"
3	SKOMMARHYTTAN 2:6>1	584 865	6 699 110	106,6	5,0	5,0	0,0	0,0	"Green house mode"
4	ÖSTERHÅSTBO 11:13>2	584 235	6 698 759	115,1	5,0	5,0	0,0	0,0	"Green house mode"
5	ÅSMUNDSHYTTAN S:1>1	589 040	6 698 745	81,7	5,0	5,0	0,0	0,0	"Green house mode"
6	ÅSMUNDSHYTTAN S:1>1	589 018	6 698 731	82,1	5,0	5,0	0,0	0,0	"Green house mode"
7	AXELSBORG 1:5>1	590 250	6 697 397	77,6	5,0	5,0	0,0	0,0	"Green house mode"
9	FÄRNEBO-VÄSTANHEDE 2:1>1	590 256	6 697 262	77,0	5,0	5,0	0,0	0,0	"Green house mode"
10	FÄRNEBO-VÄSTANHEDE 2:1>1	590 269	6 697 001	80,5	5,0	5,0	0,0	0,0	"Green house mode"
11	FÄRNEBO-VÄSTANHEDE 2:1>1	590 293	6 696 681	83,1	5,0	5,0	0,0	0,0	"Green house mode"
12	FÄRNEBO-VÄSTANHEDE 2:1>1	590 340	6 696 634	84,5	5,0	5,0	0,0	0,0	"Green house mode"
13	FÄRNEBO-VÄSTANHEDE 1:4>1	590 341	6 696 582	87,8	5,0	5,0	0,0	0,0	"Green house mode"
14	FÄRNEBO-VÄSTANHEDE 1:4>1	590 334	6 696 564	88,3	5,0	5,0	0,0	0,0	"Green house mode"
15	BACKAN 1:10>2	590 291	6 696 561	87,2	5,0	5,0	0,0	0,0	"Green house mode"
16	FÄRNEBO-VÄSTANHEDE 1:3>4	590 364	6 696 516	88,0	5,0	5,0	0,0	0,0	"Green house mode"
17	FÄRNEBO-VÄSTANHEDE 1:3>4	590 383	6 696 511	87,2	5,0	5,0	0,0	0,0	"Green house mode"
18	FÄRNEBO-VÄSTANHEDE 1:5>1	590 472	6 696 501	82,1	5,0	5,0	0,0	0,0	"Green house mode"
19	BAGGHYTTAN 11:6>1	580 554	6 695 487	139,6	5,0	5,0	0,0	0,0	"Green house mode"
20	BAGGHYTTAN 11:44>1	580 618	6 695 261	136,4	5,0	5,0	0,0	0,0	"Green house mode"
21	BAGGHYTTAN 11:45>1	580 629	6 695 228	135,2	5,0	5,0	0,0	0,0	"Green house mode"
22	BAGGHYTTAN 11:46>1	580 648	6 695 196	135,5	5,0	5,0	0,0	0,0	"Green house mode"
23	BAGGHYTTAN 7:26>1	580 625	6 695 043	134,9	5,0	5,0	0,0	0,0	"Green house mode"
24	BAGGHYTTAN 7:30>1	580 611	6 694 951	134,6	5,0	5,0	0,0	0,0	"Green house mode"
25	BAGGHYTTAN 7:31>1	580 567	6 694 909	134,1	5,0	5,0	0,0	0,0	"Green house mode"
26	STÅLBO 1:2>1	588 432	6 692 040	107,7	5,0	5,0	0,0	0,0	"Green house mode"
27	STÅLBO 1:19>1	588 810	6 691 923	98,5	5,0	5,0	0,0	0,0	"Green house mode"
28	STÅLBO 1:2>1	588 465	6 691 849	108,2	5,0	5,0	0,0	0,0	"Green house mode"
29	STÅLBO 1:18>1	589 091	6 691 835	93,6	5,0	5,0	0,0	0,0	"Green house mode"
30	STÅLBO 2:16>1	588 461	6 691 803	108,2	5,0	5,0	0,0	0,0	"Green house mode"
31	STÅLBO 1:28>1	588 899	6 691 796	95,4	5,0	5,0	0,0	0,0	"Green house mode"
41	STÅLBO 1:15>1	588 697	6 691 749	101,6	5,0	5,0	0,0	0,0	"Green house mode"
42	STÅLBO 2:4>7	588 489	6 691 714	108,1	5,0	5,0	0,0	0,0	"Green house mode"
43	SKAMMORA 6:4>1	588 605	6 691 675	105,3	5,0	5,0	0,0	0,0	"Green house mode"
44	SKAMMORA 6:3>1	588 866	6 691 562	103,4	5,0	5,0	0,0	0,0	"Green house mode"
45	SKAMMORA 6:5>1	588 974	6 691 348	101,8	5,0	5,0	0,0	0,0	"Green house mode"
46	SKAMMORA 6:6>1	588 790	6 691 348	103,7	5,0	5,0	0,0	0,0	"Green house mode"
47	SKAMMORA 6:5>1	588 992	6 691 279	98,9	5,0	5,0	0,0	0,0	"Green house mode"
48	ÖSTANSJÖ 1:3>1	579 934	6 691 247	145,9	5,0	5,0	0,0	0,0	"Green house mode"
49	ÖSTANSJÖ 1:2>1	579 882	6 691 173	144,3	5,0	5,0	0,0	0,0	"Green house mode"
50	AXELSBORG 1:8>2	586 189	6 690 235	142,4	5,0	5,0	0,0	0,0	"Green house mode"
51	ÖVRE FORNBY 1:2>1	583 443	6 689 420	144,0	5,0	5,0	0,0	0,0	"Green house mode"
52	SKAMMORA 6:9>1	588 139	6 689 051	111,0	5,0	5,0	0,0	0,0	"Green house mode"
53	ÖVRE FORNBY 1:5>1	579 976	6 688 976	133,3	5,0	5,0	0,0	0,0	"Green house mode"
54	ÖVRE FORNBY 1:5>1	579 933	6 688 969	131,3	5,0	5,0	0,0	0,0	"Green house mode"
55	AXELSBORG 1:9>1	586 988	6 688 300	114,3	5,0	5,0	0,0	0,0	"Green house mode"
56	AXELSBORG 1:11>1	587 094	6 688 175	105,8	5,0	5,0	0,0	0,0	"Green house mode"
57	HORNTORPSSKOGEN 1:10>1	585 605	6 687 911	133,3	5,0	5,0	0,0	0,0	"Green house mode"
58	AXELSBORG 1:6>1	586 805	6 687 904	111,4	5,0	5,0	0,0	0,0	"Green house mode"
59	HORNTORPSSKOGEN 1:9>1	585 552	6 687 866	131,8	5,0	5,0	0,0	0,0	"Green house mode"
60	AXELSBORG 1:17>1	586 531	6 687 803	116,9	5,0	5,0	0,0	0,0	"Green house mode"
61	HORNTORPSSKOGEN 1:2>1	585 664	6 687 780	127,8	5,0	5,0	0,0	0,0	"Green house mode"
62	HORNTORPSSKOGEN 1:4>1	585 535	6 687 779	127,9	5,0	5,0	0,0	0,0	"Green house mode"
63	AXELSBORG 1:16>1	586 314	6 687 778	121,4	5,0	5,0	0,0	0,0	"Green house mode"
64	AXELSBORG 1:12>1	586 383	6 687 778	117,7	5,0	5,0	0,0	0,0	"Green house mode"
65	AXELSBORG 1:13>1	586 406	6 687 778	117,3	5,0	5,0	0,0	0,0	"Green house mode"
66	HORNTORPSSKOGEN 1:5>1	585 710	6 687 777	127,6	5,0	5,0	0,0	0,0	"Green house mode"
67	AXELSBORG 1:16>1	586 307	6 687 777	121,8	5,0	5,0	0,0	0,0	"Green house mode"
68	AXELSBORG 1:13>1	586 406	6 687 775	117,2	5,0	5,0	0,0	0,0	"Green house mode"
69	HORNTORPSSKOGEN 1:6>1	585 754	6 687 774	126,9	5,0	5,0	0,0	0,0	"Green house mode"
70	HORNTORPSSKOGEN 1:13>1	585 258	6 687 772	128,0	5,0	5,0	0,0	0,0	"Green house mode"
71	HORNTORPSSKOGEN 1:7>1	585 797	6 687 772	125,9	5,0	5,0	0,0	0,0	"Green house mode"
72	HORNTORPSSKOGEN 1:3>1	586 216	6 687 771	126,5	5,0	5,0	0,0	0,0	"Green house mode"
73	HORNTORPSSKOGEN 1:8>1	586 164	6 687 757	127,0	5,0	5,0	0,0	0,0	"Green house mode"
74	AXELSBORG 1:10>1	586 553	6 687 742	114,2	5,0	5,0	0,0	0,0	"Green house mode"

