

SHADOW - Main Result

Calculation: varjutus_lõunaosa

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
1,06 2,24 4,50 6,38 8,59 8,43 8,90 7,50 5,07 2,54 1,01 0,68

Operational time
N NE E SE S SW W NW Sum
710 631 631 946 1 498 1 498 1 104 867 7 885

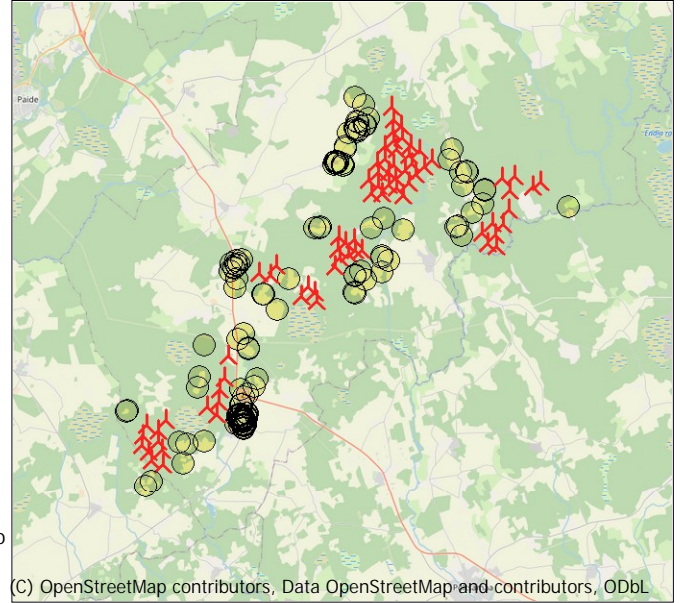
Monthly aggregation of real case reduction
A ZVI (Zones of Visual Influence) calculation is performed before flicker calculation so non visible WTG do not contribute to calculated flicker values. A WTG will be visible if it is visible from any part of the receiver window. The ZVI calculation is based on the following assumptions:
Height contours used: Height Contours: CONTOURLINE_ONLINEDATA_4.wpo
Receptor grid resolution: 1,0 m

All coordinates are in
Estonian Lambert L-EST97-EST97 (EE)

WTGs

	East	North	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	609 890	6 528 002	80,0	TU5	Yes	Teoreetiline	-7 000	7 000	180,0	180,0	1 783	-
1-1	616 150	6 523 446	80,0	1	Yes	Teoreetiline	-7 000	7 000	180,0	180,0	1 783	-
1-11	615 076	6 521 574	70,0	11	Yes	Teoreetiline	-7 000	7 000	180,0	180,0	1 783	-
1-13	615 272	6 522 696	75,9	13	Yes	Teoreetiline	-7 000	7 000	180,0	180,0	1 783	-
1-14	614 761	6 522 139	71,5	14	Yes	Teoreetiline	-7 000	7 000	180,0	180,0	1 783	-
1-15	615 861	6 522 626	77,7	15	Yes	Teoreetiline	-7 000	7 000	180,0	180,0	1 783	-
1-16	617 804	6 524 941	80,0	16	Yes	Teoreetiline	-7 000	7 000	180,0	180,0	1 783	-
1-2	616 418	6 525 179	80,0	2	Yes	Teoreetiline	-7 000	7 000	180,0	180,0	1 783	-
1-3	616 184	6 524 452	80,0	3	Yes	Teoreetiline	-7 000	7 000	180,0	180,0	1 783	-
1-4	615 729	6 525 083	80,0	4	Yes	Teoreetiline	-7 000	7 000	180,0	180,0	1 783	-
1-5	617 399	6 524 656	80,0	5	Yes	Teoreetiline	-7 000	7 000	180,0	180,0	1 783	-
1-8	615 481	6 522 065	72,8	8	Yes	Teoreetiline	-7 000	7 000	180,0	180,0	1 783	-
1-9	615 537	6 521 482	70,0	9	Yes	Teoreetiline	-7 000	7 000	180,0	180,0	1 783	-
10	609 196	6 525 234	74,1	TU5	Yes	Teoreetiline	-7 000	7 000	180,0	180,0	1 783	-
11	609 096	6 525 709	75,0	TU5	Yes	Teoreetiline	-7 000	7 000	180,0	180,0	1 783	-
12	609 749	6 525 244	73,9	TU5	Yes	Teoreetiline	-7 000	7 000	180,0	180,0	1 783	-
13	610 162	6 524 409	71,7	TU5	Yes	Teoreetiline	-7 000	7 000	180,0	180,0	1 783	-
14	609 461	6 526 580	77,6	TU5	Yes	Teoreetiline	-7 000	7 000	180,0	180,0	1 783	-
15	609 953	6 526 898	78,7	TU5	Yes	Teoreetiline	-7 000	7 000	180,0	180,0	1 783	-
16	610 420	6 527 083	79,5	TU5	Yes	Teoreetiline	-7 000	7 000	180,0	180,0	1 783	-
17	610 843	6 526 696	78,5	TU5	Yes	Teoreetiline	-7 000	7 000	180,0	180,0	1 783	-
18	611 318	6 526 435	78,0	TU5	Yes	Teoreetiline	-7 000	7 000	180,0	180,0	1 783	-
19	611 600	6 525 576	75,6	TU5	Yes	Teoreetiline	-7 000	7 000	180,0	180,0	1 783	-
2	609 434	6 524 101	71,0	TU5	Yes	Teoreetiline	-7 000	7 000	180,0	180,0	1 783	-
20	610 938	6 525 708	75,7	TU5	Yes	Teoreetiline	-7 000	7 000	180,0	180,0	1 783	-
21	609 503	6 525 957	75,8	TU5	Yes	Teoreetiline	-7 000	7 000	180,0	180,0	1 783	-
22	610 117	6 526 419	77,4	TU5	Yes	Teoreetiline	-7 000	7 000	180,0	180,0	1 783	-
23	609 978	6 525 639	75,1	TU5	Yes	Teoreetiline	-7 000	7 000	180,0	180,0	1 783	-
24	610 793	6 526 155	77,0	TU5	Yes	Teoreetiline	-7 000	7 000	180,0	180,0	1 783	-
25	610 589	6 525 343	74,5	TU5	Yes	Teoreetiline	-7 000	7 000	180,0	180,0	1 783	-
26	610 092	6 524 921	73,1	TU5	Yes	Teoreetiline	-7 000	7 000	180,0	180,0	1 783	-
27	610 772	6 524 673	72,7	TU5	Yes	Teoreetiline	-7 000	7 000	180,0	180,0	1 783	-
28	610 527	6 524 033	70,7	TU5	Yes	Teoreetiline	-7 000	7 000	180,0	180,0	1 783	-
29	611 128	6 525 175	74,3	TU5	Yes	Teoreetiline	-7 000	7 000	180,0	180,0	1 783	-
3	609 822	6 528 681	80,0	TU5	Yes	Teoreetiline	-7 000	7 000	180,0	180,0	1 783	-
30	611 971	6 525 936	76,8	TU5	Yes	Teoreetiline	-7 000	7 000	180,0	180,0	1 783	-