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SHADOW - Main Result

Calculation: Skuggberäkning LO: Stormossen

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No.	Name	Easting	Northing	Z	Width	Height	Elevation a.g.l.	Slope of window	Direction mode
				[m]	[m]	[m]	[m]	[°]	
75	AXELSBORG 1:7>1	586 568	6 687 678	113,5	5,0	5,0	0,0	0,0	"Green house mode"
76	HORNTORPSSKOGEN 1:11>1	584 540	6 687 596	130,8	5,0	5,0	0,0	0,0	"Green house mode"
77	ÖVRE FORNBY 1:4>1	580 180	6 687 431	130,5	5,0	5,0	0,0	0,0	"Green house mode"

Calculation Results

Shadow receptor

No.	Name	Shadow, expected values Shadow hours per year [h/year]
1	STILLBO 1:2>1	0:00
2	SKOMMARHYTTAN 2:3>1	0:00
3	SKOMMARHYTTAN 2:6>1	0:00
4	ÖSTERHÄSTBO 11:13>2	0:00
5	ÅSMUNDSHYTTAN S:1>1	0:00
6	ÅSMUNDSHYTTAN S:1>1	0:00
7	AXELSBORG 1:5>1	0:00
9	FÄRNEBO-VÄSTANHEDE 2:1>1	0:00
10	FÄRNEBO-VÄSTANHEDE 2:1>1	5:02
11	FÄRNEBO-VÄSTANHEDE 2:1>1	3:16
12	FÄRNEBO-VÄSTANHEDE 2:1>1	3:11
13	FÄRNEBO-VÄSTANHEDE 1:4>1	3:15
14	FÄRNEBO-VÄSTANHEDE 1:4>1	3:21
15	BACKAN 1:10>2	3:29
16	FÄRNEBO-VÄSTANHEDE 1:3>4	3:18
17	FÄRNEBO-VÄSTANHEDE 1:3>4	3:14
18	FÄRNEBO-VÄSTANHEDE 1:5>1	2:55
19	BAGGHYTTAN 11:6>1	0:00
20	BAGGHYTTAN 11:44>1	0:00
21	BAGGHYTTAN 11:45>1	0:00
22	BAGGHYTTAN 11:46>1	0:00
23	BAGGHYTTAN 7:26>1	0:00
24	BAGGHYTTAN 7:30>1	0:00
25	BAGGHYTTAN 7:31>1	0:00
26	STÅLBO 1:2>1	0:00
27	STÅLBO 1:19>1	0:00
28	STÅLBO 1:2>1	0:00
29	STÅLBO 1:18>1	0:00
30	STÅLBO 2:16>1	0:00
31	STÅLBO 1:28>1	0:00
41	STÅLBO 1:15>1	0:00
42	STÅLBO 2:4>7	0:00
43	SKAMMORA 6:4>1	0:00
44	SKAMMORA 6:3>1	0:00
45	SKAMMORA 6:5>1	0:00
46	SKAMMORA 6:6>1	0:00
47	SKAMMORA 6:5>1	0:00
48	ÖSTANSJÖ 1:3>1	0:00
49	ÖSTANSJÖ 1:2>1	0:00
50	AXELSBORG 1:8>2	29:54
51	ÖVRE FORNBY 1:2>1	29:29
52	SKAMMORA 6:9>1	0:00
53	ÖVRE FORNBY 1:5>1	0:00
54	ÖVRE FORNBY 1:5>1	0:00
55	AXELSBORG 1:9>1	0:00
56	AXELSBORG 1:11>1	0:00
57	HORNTORPSSKOGEN 1:10>1	0:00
58	AXELSBORG 1:6>1	0:00
59	HORNTORPSSKOGEN 1:9>1	0:00
60	AXELSBORG 1:17>1	0:00
61	HORNTORPSSKOGEN 1:2>1	0:00
62	HORNTORPSSKOGEN 1:4>1	0:00
63	AXELSBORG 1:16>1	0:00

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SHADOW - Main Result

Calculation: Skuggberäkning LO: Stormossen

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No.	Name	Shadow, expected values
		Shadow hours per year [h/year]
64	AXELSBERG 1:12>1	0:00
65	AXELSBERG 1:13>1	0:00
66	HORNTORPSSKOGEN 1:5>1	0:00
67	AXELSBERG 1:16>1	0:00
68	AXELSBERG 1:13>1	0:00
69	HORNTORPSSKOGEN 1:6>1	0:00
70	HORNTORPSSKOGEN 1:13>1	0:00
71	HORNTORPSSKOGEN 1:7>1	0:00
72	HORNTORPSSKOGEN 1:3>1	0:00
73	HORNTORPSSKOGEN 1:8>1	0:00
74	AXELSBERG 1:10>1	0:00
75	AXELSBERG 1:7>1	0:00
76	HORNTORPSSKOGEN 1:11>1	0:00
77	ÖVRE FORNBY 1:4>1	0:00

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

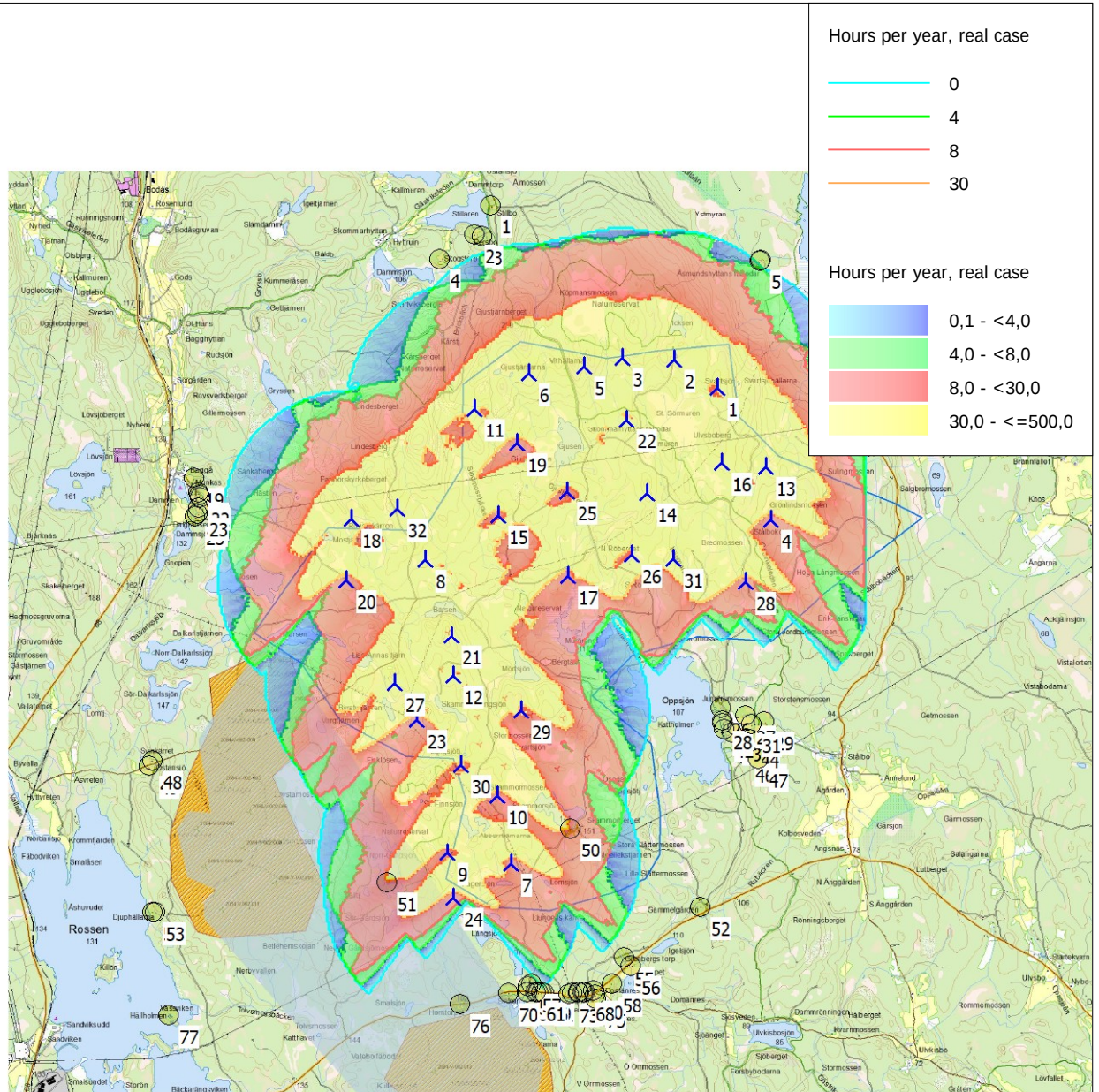
No.	Name	Expected [h/year]
1	USER F200 8500 200.0 !O! hub: 190,0 m (TOT: 290,0 m) (1754)	0:00
2	USER F200 8500 200.0 !O! hub: 190,0 m (TOT: 290,0 m) (1753)	0:00
3	USER F200 8500 200.0 !O! hub: 190,0 m (TOT: 290,0 m) (1756)	0:00
4	USER F200 8500 200.0 !O! hub: 190,0 m (TOT: 290,0 m) (1757)	0:00
5	USER F200 8500 200.0 !O! hub: 190,0 m (TOT: 290,0 m) (1752)	2:14
6	USER F200 8500 200.0 !O! hub: 190,0 m (TOT: 290,0 m) (1762)	0:00
7	USER F200 8500 200.0 !O! hub: 190,0 m (TOT: 290,0 m) (1773)	0:00
8	USER F200 8500 200.0 !O! hub: 190,0 m (TOT: 290,0 m) (1770)	0:00
9	USER F200 8500 200.0 !O! hub: 190,0 m (TOT: 290,0 m) (1767)	0:00
10	USER F200 8500 200.0 !O! hub: 190,0 m (TOT: 290,0 m) (1764)	10:48
11	USER F200 8500 200.0 !O! hub: 190,0 m (TOT: 290,0 m) (1776)	0:00
12	USER F200 8500 200.0 !O! hub: 190,0 m (TOT: 290,0 m) (1765)	0:00
13	USER F200 8500 200.0 !O! hub: 190,0 m (TOT: 290,0 m) (1783)	0:00
14	USER F200 8500 200.0 !O! hub: 190,0 m (TOT: 290,0 m) (1766)	0:00
15	USER F200 8500 200.0 !O! hub: 190,0 m (TOT: 290,0 m) (1769)	0:00
16	USER F200 8500 200.0 !O! hub: 190,0 m (TOT: 290,0 m) (1755)	0:00
17	USER F200 8500 200.0 !O! hub: 190,0 m (TOT: 290,0 m) (1777)	0:00
18	USER F200 8500 200.0 !O! hub: 190,0 m (TOT: 290,0 m) (1782)	0:00
19	USER F200 8500 200.0 !O! hub: 190,0 m (TOT: 290,0 m) (1759)	0:00
20	USER F200 8500 200.0 !O! hub: 190,0 m (TOT: 290,0 m) (1768)	0:00
21	USER F200 8500 200.0 !O! hub: 190,0 m (TOT: 290,0 m) (1771)	0:00
22	USER F200 8500 200.0 !O! hub: 190,0 m (TOT: 290,0 m) (1779)	0:00
23	USER F200 8500 200.0 !O! hub: 190,0 m (TOT: 290,0 m) (1772)	0:00
24	USER F200 8500 200.0 !O! hub: 190,0 m (TOT: 290,0 m) (1763)	0:00
25	USER F200 8500 200.0 !O! hub: 190,0 m (TOT: 290,0 m) (1778)	0:00
26	USER F200 8500 200.0 !O! hub: 190,0 m (TOT: 290,0 m) (1780)	0:00
27	USER F200 8500 200.0 !O! hub: 190,0 m (TOT: 290,0 m) (1774)	0:00
28	USER F200 8500 200.0 !O! hub: 190,0 m (TOT: 290,0 m) (1781)	6:23
29	USER F200 8500 200.0 !O! hub: 190,0 m (TOT: 290,0 m) (1761)	14:58
30	USER F200 8500 200.0 !O! hub: 190,0 m (TOT: 290,0 m) (1760)	22:30
31	USER F200 8500 200.0 !O! hub: 190,0 m (TOT: 290,0 m) (1758)	9:28
32	USER F200 8500 200.0 !O! hub: 190,0 m (TOT: 290,0 m) (1775)	6:48