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SHADOW - Main Result

Calculation: varjutus_lõunaosa

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	East	North	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 [RPM]
3a-1	601 493	6 515 271	70,0	1	Yes	Teoreetiline	-7 000	7 000	180,0	180,0	1 783	-
3a-2	601 318	6 514 128	70,0	2	Yes	Teoreetiline	-7 000	7 000	180,0	180,0	1 783	-
3b-1	601 055	6 513 469	70,0	1	Yes	Teoreetiline	-7 000	7 000	180,0	180,0	1 783	-
3b-2	600 391	6 512 551	70,0	2	Yes	Teoreetiline	-7 000	7 000	180,0	180,0	1 783	-
3b-3	600 965	6 512 150	70,0	3	Yes	Teoreetiline	-7 000	7 000	180,0	180,0	1 783	-
3b-4	601 042	6 512 799	70,0	4	Yes	Teoreetiline	-7 000	7 000	180,0	180,0	1 783	-
3c-1	597 074	6 510 906	66,8	1	Yes	Teoreetiline	-7 000	7 000	180,0	180,0	1 783	-
3c-10	596 988	6 510 387	65,8	10	Yes	Teoreetiline	-7 000	7 000	180,0	180,0	1 783	-
3c-2	597 532	6 509 592	63,4	2	Yes	Teoreetiline	-7 000	7 000	180,0	180,0	1 783	-
3c-3	598 135	6 509 441	62,2	3	Yes	Teoreetiline	-7 000	7 000	180,0	180,0	1 783	-
3c-4	597 233	6 511 483	67,7	4	Yes	Teoreetiline	-7 000	7 000	180,0	180,0	1 783	-
3c-5	598 280	6 511 768	67,2	5	Yes	Teoreetiline	-7 000	7 000	180,0	180,0	1 783	-
3c-6	598 088	6 510 181	63,8	6	Yes	Teoreetiline	-7 000	7 000	180,0	180,0	1 783	-
3c-7	597 851	6 511 221	66,3	7	Yes	Teoreetiline	-7 000	7 000	180,0	180,0	1 783	-
3c-8	597 851	6 510 649	65,1	8	Yes	Teoreetiline	-7 000	7 000	180,0	180,0	1 783	-
3c-9	597 352	6 510 046	64,6	9	Yes	Teoreetiline	-7 000	7 000	180,0	180,0	1 783	-
4	609 880	6 527 372	80,0	TU5	Yes	Teoreetiline	-7 000	7 000	180,0	180,0	1 783	-
5	610 298	6 527 658	80,0	TU5	Yes	Teoreetiline	-7 000	7 000	180,0	180,0	1 783	-
6	609 720	6 524 574	72,2	TU5	Yes	Teoreetiline	-7 000	7 000	180,0	180,0	1 783	-
6-1	607 714	6 520 808	70,0	1	Yes	Teoreetiline	-7 000	7 000	180,0	180,0	1 783	-
6-2	607 034	6 520 121	70,0	2	Yes	Teoreetiline	-7 000	7 000	180,0	180,0	1 783	-
6-3	607 191	6 521 767	70,0	3	Yes	Teoreetiline	-7 000	7 000	180,0	180,0	1 783	-
6-4	608 434	6 521 064	70,0	4	Yes	Teoreetiline	-7 000	7 000	180,0	180,0	1 783	-
6-5	608 039	6 521 053	70,0	5	Yes	Teoreetiline	-7 000	7 000	180,0	180,0	1 783	-
6-6	607 111	6 521 071	70,0	6	Yes	Teoreetiline	-7 000	7 000	180,0	180,0	1 783	-
6-7	607 247	6 520 606	70,0	7	Yes	Teoreetiline	-7 000	7 000	180,0	180,0	1 783	-
6-8	607 564	6 521 439	70,0	8	Yes	Teoreetiline	-7 000	7 000	180,0	180,0	1 783	-
6-9	607 995	6 521 639	70,0	9	Yes	Teoreetiline	-7 000	7 000	180,0	180,0	1 783	-
7	608 830	6 524 079	71,1	TU5	Yes	Teoreetiline	-7 000	7 000	180,0	180,0	1 783	-
7-1	603 609	6 519 612	70,0	1	Yes	Teoreetiline	-7 000	7 000	180,0	180,0	1 783	-
7-2	602 997	6 519 663	70,0	2	Yes	Teoreetiline	-7 000	7 000	180,0	180,0	1 783	-
7-3	603 879	6 520 111	70,0	3	Yes	Teoreetiline	-7 000	7 000	180,0	180,0	1 783	-
8	608 684	6 524 754	72,9	TU5	Yes	Teoreetiline	-7 000	7 000	180,0	180,0	1 783	-
8-1	605 284	6 518 555	70,0	1	Yes	Teoreetiline	-7 000	7 000	180,0	180,0	1 783	-
8-2	605 647	6 519 084	70,0	2	Yes	Teoreetiline	-7 000	7 000	180,0	180,0	1 783	-
8-3	605 954	6 518 743	70,0	3	Yes	Teoreetiline	-7 000	7 000	180,0	180,0	1 783	-
8-4	606 070	6 518 268	70,0	4	Yes	Teoreetiline	-7 000	7 000	180,0	180,0	1 783	-
9	609 156	6 524 509	72,2	TU5	Yes	Teoreetiline	-7 000	7 000	180,0	180,0	1 783	-

Shadow receptor-Input

No.	Name	East	North	Z	Width	Height	Elevation	Slope of	Direction mode	Eye height
				[m]	[m]	[m]	a.g.l.	window		(ZVI) a.g.l.
				[m]	[m]	[m]	[m]	[°]		[m]
A	Mikutooma	607 293	6 525 531	75,3	3,0	2,0	0,0	90,0	"Green house mode"	2,0
B	Otsa	607 979	6 527 342	79,3	3,0	2,0	0,0	90,0	"Green house mode"	2,0
C	Kadastiku tee 1	601 989	6 511 659	69,3	3,0	2,0	0,0	90,0	"Green house mode"	2,0
D	Tiigi	601 751	6 520 115	70,0	3,0	2,0	0,0	90,0	"Green house mode"	2,0
E	Rätsepa	609 465	6 520 669	70,0	3,0	2,0	0,0	90,0	"Green house mode"	2,0
F	Kadaka	613 083	6 526 529	80,0	3,0	2,0	0,0	90,0	"Green house mode"	2,0
G	Simmuni	609 544	6 519 936	70,0	3,0	2,0	0,0	90,0	"Green house mode"	2,0
H	Harjaku	607 048	6 525 661	75,7	3,0	2,0	0,0	90,0	"Green house mode"	2,0
I	Mõmmimäe tee 2	602 531	6 512 074	70,0	3,0	2,0	0,0	90,0	"Green house mode"	2,0
J	Mihkle	607 400	6 526 434	77,6	3,0	2,0	0,0	90,0	"Green house mode"	2,0
K	Valgepea	602 560	6 515 640	70,0	3,0	2,0	0,0	90,0	"Green house mode"	2,0
L	Kikevere	601 987	6 516 146	70,0	3,0	2,0	0,0	90,0	"Green house mode"	2,0
M	Antsu tee 4	602 506	6 511 986	70,0	3,0	2,0	0,0	90,0	"Green house mode"	2,0
N	Uustalu-Metsa	607 940	6 527 394	79,5	3,0	2,0	0,0	90,0	"Green house mode"	2,0
O	Jõeäärse	619 319	6 523 652	80,0	3,0	2,0	0,0	90,0	"Green house mode"	2,0
P	Pargi	613 883	6 525 336	80,0	3,0	2,0	0,0	90,0	"Green house mode"	2,0
Q	H. Rebase tee 2	602 211	6 511 835	70,0	3,0	2,0	0,0	90,0	"Green house mode"	2,0
R	Sepa	608 442	6 527 647	80,0	3,0	2,0	0,0	90,0	"Green house mode"	2,0
S	Rukkilille	602 287	6 511 899	70,0	3,0	2,0	0,0	90,0	"Green house mode"	2,0