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: Skuggberäkning LO: Stormossen



0 1 2 3 4 km

Map: Bitmap map: STOR Terrängkarta.jpg , Print scale 1:100 000, Map center Swedish UTM 33-SWREF99 (SE) East: 585 060 North: 6 692 538
New WTG Shadow receptor

Flicker map level: GSD50

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

SHADOW - Main Result

Calculation: Skuggberäkning LO: Stormossen & Skallberget/Utterberget

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) [BORLANGE]

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1,76	2,86	3,88	5,64	9,16	8,08	7,55	5,65	4,80	3,10	1,88	1,43

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
748	960	581	372	415	413	600	1 002	1 137	838	688	880	8 634

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:

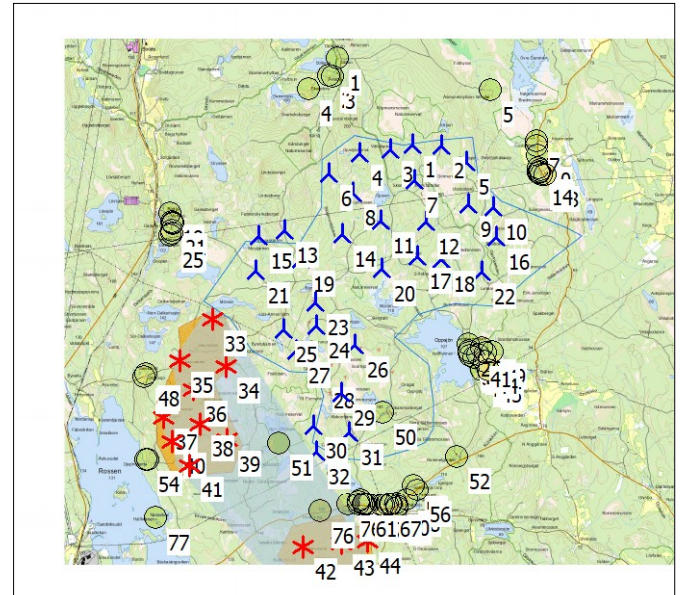
Height contours used: GSD50

Obstacles used in calculation

Receptor grid resolution: 1,0 m

All coordinates are in

Swedish UTM 33-SWREF99 (SE)



▲ New WTG

Scale 1:200 000
 ★ 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]
			[m]									
1	586 966	6 697 292	149,3	USER F200 8500 200.0 !...	Yes	USER	F200-8 500	8 500	200,0	190,0	1 898	9,8
2	587 740	6 697 262	144,3	USER F200 8500 200.0 !...	Yes	USER	F200-8 500	8 500	200,0	190,0	1 898	9,8
3	586 387	6 697 167	149,5	USER F200 8500 200.0 !...	Yes	USER	F200-8 500	8 500	200,0	190,0	1 898	9,8
4	585 571	6 697 063	155,4	USER F200 8500 200.0 !...	Yes	USER	F200-8 500	8 500	200,0	190,0	1 898	9,8
5	588 387	6 696 837	143,4	USER F200 8500 200.0 !...	Yes	USER	F200-8 500	8 500	200,0	190,0	1 898	9,8
6	584 757	6 696 524	161,9	USER F200 8500 200.0 !...	Yes	USER	F200-8 500	8 500	200,0	190,0	1 898	9,8
7	587 031	6 696 359	136,1	USER F200 8500 200.0 !...	Yes	USER	F200-8 500	8 500	200,0	190,0	1 898	9,8
8	585 387	6 696 010	134,6	USER F200 8500 200.0 !...	Yes	USER	F200-8 500	8 500	200,0	190,0	1 898	9,8
9	588 445	6 695 717	132,8	USER F200 8500 200.0 !...	Yes	USER	F200-8 500	8 500	200,0	190,0	1 898	9,8
10	589 111	6 695 647	119,5	USER F200 8500 200.0 !...	Yes	USER	F200-8 500	8 500	200,0	190,0	1 898	9,8
11	586 140	6 695 279	125,3	USER F200 8500 200.0 !...	Yes	USER	F200-8 500	8 500	200,0	190,0	1 898	9,8
12	587 334	6 695 249	140,0	USER F200 8500 200.0 !...	Yes	USER	F200-8 500	8 500	200,0	190,0	1 898	9,8
13	583 600	6 695 022	150,5	USER F200 8500 200.0 !...	Yes	USER	F200-8 500	8 500	200,0	190,0	1 898	9,8
14	585 111	6 694 919	140,7	USER F200 8500 200.0 !...	Yes	USER	F200-8 500	8 500	200,0	190,0	1 898	9,8
15	582 911	6 694 872	142,6	USER F200 8500 200.0 !...	Yes	USER	F200-8 500	8 500	200,0	190,0	1 898	9,8
16	589 186	6 694 858	133,7	USER F200 8500 200.0 !...	Yes	USER	F200-8 500	8 500	200,0	190,0	1 898	9,8
17	587 107	6 694 343	123,8	USER F200 8500 200.0 !...	Yes	USER	F200-8 500	8 500	200,0	190,0	1 898	9,8
18	587 721	6 694 277	118,9	USER F200 8500 200.0 !...	Yes	USER	F200-8 500	8 500	200,0	190,0	1 898	9,8
19	584 013	6 694 262	137,8	USER F200 8500 200.0 !...	Yes	USER	F200-8 500	8 500	200,0	190,0	1 898	9,8
20	586 153	6 694 024	118,3	USER F200 8500 200.0 !...	Yes	USER	F200-8 500	8 500	200,0	190,0	1 898	9,8
21	582 836	6 693 961	141,7	USER F200 8500 200.0 !...	Yes	USER	F200-8 500	8 500	200,0	190,0	1 898	9,8
22	588 804	6 693 937	114,3	USER F200 8500 200.0 !...	Yes	USER	F200-8 500	8 500	200,0	190,0	1 898	9,8
23	584 410	6 693 123	149,5	USER F200 8500 200.0 !...	Yes	USER	F200-8 500	8 500	200,0	190,0	1 898	9,8
24	584 437	6 692 518	146,9	USER F200 8500 200.0 !...	Yes	USER	F200-8 500	8 500	200,0	190,0	1 898	9,8
25	583 552	6 692 405	145,6	USER F200 8500 200.0 !...	Yes	USER	F200-8 500	8 500	200,0	190,0	1 898	9,8
26	585 455	6 691 996	143,1	USER F200 8500 200.0 !...	Yes	USER	F200-8 500	8 500	200,0	190,0	1 898	9,8
27	583 891	6 691 857	147,7	USER F200 8500 200.0 !...	Yes	USER	F200-8 500	8 500	200,0	190,0	1 898	9,8
28	584 548	6 691 184	152,1	USER F200 8500 200.0 !...	Yes	USER	F200-8 500	8 500	200,0	190,0	1 898	9,8
29	585 102	6 690 725	146,4	USER F200 8500 200.0 !...	Yes	USER	F200-8 500	8 500	200,0	190,0	1 898	9,8
30	584 341	6 689 861	146,6	USER F200 8500 200.0 !...	Yes	USER	F200-8 500	8 500	200,0	190,0	1 898	9,8
31	585 304	6 689 700	143,4	USER F200 8500 200.0 !...	Yes	USER	F200-8 500	8 500	200,0	190,0	1 898	9,8
32	584 432	6 689 193	140,4	USER F200 8500 200.0 !...	Yes	USER	F200-8 500	8 500	200,0	190,0	1 898	9,8
33	581 680	6 692 680	173,0	Siemens Gamesa SG 6.0-...No	No	Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	115,0	2 041	8,8
34	582 043	6 691 452	160,4	Siemens Gamesa SG 6.0-...No	No	Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	115,0	2 041	8,8
35	580 816	6 691 606	160,5	Siemens Gamesa SG 6.0-...No	No	Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	115,0	2 041	8,8
36	581 175	6 690 837	194,4	Siemens Gamesa SG 6.0-...No	No	Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	115,0	2 041	8,8