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SHADOW - Main Result

Calculation: varjutus_lõunaosa

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No.	Name	East	North	Z	Width	Height	Elevation a.g.l.	Slope of window	Direction mode	Eye height (ZVI) a.g.l.
				[m]	[m]	[m]	[m]	[°]		[m]
T	Roode	607 858	6 529 129	80,0	3,0	2,0	0,0	90,0	"Green house mode"	2,0
U	Hermani	601 898	6 520 211	70,0	3,0	2,0	0,0	90,0	"Green house mode"	2,0
V	Uuesauna	599 405	6 510 513	64,3	3,0	2,0	0,0	90,0	"Green house mode"	2,0
W	Tuljaku tee 1	602 422	6 511 497	68,8	3,0	2,0	0,0	90,0	"Green house mode"	2,0
X	Tuljaku tee 5	602 384	6 511 458	68,6	3,0	2,0	0,0	90,0	"Green house mode"	2,0
Y	Salu	599 233	6 509 475	61,6	3,0	2,0	0,0	90,0	"Green house mode"	2,0
Z	Tuljaku tee 7	602 406	6 511 400	68,4	3,0	2,0	0,0	90,0	"Green house mode"	2,0
AA	H. Rebase tee 6	602 104	6 511 890	70,0	3,0	2,0	0,0	90,0	"Green house mode"	2,0
AB	Pika-Reinu	600 343	6 510 707	65,6	3,0	2,0	0,0	90,0	"Green house mode"	2,0
AC	Viljandi mnt 11	602 364	6 511 897	70,0	3,0	2,0	0,0	90,0	"Green house mode"	2,0
AD	Kiigevere tee 5/1	602 453	6 511 563	69,1	3,0	2,0	0,0	90,0	"Green house mode"	2,0
AE	Antsu tee 15	602 471	6 511 858	70,0	3,0	2,0	0,0	90,0	"Green house mode"	2,0
AF	Sandre	609 508	6 520 804	70,0	3,0	2,0	0,0	90,0	"Green house mode"	2,0
AG	Nurme tee 2	602 204	6 512 118	70,0	3,0	2,0	0,0	90,0	"Green house mode"	2,0
AH	Kamseni tee 1	602 321	6 511 982	70,0	3,0	2,0	0,0	90,0	"Green house mode"	2,0
AI	Kingu	608 691	6 519 504	70,0	3,0	2,0	0,0	90,0	"Green house mode"	2,0
AJ	Peetre	608 082	6 527 427	79,4	3,0	2,0	0,0	90,0	"Green house mode"	2,0
AK	Neeme	610 566	6 522 230	70,0	3,0	2,0	0,0	90,0	"Green house mode"	2,0
AL	Miku	605 915	6 522 165	70,0	3,0	2,0	0,0	90,0	"Green house mode"	2,0
AM	Tänavotsa	607 269	6 525 601	75,5	3,0	2,0	0,0	90,0	"Green house mode"	2,0
AN	Laane-Madise	609 539	6 522 773	70,0	3,0	2,0	0,0	90,0	"Green house mode"	2,0
AO	Rehemetsa	602 073	6 520 373	70,0	3,0	2,0	0,0	90,0	"Green house mode"	2,0
AP	Mäeotsa/1	614 849	6 524 401	80,0	3,0	2,0	0,0	90,0	"Green house mode"	2,0
AQ	Pärna	607 949	6 527 524	79,7	3,0	2,0	0,0	90,0	"Green house mode"	2,0
AR	Toominga	606 963	6 525 611	75,6	3,0	2,0	0,0	90,0	"Green house mode"	2,0
AS	Viljandi mnt 3	602 361	6 511 687	69,6	3,0	2,0	0,0	90,0	"Green house mode"	2,0
AT	Mäeotsa	614 838	6 524 436	80,0	3,0	2,0	0,0	90,0	"Green house mode"	2,0
AU	Lillemäe	613 545	6 525 291	80,0	3,0	2,0	0,0	90,0	"Green house mode"	2,0
AV	Mõisamaa	608 044	6 527 810	80,0	3,0	2,0	0,0	90,0	"Green house mode"	2,0
AW	Reinu	601 475	6 519 738	70,0	3,0	2,0	0,0	90,0	"Green house mode"	2,0
AX	Rendi	603 243	6 518 577	70,0	3,0	2,0	0,0	90,0	"Green house mode"	2,0
AY	Hundiaugu	602 896	6 513 684	70,0	3,0	2,0	0,0	90,0	"Green house mode"	2,0
AZ	Vana-Kubja	607 489	6 527 214	79,7	3,0	2,0	0,0	90,0	"Green house mode"	2,0
BA	Uue-Kaasiku	613 690	6 524 608	79,3	3,0	2,0	0,0	90,0	"Green house mode"	2,0
BB	Kangru	614 776	6 523 679	80,0	3,0	2,0	0,0	90,0	"Green house mode"	2,0
BC	Teeääre	606 187	6 522 203	70,0	3,0	2,0	0,0	90,0	"Green house mode"	2,0
BD	Kamseni tee 5	602 113	6 512 160	70,0	3,0	2,0	0,0	90,0	"Green house mode"	2,0
BE	Viljandi mnt 9b	602 415	6 511 897	70,0	3,0	2,0	0,0	90,0	"Green house mode"	2,0
BF	Kaare tee 7	602 611	6 512 222	70,0	3,0	2,0	0,0	90,0	"Green house mode"	2,0
BG	Kodutare tee 1	602 467	6 512 061	70,0	3,0	2,0	0,0	90,0	"Green house mode"	2,0
BH	Kodunurme tee 6	602 153	6 511 967	70,0	3,0	2,0	0,0	90,0	"Green house mode"	2,0
BI	Loigu	601 617	6 519 931	70,0	3,0	2,0	0,0	90,0	"Green house mode"	2,0
BJ	Väike-Nurga	606 845	6 525 658	75,8	3,0	2,0	0,0	90,0	"Green house mode"	2,0
BK	Kaeramaa/1	608 093	6 519 684	70,0	3,0	2,0	0,0	90,0	"Green house mode"	2,0
BL	Rendi/1	603 222	6 518 567	70,0	3,0	2,0	0,0	90,0	"Green house mode"	2,0
BM	Soosalu	609 874	6 520 527	70,0	3,0	2,0	0,0	90,0	"Green house mode"	2,0
BN	Hansualla	597 561	6 508 502	61,3	3,0	2,0	0,0	90,0	"Green house mode"	2,0
BO	Lepametsa/1	596 194	6 512 216	70,0	3,0	2,0	0,0	90,0	"Green house mode"	2,0
BP	Antsu tee 17	602 473	6 511 802	70,0	3,0	2,0	0,0	90,0	"Green house mode"	2,0
BQ	Epa-Hansu	600 202	6 515 779	70,0	3,0	2,0	0,0	90,0	"Green house mode"	2,0
BR	Sepa	601 754	6 520 305	70,0	3,0	2,0	0,0	90,0	"Green house mode"	2,0
BS	Lombi	607 323	6 525 495	75,2	3,0	2,0	0,0	90,0	"Green house mode"	2,0
BT	Viljandi mnt 9	602 352	6 511 828	70,0	3,0	2,0	0,0	90,0	"Green house mode"	2,0
BU	Ellavere	608 567	6 528 014	80,0	3,0	2,0	0,0	90,0	"Green house mode"	2,0
BV	H. Rebase tee 1	602 301	6 511 784	70,0	3,0	2,0	0,0	90,0	"Green house mode"	2,0
BW	Tungla	608 306	6 528 771	80,0	3,0	2,0	0,0	90,0	"Green house mode"	2,0
BX	Undiaugu	608 389	6 519 940	70,0	3,0	2,0	0,0	90,0	"Green house mode"	2,0
BY	Haaviku	599 884	6 513 511	70,0	3,0	2,0	0,0	90,0	"Green house mode"	2,0
BZ	Palsu-Nurga	613 668	6 522 004	70,0	3,0	2,0	0,0	90,0	"Green house mode"	2,0
CA	Kaare tee 2	602 518	6 512 236	70,0	3,0	2,0	0,0	90,0	"Green house mode"	2,0
CB	Raja	604 568	6 519 443	70,0	3,0	2,0	0,0	90,0	"Green house mode"	2,0
CC	Põllu	601 506	6 520 124	70,0	3,0	2,0	0,0	90,0	"Green house mode"	2,0
CD	Viljandi mnt 7/1	602 347	6 511 797	70,0	3,0	2,0	0,0	90,0	"Green house mode"	2,0
CE	Hansu	606 931	6 525 606	75,6	3,0	2,0	0,0	90,0	"Green house mode"	2,0