To be continued on next page...

SHADOW - Main Result

Calculation: Skuggberäkning LO: Stormossen & Skallberget/Utterberget

...continued from previous page

	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
			[m]									[RPM]
37	580 375	6 690 107	183,3	Siemens Gamesa SG 6.0-... No		Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	115,0	2 041	8,8
38	581 354	6 689 914	181,5	Siemens Gamesa SG 6.0-... No		Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	115,0	2 041	8,8
39	582 067	6 689 525	167,7	Siemens Gamesa SG 6.0-... No		Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	115,0	2 041	8,8
40	580 624	6 689 475	177,2	Siemens Gamesa SG 6.0-... No		Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	115,0	2 041	8,8
41	581 084	6 688 825	160,4	Siemens Gamesa SG 6.0-... No		Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	115,0	2 041	8,8
42	584 075	6 686 676	156,8	Siemens Gamesa SG 6.0-... No		Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	115,0	2 041	8,8
43	585 083	6 686 756	154,6	Siemens Gamesa SG 6.0-... No		Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	115,0	2 041	8,8
44	585 771	6 686 821	147,7	Siemens Gamesa SG 6.0-... No		Siemens Gamesa	SG 6.0-170-6 200	6 200	170,0	115,0	2 041	8,8

Shadow receptor-Input

No.	Name	Easting	Northing	Z	Width	Height	Elevation a.g.l.	Slope of window	Direction mode
				[m]	[m]	[m]	[m]	[°]	
1	STILLBO 1:2>1	584 995	6 699 573	107,2	5,0	5,0	0,0	0,0	"Green house mode"
2	SKOMMARHYTTAN 2:3>1	584 756	6 699 128	111,9	5,0	5,0	0,0	0,0	"Green house mode"
3	SKOMMARHYTTAN 2:6>1	584 865	6 699 110	106,6	5,0	5,0	0,0	0,0	"Green house mode"
4	ÖSTERHÅSTBO 11:13>2	584 235	6 698 759	115,1	5,0	5,0	0,0	0,0	"Green house mode"
5	ÅSMUNDSHYTTAN S:1>1	589 040	6 698 745	81,7	5,0	5,0	0,0	0,0	"Green house mode"
6	ÅSMUNDSHYTTAN S:1>1	589 018	6 698 731	82,1	5,0	5,0	0,0	0,0	"Green house mode"
7	AXELSBORG 1:5>1	590 250	6 697 397	77,6	5,0	5,0	0,0	0,0	"Green house mode"
9	FÄRNEBO-VÄSTANHEDE 2:1>1	590 256	6 697 262	77,0	5,0	5,0	0,0	0,0	"Green house mode"
10	FÄRNEBO-VÄSTANHEDE 2:1>1	590 269	6 697 001	80,5	5,0	5,0	0,0	0,0	"Green house mode"
11	FÄRNEBO-VÄSTANHEDE 2:1>1	590 293	6 696 681	83,1	5,0	5,0	0,0	0,0	"Green house mode"
12	FÄRNEBO-VÄSTANHEDE 2:1>1	590 340	6 696 634	84,5	5,0	5,0	0,0	0,0	"Green house mode"
13	FÄRNEBO-VÄSTANHEDE 1:4>1	590 341	6 696 582	87,8	5,0	5,0	0,0	0,0	"Green house mode"
14	FÄRNEBO-VÄSTANHEDE 1:4>1	590 334	6 696 564	88,3	5,0	5,0	0,0	0,0	"Green house mode"
15	BACKAN 1:10>2	590 291	6 696 561	87,2	5,0	5,0	0,0	0,0	"Green house mode"
16	FÄRNEBO-VÄSTANHEDE 1:3>4	590 364	6 696 516	88,0	5,0	5,0	0,0	0,0	"Green house mode"
17	FÄRNEBO-VÄSTANHEDE 1:3>4	590 383	6 696 511	87,2	5,0	5,0	0,0	0,0	"Green house mode"
18	FÄRNEBO-VÄSTANHEDE 1:5>1	590 472	6 696 501	82,1	5,0	5,0	0,0	0,0	"Green house mode"
19	BAGGHYTTAN 11:6>1	580 554	6 695 487	139,6	5,0	5,0	0,0	0,0	"Green house mode"
20	BAGGHYTTAN 11:44>1	580 618	6 695 261	136,4	5,0	5,0	0,0	0,0	"Green house mode"
21	BAGGHYTTAN 11:45>1	580 629	6 695 228	135,2	5,0	5,0	0,0	0,0	"Green house mode"
22	BAGGHYTTAN 11:46>1	580 648	6 695 196	135,5	5,0	5,0	0,0	0,0	"Green house mode"
23	BAGGHYTTAN 7:26>1	580 625	6 695 043	134,9	5,0	5,0	0,0	0,0	"Green house mode"
24	BAGGHYTTAN 7:30>1	580 611	6 694 951	134,6	5,0	5,0	0,0	0,0	"Green house mode"
25	BAGGHYTTAN 7:31>1	580 567	6 694 909	134,1	5,0	5,0	0,0	0,0	"Green house mode"
26	STÅLBO 1:2>1	588 432	6 692 040	107,7	5,0	5,0	0,0	0,0	"Green house mode"
27	STÅLBO 1:19>1	588 810	6 691 923	98,5	5,0	5,0	0,0	0,0	"Green house mode"