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SHADOW - Main Result

Calculation: varjutus_lõunaosa

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No.	Name	East	North	Z	Width	Height	Elevation a.g.l.	Slope of window	Direction mode	Eye height (ZVI) a.g.l.
				[m]	[m]	[m]	[m]	[°]		[m]
CF	Sigapusma	606 803	6 525 556	75,5	3,0	2,0	0,0	90,0	"Green house mode"	2,0
CG	Jaanimardi	606 918	6 525 665	75,8	3,0	2,0	0,0	90,0	"Green house mode"	2,0
CH	Markuse-Uuetoa	614 199	6 523 196	75,6	3,0	2,0	0,0	90,0	"Green house mode"	2,0
CI	Kodunurme tee 2	602 214	6 512 012	70,0	3,0	2,0	0,0	90,0	"Green house mode"	2,0
CJ	Kadastiku tee 2	602 170	6 511 596	69,1	3,0	2,0	0,0	90,0	"Green house mode"	2,0
CK	Sillaotsa	601 818	6 520 081	70,0	3,0	2,0	0,0	90,0	"Green house mode"	2,0
CL	Palsu	613 481	6 522 446	71,0	3,0	2,0	0,0	90,0	"Green house mode"	2,0
CM	Peetri	606 152	6 522 180	70,0	3,0	2,0	0,0	90,0	"Green house mode"	2,0
CN	Vändra	608 366	6 527 634	80,0	3,0	2,0	0,0	90,0	"Green house mode"	2,0
CO	Aru	612 937	6 525 966	79,0	3,0	2,0	0,0	90,0	"Green house mode"	2,0
CP	Papli	602 240	6 512 716	70,0	3,0	2,0	0,0	90,0	"Green house mode"	2,0
CQ	Magasi-Aida	602 253	6 512 726	70,0	3,0	2,0	0,0	90,0	"Green house mode"	2,0
CR	Viljandi mnt 15	602 366	6 512 040	70,0	3,0	2,0	0,0	90,0	"Green house mode"	2,0
CS	Ellavere-Peetri	607 426	6 526 525	77,9	3,0	2,0	0,0	90,0	"Green house mode"	2,0
CT	Sinsu/1	608 127	6 518 790	70,0	3,0	2,0	0,0	90,0	"Green house mode"	2,0
CU	Sinsu	608 076	6 518 815	70,0	3,0	2,0	0,0	90,0	"Green house mode"	2,0
CV	Umalasaare	602 284	6 516 467	70,0	3,0	2,0	0,0	90,0	"Green house mode"	2,0
CW	Lehise	603 022	6 514 068	70,0	3,0	2,0	0,0	90,0	"Green house mode"	2,0
CX	Kamseni tee 2	602 308	6 511 949	70,0	3,0	2,0	0,0	90,0	"Green house mode"	2,0
CY	Lepametsa	596 155	6 512 201	70,0	3,0	2,0	0,0	90,0	"Green house mode"	2,0
CZ	Timmu	599 996	6 514 134	70,0	3,0	2,0	0,0	90,0	"Green house mode"	2,0
DA	Viljapuuaia	607 950	6 527 828	80,0	3,0	2,0	0,0	90,0	"Green house mode"	2,0
DB	Viljandi mnt 7	602 341	6 511 753	69,9	3,0	2,0	0,0	90,0	"Green house mode"	2,0
DC	Kodunurme tee 8	602 110	6 511 967	70,0	3,0	2,0	0,0	90,0	"Green house mode"	2,0
DD	Luha	607 296	6 525 491	75,2	3,0	2,0	0,0	90,0	"Green house mode"	2,0
DE	H. Rebase tee 4	602 180	6 511 848	70,0	3,0	2,0	0,0	90,0	"Green house mode"	2,0
DF	Jaama	613 868	6 525 413	80,0	3,0	2,0	0,0	90,0	"Green house mode"	2,0
DG	Nurme	608 918	6 522 249	70,0	3,0	2,0	0,0	90,0	"Green house mode"	2,0
DH	Kiigevere tee 5/2	602 413	6 511 585	69,2	3,0	2,0	0,0	90,0	"Green house mode"	2,0
DI	Kiigevere tee 4	602 384	6 511 645	69,4	3,0	2,0	0,0	90,0	"Green house mode"	2,0
DJ	Kiigevere tee 6	602 440	6 511 638	69,5	3,0	2,0	0,0	90,0	"Green house mode"	2,0
DK	Kaeramaa	608 057	6 519 711	70,0	3,0	2,0	0,0	90,0	"Green house mode"	2,0
DL	Paiaristi	602 328	6 513 124	70,0	3,0	2,0	0,0	90,0	"Green house mode"	2,0
DM	Kõrtsi	602 194	6 513 485	70,0	3,0	2,0	0,0	90,0	"Green house mode"	2,0
DN	Palsu	613 386	6 522 420	70,7	3,0	2,0	0,0	90,0	"Green house mode"	2,0
DO	Kamseni tee 6	602 075	6 512 122	70,0	3,0	2,0	0,0	90,0	"Green house mode"	2,0
DP	Uuesauna	601 833	6 519 368	70,0	3,0	2,0	0,0	90,0	"Green house mode"	2,0
DQ	Kiigevere tee 5	602 415	6 511 541	69,0	3,0	2,0	0,0	90,0	"Green house mode"	2,0
DR	Kase	602 532	6 513 220	70,0	3,0	2,0	0,0	90,0	"Green house mode"	2,0
DS	Kamseni tee 4	602 109	6 512 092	70,0	3,0	2,0	0,0	90,0	"Green house mode"	2,0
DT	Kase	602 529	6 515 706	70,0	3,0	2,0	0,0	90,0	"Green house mode"	2,0
DU	Nurme tee 4	602 241	6 512 143	70,0	3,0	2,0	0,0	90,0	"Green house mode"	2,0
DV	Lõugu	607 023	6 525 638	75,7	3,0	2,0	0,0	90,0	"Green house mode"	2,0
DW	Välja	604 000	6 517 802	70,0	3,0	2,0	0,0	90,0	"Green house mode"	2,0
DX	Ristisaare	598 984	6 510 593	64,2	3,0	2,0	0,0	90,0	"Green house mode"	2,0
DY	Kaasiku	601 739	6 518 864	70,0	3,0	2,0	0,0	90,0	"Green house mode"	2,0
DZ	Korni	607 861	6 527 509	79,8	3,0	2,0	0,0	90,0	"Green house mode"	2,0
EA	Kiigevere tee 8	602 482	6 511 632	69,5	3,0	2,0	0,0	90,0	"Green house mode"	2,0
EB	Viljandi mnt 13	602 355	6 511 972	70,0	3,0	2,0	0,0	90,0	"Green house mode"	2,0
EC	Kõrtsi	601 681	6 519 929	70,0	3,0	2,0	0,0	90,0	"Green house mode"	2,0
ED	Kesa	597 264	6 508 194	61,2	3,0	2,0	0,0	90,0	"Green house mode"	2,0

Calculation Results

Shadow receptor

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]
A	Mikutooma	12:21	35	0:27	1:46
B	Otsa	11:17	34	0:26	1:38
C	Kadastiku tee 1	51:39	89	0:40	13:56
D	Tiigi	16:30	40	0:32	2:54
E	Rätsepa	103:53	160	1:00	27:26

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SHADOW - Main Result

Calculation: varjutus_lõunaosa

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No.	Name	Shadow, worst case		Max shadow hours per day [h/day]	Shadow, expected values	
		Shadow hours per year [h/year]	Shadow days per year [days/year]		Shadow hours per year [h/year]	Shadow hours per year [h/year]
F	Kadaka	35:47	90	0:36	6:06	
G	Simmuni	0:00	0	0:00	0:00	
H	Harjaku	0:00	0	0:00	0:00	
I	Mõmmimäe tee 2	33:21	97	0:27	8:51	
J	Mihkle	0:00	0	0:00	0:00	
K	Valgepea	22:18	46	0:37	4:24	
L	Kikevere	41:53	76	0:43	4:09	
M	Antsu tee 4	42:05	123	0:28	11:21	
N	Uustalu-Metsa	10:34	32	0:25	1:30	
O	Jõeäärse	0:00	0	0:00	0:00	
P	Pargi	0:00	0	0:00	0:00	
Q	H. Rebase tee 2	32:02	86	0:34	8:31	
R	Sepa	85:01	230	0:30	17:35	
S	Rukkilille	41:33	103	0:32	11:11	
T	Roode	0:00	0	0:00	0:00	
U	Hermani	19:39	44	0:34	3:09	
V	Uuesauna	58:52	166	0:31	12:58	
W	Tuljaku tee 1	20:30	58	0:28	5:37	
X	Tuljaku tee 5	24:07	68	0:28	6:41	
Y	Salu	68:52	120	0:58	17:58	
Z	Tuljaku tee 7	26:02	79	0:28	7:15	
AA	H. Rebase tee 6	30:24	75	0:37	8:02	
AB	Pika-Reinu	0:00	0	0:00	0:00	
AC	Viljandi mnt 11	43:14	107	0:30	11:42	
AD	Kiigevere tee 5/1	17:50	51	0:27	4:44	
AE	Antsu tee 15	41:39	109	0:28	11:18	
AF	Sandre	67:05	144	0:51	18:06	
AG	Nurme tee 2	58:02	122	0:34	15:28	
AH	Kamseni tee 1	48:29	113	0:31	13:05	
AI	Kingu	13:24	42	0:25	3:28	
AJ	Peetre	12:21	36	0:27	1:43	
AK	Neeme	0:00	0	0:00	0:00	
AL	Miku	30:47	82	0:32	4:42	
AM	Tänavotsa	11:57	36	0:26	1:40	
AN	Laane-Madise	0:00	0	0:00	0:00	
AO	Rehemetsa	34:25	55	0:58	4:56	
AP	Mäeotsa/1	82:48	219	0:35	17:13	
AQ	Pärna	10:20	34	0:24	1:26	
AR	Toominga	0:00	0	0:00	0:00	
AS	Viljandi mnt 3	27:32	84	0:30	7:18	
AT	Mäeotsa	75:44	185	0:39	17:49	
AU	Lillemäe	15:36	47	0:26	4:10	
AV	Mõisamaa	0:00	0	0:00	0:00	
AW	Reinu	12:45	36	0:28	2:51	
AX	Rendi	0:00	0	0:00	0:00	
AY	Hundiaugu	14:07	42	0:27	3:37	
AZ	Vana-Kubja	0:00	0	0:00	0:00	
BA	Uue-Kaasiku	0:00	0	0:00	0:00	
BB	Kangru	128:00	214	1:02	16:38	
BC	Teeääre	55:31	123	0:40	7:43	
BD	Kamseni tee 5	72:27	138	0:50	19:04	
BE	Viljandi mnt 9b	43:41	110	0:29	11:50	
BF	Kaare tee 7	26:09	77	0:26	6:27	
BG	Kodutare tee 1	40:16	117	0:28	10:46	
BH	Kodunurme tee 6	41:53	100	0:36	11:12	
BI	Loigu	14:36	38	0:30	3:04	
BJ	Väike-Nurga	0:00	0	0:00	0:00	
BK	Kaeramaa/1	51:55	100	0:39	13:45	
BL	Rendi/1	0:00	0	0:00	0:00	
BM	Soosalu	18:54	51	0:29	4:57	
BN	Hansualla	0:00	0	0:00	0:00	
BO	Lepametsa/1	44:34	115	0:34	4:49	
BP	Antsu tee 17	38:52	103	0:28	10:31	