28	STÅLBO 1:2>1	588 465	6 691 849	108,2	5,0	5,0	0,0	0,0	"Green house mode"
29	STÅLBO 1:18>1	589 091	6 691 835	93,6	5,0	5,0	0,0	0,0	"Green house mode"
30	STÅLBO 2:16>1	588 461	6 691 803	108,2	5,0	5,0	0,0	0,0	"Green house mode"
31	STÅLBO 1:28>1	588 899	6 691 796	95,4	5,0	5,0	0,0	0,0	"Green house mode"
41	STÅLBO 1:15>1	588 697	6 691 749	101,6	5,0	5,0	0,0	0,0	"Green house mode"
42	STÅLBO 2:4>7	588 489	6 691 714	108,1	5,0	5,0	0,0	0,0	"Green house mode"
43	SKAMMORA 6:4>1	588 605	6 691 675	105,3	5,0	5,0	0,0	0,0	"Green house mode"
44	SKAMMORA 6:3>1	588 866	6 691 562	103,4	5,0	5,0	0,0	0,0	"Green house mode"
45	SKAMMORA 6:5>1	588 974	6 691 348	101,8	5,0	5,0	0,0	0,0	"Green house mode"
46	SKAMMORA 6:6>1	588 790	6 691 348	103,7	5,0	5,0	0,0	0,0	"Green house mode"
47	SKAMMORA 6:5>1	588 992	6 691 279	98,9	5,0	5,0	0,0	0,0	"Green house mode"
48	ÖSTANSJÖ 1:3>1	579 934	6 691 247	145,9	5,0	5,0	0,0	0,0	"Green house mode"
49	ÖSTANSJÖ 1:2>1	579 882	6 691 173	144,3	5,0	5,0	0,0	0,0	"Green house mode"
50	AXELSBORG 1:8>2	586 189	6 690 235	142,4	5,0	5,0	0,0	0,0	"Green house mode"
51	ÖVRE FORNBY 1:2>1	583 443	6 689 420	144,0	5,0	5,0	0,0	0,0	"Green house mode"
52	SKAMMORA 6:9>1	588 139	6 689 051	111,0	5,0	5,0	0,0	0,0	"Green house mode"
53	ÖVRE FORNBY 1:5>1	579 976	6 688 976	133,3	5,0	5,0	0,0	0,0	"Green house mode"
54	ÖVRE FORNBY 1:5>1	579 933	6 688 969	131,3	5,0	5,0	0,0	0,0	"Green house mode"
55	AXELSBORG 1:9>1	586 988	6 688 300	114,3	5,0	5,0	0,0	0,0	"Green house mode"
56	AXELSBORG 1:11>1	587 094	6 688 175	105,8	5,0	5,0	0,0	0,0	"Green house mode"
57	HORNTORPSSKOGEN 1:10>1	585 605	6 687 911	133,3	5,0	5,0	0,0	0,0	"Green house mode"
58	AXELSBORG 1:6>1	586 805	6 687 904	111,4	5,0	5,0	0,0	0,0	"Green house mode"
59	HORNTORPSSKOGEN 1:9>1	585 552	6 687 866	131,8	5,0	5,0	0,0	0,0	"Green house mode"

To be continued on next page...

SHADOW - Main Result

Calculation: Skuggberäkning LO: Stormossen & Skallberget/Utterberget

...continued from previous page

No.	Name	Easting	Northing	Z	Width	Height	Elevation a.g.l.	Slope of window	Direction mode
				[m]	[m]	[m]	[m]	[°]	
60	AXELSBURG 1:17>1	586 531	6 687 803	116,9	5,0	5,0	0,0	0,0	"Green house mode"
61	HORNTORPSSKOGEN 1:2>1	585 664	6 687 780	127,8	5,0	5,0	0,0	0,0	"Green house mode"
62	HORNTORPSSKOGEN 1:4>1	585 535	6 687 779	127,9	5,0	5,0	0,0	0,0	"Green house mode"
63	AXELSBURG 1:16>1	586 314	6 687 778	121,4	5,0	5,0	0,0	0,0	"Green house mode"
64	AXELSBURG 1:12>1	586 383	6 687 778	117,7	5,0	5,0	0,0	0,0	"Green house mode"
65	AXELSBURG 1:13>1	586 406	6 687 778	117,3	5,0	5,0	0,0	0,0	"Green house mode"
66	HORNTORPSSKOGEN 1:5>1	585 710	6 687 777	127,6	5,0	5,0	0,0	0,0	"Green house mode"
67	AXELSBURG 1:16>1	586 307	6 687 777	121,8	5,0	5,0	0,0	0,0	"Green house mode"
68	AXELSBURG 1:13>1	586 406	6 687 775	117,2	5,0	5,0	0,0	0,0	"Green house mode"
69	HORNTORPSSKOGEN 1:6>1	585 754	6 687 774	126,9	5,0	5,0	0,0	0,0	"Green house mode"
70	HORNTORPSSKOGEN 1:13>1	585 258	6 687 772	128,0	5,0	5,0	0,0	0,0	"Green house mode"
71	HORNTORPSSKOGEN 1:7>1	585 797	6 687 772	125,9	5,0	5,0	0,0	0,0	"Green house mode"
72	HORNTORPSSKOGEN 1:3>1	586 216	6 687 771	126,5	5,0	5,0	0,0	0,0	"Green house mode"
73	HORNTORPSSKOGEN 1:8>1	586 164	6 687 757	127,0	5,0	5,0	0,0	0,0	"Green house mode"
74	AXELSBURG 1:10>1	586 553	6 687 742	114,2	5,0	5,0	0,0	0,0	"Green house mode"
75	AXELSBURG 1:7>1	586 568	6 687 678	113,5	5,0	5,0	0,0	0,0	"Green house mode"
76	HORNTORPSSKOGEN 1:11>1	584 540	6 687 596	130,8	5,0	5,0	0,0	0,0	"Green house mode"
77	ÖVRE FORNBÄ 1:4>1	580 180	6 687 431	130,5	5,0	5,0	0,0	0,0	"Green house mode"