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SHADOW - Main Result

Calculation: varjutus_lõunaosa

...continued from previous page

No.	Name	Shadow, worst case		Max shadow hours per day [h/day]	Shadow, expected values	
		Shadow hours per year [h/year]	Shadow days per year [days/year]		Shadow hours per year [h/year]	Shadow hours
BQ	Epa-Hansu	15:15	39	0:31	2:34	
BR	Sepa	15:35	40	0:30	2:23	
BS	Lombi	13:04	36	0:28	1:54	
BT	Viljandi mnt 9	38:06	100	0:30	10:15	
BU	Ellavere	109:18	300	0:32	19:35	
BV	H. Rebase tee 1	32:20	89	0:32	8:37	
BW	Tungla	22:45	67	0:28	4:18	
BX	Undiaugu	58:49	120	0:45	15:51	
BY	Haaviku	119:21	234	1:07	17:32	
BZ	Palsu-Nurga	54:29	122	0:43	12:58	
CA	Kaare tee 2	30:20	87	0:28	7:33	
CB	Raja	111:27	219	0:44	21:36	
CC	Põllu	11:56	34	0:27	2:09	
CD	Viljandi mnt 7/1	35:40	96	0:30	9:34	
CE	Hansu	0:00	0	0:00	0:00	
CF	Sigapusma	0:00	0	0:00	0:00	
CG	Jaanimardi	0:00	0	0:00	0:00	
CH	Markuse-Uuetoa	87:31	159	0:56	10:01	
CI	Kodunurme tee 2	48:56	109	0:34	13:08	
CJ	Kadastiku tee 2	40:28	96	0:34	10:56	
CK	Sillaotsa	18:21	42	0:33	3:19	
CL	Palsu	16:35	40	0:32	3:22	
CM	Peetri	53:48	121	0:40	7:40	
CN	Vändra	52:49	149	0:29	9:31	
CO	Aru	61:21	120	0:51	14:41	
CP	Papli	69:28	155	0:35	17:05	
CQ	Magasi-Aida	70:05	157	0:35	17:15	
CR	Viljandi mnt 15	50:30	122	0:30	13:34	
CS	Ellavere-Peetri	0:00	0	0:00	0:00	
CT	Sinsu/1	0:00	0	0:00	0:00	
CU	Sinsu	0:00	0	0:00	0:00	
CV	Umalasaare	23:41	60	0:31	2:04	
CW	Lehise	10:30	32	0:25	2:31	
CX	Kamseni tee 2	46:10	110	0:32	12:28	
CY	Lepametsa	41:20	108	0:33	4:36	
CZ	Timmu	73:45	179	0:34	9:51	
DA	Viljapuuai	0:00	0	0:00	0:00	
DB	Viljandi mnt 7	31:39	89	0:30	8:26	
DC	Kodunurme tee 8	39:23	94	0:37	10:30	
DD	Luha	12:36	36	0:27	1:50	
DE	H. Rebase tee 4	31:25	83	0:35	8:20	
DF	Jaama	0:00	0	0:00	0:00	
DG	Nurme	91:53	151	0:59	9:26	
DH	Kiigevere tee 5/2	19:02	53	0:29	5:03	
DI	Kiigevere tee 4	24:58	80	0:29	6:35	
DJ	Kiigevere tee 6	17:17	48	0:28	4:29	
DK	Kaeramaa	55:22	102	0:40	14:35	
DL	Paiaristi	50:56	130	0:33	11:01	
DM	Kõrtsi	55:19	129	0:37	12:23	
DN	Palsu	14:39	38	0:30	3:03	
DO	Kamseni tee 6	67:45	128	0:54	17:51	
DP	Uuesauna	25:31	55	0:36	6:40	
DQ	Kiigevere tee 5	19:45	55	0:28	5:20	
DR	Kase	46:05	124	0:29	11:33	
DS	Kamseni tee 4	65:00	125	0:54	17:11	
DT	Kase	22:45	47	0:37	4:11	
DU	Nurme tee 4	58:37	126	0:33	15:33	
DV	Lõugu	0:00	0	0:00	0:00	
DW	Välja	34:44	89	0:30	9:14	
DX	Ristisaare	136:38	272	1:03	28:01	
DY	Kaasiku	35:34	82	0:30	9:31	
DZ	Korni	0:00	0	0:00	0:00	
EA	Kiigevere tee 8	16:14	46	0:27	4:12	