Calculation Results

Shadow receptor

Shadow, expected values

No.	Name	Shadow hours per year [h/year]
1	STILLBO 1:2>1	0:00
2	SKOMMARHYTTAN 2:3>1	0:00
3	SKOMMARHYTTAN 2:6>1	0:00
4	ÖSTERHÄSTBO 11:13>2	0:00
5	ÅSMUNDSHYTTAN S:1>1	0:00
6	ÅSMUNDSHYTTAN S:1>1	0:00
7	AXELSBURG 1:5>1	0:00
9	FÄRNEBO-VÄSTANHEDE 2:1>1	0:00
10	FÄRNEBO-VÄSTANHEDE 2:1>1	5:02
11	FÄRNEBO-VÄSTANHEDE 2:1>1	3:16
12	FÄRNEBO-VÄSTANHEDE 2:1>1	3:11
13	FÄRNEBO-VÄSTANHEDE 1:4>1	3:15
14	FÄRNEBO-VÄSTANHEDE 1:4>1	3:21
15	BACKAN 1:10>2	3:29
16	FÄRNEBO-VÄSTANHEDE 1:3>4	3:18
17	FÄRNEBO-VÄSTANHEDE 1:3>4	3:14
18	FÄRNEBO-VÄSTANHEDE 1:5>1	2:55
19	BAGGHYTTAN 11:6>1	0:00
20	BAGGHYTTAN 11:44>1	0:00
21	BAGGHYTTAN 11:45>1	0:00
22	BAGGHYTTAN 11:46>1	0:00
23	BAGGHYTTAN 7:26>1	0:00
24	BAGGHYTTAN 7:30>1	0:00
25	BAGGHYTTAN 7:31>1	0:00
26	STÅLBO 1:2>1	0:00
27	STÅLBO 1:19>1	0:00
28	STÅLBO 1:2>1	0:00
29	STÅLBO 1:18>1	0:00
30	STÅLBO 2:16>1	0:00
31	STÅLBO 1:28>1	0:00
41	STÅLBO 1:15>1	0:00
42	STÅLBO 2:4>7	0:00
43	SKAMMORA 6:4>1	0:00
44	SKAMMORA 6:3>1	0:00
45	SKAMMORA 6:5>1	0:00
46	SKAMMORA 6:6>1	0:00
47	SKAMMORA 6:5>1	0:00
48	ÖSTANSJÖ 1:3>1	23:32

To be continued on next page...

SHADOW - Main Result

Calculation: Skuggberäkning LO: Stormossen & Skallberget/Utterberget

...continued from previous page

No.	Name	Shadow, expected values
		Shadow hours per year [h/year]
49	ÖSTANSJÖ 1:2>1	23:18
50	AXELSBERG 1:8>2	29:54
51	ÖVRE FORNBY 1:2>1	32:31
52	SKAMMORA 6:9>1	0:00
53	ÖVRE FORNBY 1:5>1	16:23
54	ÖVRE FORNBY 1:5>1	17:12
55	AXELSBERG 1:9>1	1:35
56	AXELSBERG 1:11>1	1:35
57	HORNTORPSSKOGEN 1:10>1	14:51
58	AXELSBERG 1:6>1	2:45
59	HORNTORPSSKOGEN 1:9>1	16:23
60	AXELSBERG 1:17>1	6:03
61	HORNTORPSSKOGEN 1:2>1	16:31
62	HORNTORPSSKOGEN 1:4>1	18:40
63	AXELSBERG 1:16>1	8:41
64	AXELSBERG 1:12>1	7:43
65	AXELSBERG 1:13>1	7:28
66	HORNTORPSSKOGEN 1:5>1	16:08
67	AXELSBERG 1:16>1	8:47
68	AXELSBERG 1:13>1	7:27
69	HORNTORPSSKOGEN 1:6>1	15:50
70	HORNTORPSSKOGEN 1:13>1	18:34
71	HORNTORPSSKOGEN 1:7>1	14:32
72	HORNTORPSSKOGEN 1:3>1	11:03
73	HORNTORPSSKOGEN 1:8>1	12:09
74	AXELSBERG 1:10>1	6:09
75	AXELSBERG 1:7>1	6:19
76	HORNTORPSSKOGEN 1:11>1	16:47
77	ÖVRE FORNBY 1:4>1	0:00

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

No.	Name	Expected [h/year]
1	USER F200 8500 200.0 !O! hub: 190,0 m (TOT: 290,0 m) (1754)	0:00
2	USER F200 8500 200.0 !O! hub: 190,0 m (TOT: 290,0 m) (1753)	0:00
3	USER F200 8500 200.0 !O! hub: 190,0 m (TOT: 290,0 m) (1756)	0:00
4	USER F200 8500 200.0 !O! hub: 190,0 m (TOT: 290,0 m) (1757)	0:00
5	USER F200 8500 200.0 !O! hub: 190,0 m (TOT: 290,0 m) (1752)	2:14
6	USER F200 8500 200.0 !O! hub: 190,0 m (TOT: 290,0 m) (1762)	0:00
7	USER F200 8500 200.0 !O! hub: 190,0 m (TOT: 290,0 m) (1773)	0:00
8	USER F200 8500 200.0 !O! hub: 190,0 m (TOT: 290,0 m) (1770)	0:00
9	USER F200 8500 200.0 !O! hub: 190,0 m (TOT: 290,0 m) (1767)	0:00
10	USER F200 8500 200.0 !O! hub: 190,0 m (TOT: 290,0 m) (1764)	10:48
11	USER F200 8500 200.0 !O! hub: 190,0 m (TOT: 290,0 m) (1776)	0:00
12	USER F200 8500 200.0 !O! hub: 190,0 m (TOT: 290,0 m) (1765)	0:00
13	USER F200 8500 200.0 !O! hub: 190,0 m (TOT: 290,0 m) (1783)	0:00
14	USER F200 8500 200.0 !O! hub: 190,0 m (TOT: 290,0 m) (1766)	0:00
15	USER F200 8500 200.0 !O! hub: 190,0 m (TOT: 290,0 m) (1769)	0:00
16	USER F200 8500 200.0 !O! hub: 190,0 m (TOT: 290,0 m) (1755)	0:00
17	USER F200 8500 200.0 !O! hub: 190,0 m (TOT: 290,0 m) (1777)	0:00
18	USER F200 8500 200.0 !O! hub: 190,0 m (TOT: 290,0 m) (1782)	0:00
19	USER F200 8500 200.0 !O! hub: 190,0 m (TOT: 290,0 m) (1759)	0:00
20	USER F200 8500 200.0 !O! hub: 190,0 m (TOT: 290,0 m) (1768)	0:00
21	USER F200 8500 200.0 !O! hub: 190,0 m (TOT: 290,0 m) (1771)	0:00
22	USER F200 8500 200.0 !O! hub: 190,0 m (TOT: 290,0 m) (1779)	0:00
23	USER F200 8500 200.0 !O! hub: 190,0 m (TOT: 290,0 m) (1772)	0:00
24	USER F200 8500 200.0 !O! hub: 190,0 m (TOT: 290,0 m) (1763)	0:00
25	USER F200 8500 200.0 !O! hub: 190,0 m (TOT: 290,0 m) (1778)	0:00
26	USER F200 8500 200.0 !O! hub: 190,0 m (TOT: 290,0 m) (1780)	0:00
27	USER F200 8500 200.0 !O! hub: 190,0 m (TOT: 290,0 m) (1774)	0:00
28	USER F200 8500 200.0 !O! hub: 190,0 m (TOT: 290,0 m) (1781)	6:23
29	USER F200 8500 200.0 !O! hub: 190,0 m (TOT: 290,0 m) (1761)	14:58

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SHADOW - Main Result

Calculation: Skuggberäkning LO: Stormossen & Skallberget/Utterberget

...continued from previous page

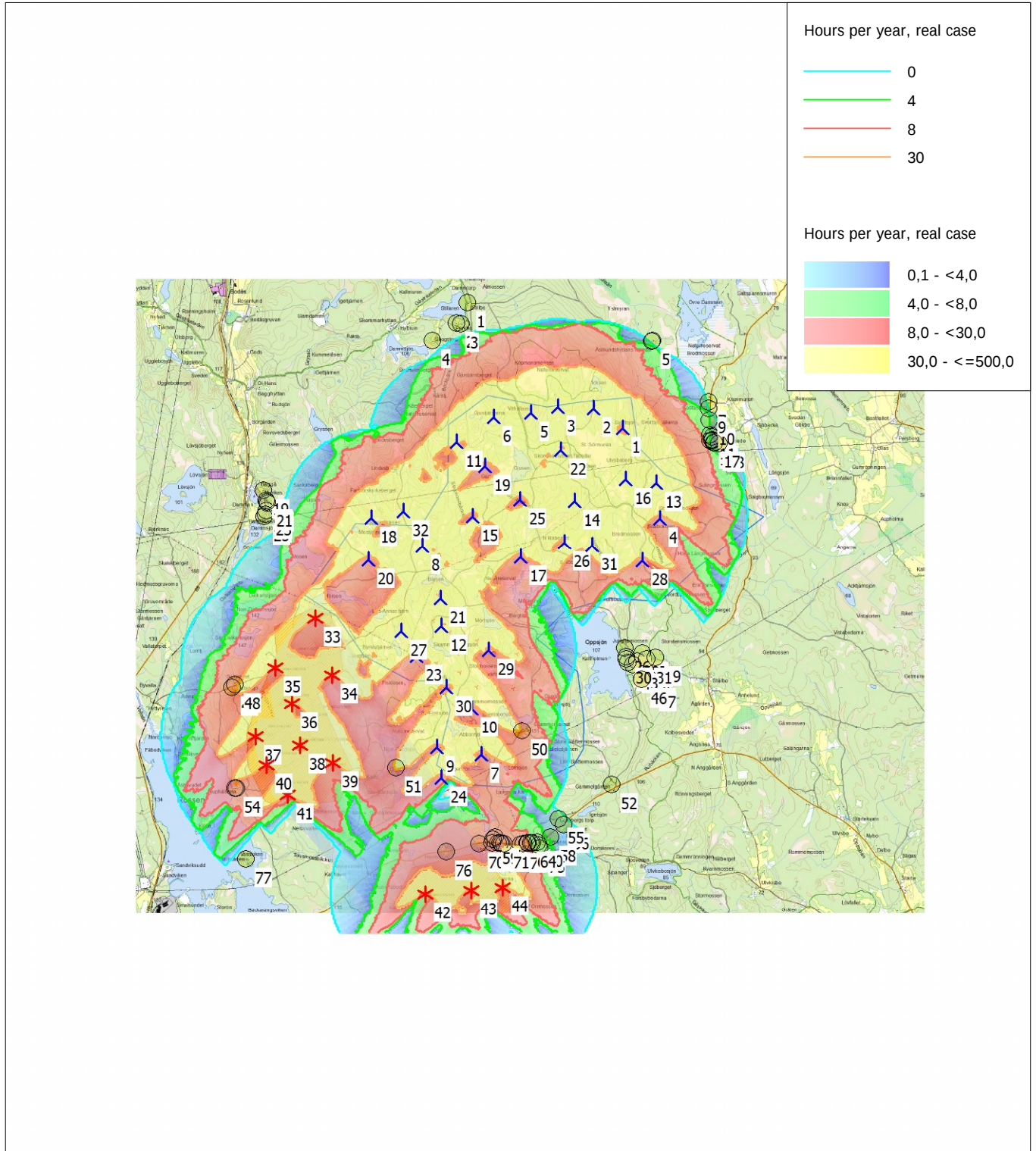
No.	Name	Expected [h/year]
30	USER F200 8500 200.0 !O! hub: 190,0 m (TOT: 290,0 m) (1760)	22:30
31	USER F200 8500 200.0 !O! hub: 190,0 m (TOT: 290,0 m) (1758)	9:28
32	USER F200 8500 200.0 !O! hub: 190,0 m (TOT: 290,0 m) (1775)	6:48
33	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 115,0 m (TOT: 200,0 m) (96)	0:00
34	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 115,0 m (TOT: 200,0 m) (97)	0:00
35	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 115,0 m (TOT: 200,0 m) (98)	16:44
36	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 115,0 m (TOT: 200,0 m) (99)	4:24
37	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 115,0 m (TOT: 200,0 m) (100)	10:20
38	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 115,0 m (TOT: 200,0 m) (101)	10:07
39	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 115,0 m (TOT: 200,0 m) (102)	3:03
40	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 115,0 m (TOT: 200,0 m) (103)	15:27
41	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 115,0 m (TOT: 200,0 m) (104)	4:32
42	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 115,0 m (TOT: 200,0 m) (105)	12:29
43	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 115,0 m (TOT: 200,0 m) (106)	39:13
44	Siemens Gamesa SG 6.0-170 6200 170.0 !O! hub: 115,0 m (TOT: 200,0 m) (107)	59:31

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.

SHADOW - Map

Calculation: Skuggberäkning LO: Stormossen & Skallberget/Utterberget



Map: Bitmap map: STOR Terrängkarta.jpg , Print scale 1:125 000, Map center Swedish UTM 33-SWREF99 (SE) East: 586 110 North: 6 693 540
 * New WTG * Existing WTG * Shadow receptor
 Flicker map level: GSD50
 Time step: 4 minutes, Day step: 14 days, Map resolution: 30 m, Visibility resolution: 15 m, Eye height: 1,5 m