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SHADOW - Main Result

Calculation: varjutus_lõunaosa

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No.	Name	Shadow, worst case		Max shadow hours per day [h/day]	Shadow, expected values	
		Shadow hours per year [h/year]	Shadow days per year [days/year]		Shadow hours per year [h/year]	Shadow hours per year [h/year]
	EB Viljandi mnt 13	47:55	115	0:31	12:56	
	EC Kõrtsi	15:54	39	0:31	3:20	
	ED Kesa	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	TU5	43:00	9:30
1-1	1	29:58	5:11
1-11	11	13:29	2:28
1-13	13	98:08	12:01
1-14	14	108:59	15:54
1-15	15	26:43	3:30
1-16	16	0:00	0:00
1-2	2	18:39	4:48
1-3	3	42:44	10:49
1-4	4	34:59	9:22
1-5	5	0:00	0:00
1-8	8	34:37	3:00
1-9	9	0:00	0:00
10	TU5	0:00	0:00
11	TU5	0:00	0:00
12	TU5	0:00	0:00
13	TU5	0:00	0:00
14	TU5	74:18	7:59
15	TU5	25:01	3:25
16	TU5	0:00	0:00
17	TU5	0:00	0:00
18	TU5	22:43	5:32
19	TU5	25:00	4:22
2	TU5	0:00	0:00
20	TU5	0:00	0:00
21	TU5	0:00	0:00
22	TU5	0:00	0:00
23	TU5	0:00	0:00
24	TU5	0:00	0:00
25	TU5	0:00	0:00
26	TU5	0:00	0:00
27	TU5	0:00	0:00
28	TU5	0:00	0:00
29	TU5	0:00	0:00
3	TU5	69:47	18:07
30	TU5	67:19	15:22
3a-1	1	104:21	14:14
3a-2	2	82:40	21:09
3b-1	1	136:13	32:59
3b-2	2	81:19	9:25
3b-3	3	206:37	47:39
3b-4	4	194:42	44:06
3c-1	1	30:22	2:29
3c-10	10	0:00	0:00
3c-2	2	21:13	4:03
3c-3	3	59:50	9:49
3c-4	4	24:13	3:28
3c-5	5	0:00	0:00
3c-6	6	78:55	18:02
3c-7	7	52:56	14:35
3c-8	8	29:25	7:26
3c-9	9	9:47	1:47
4	TU5	29:31	5:26
5	TU5	9:21	1:53
6	TU5	0:00	0:00

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SHADOW - Main Result

Calculation: varjutus_lõunaosa

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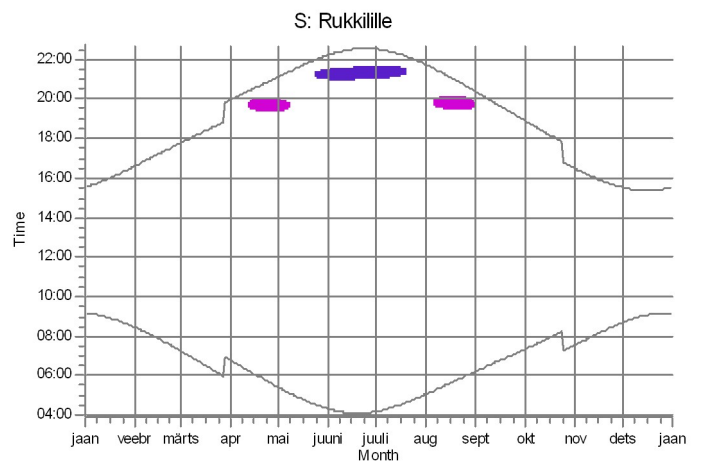
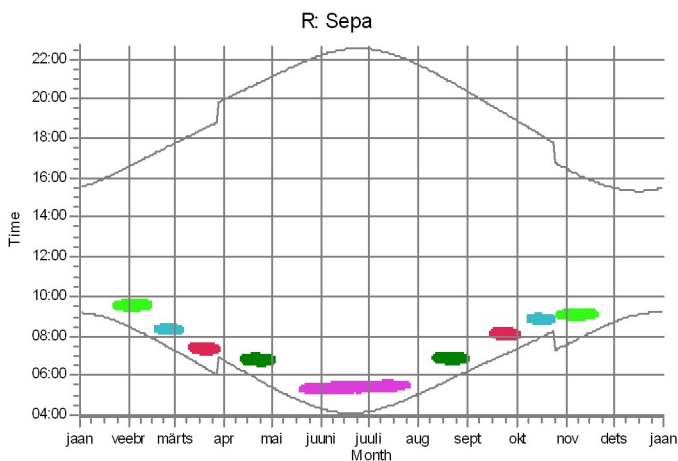
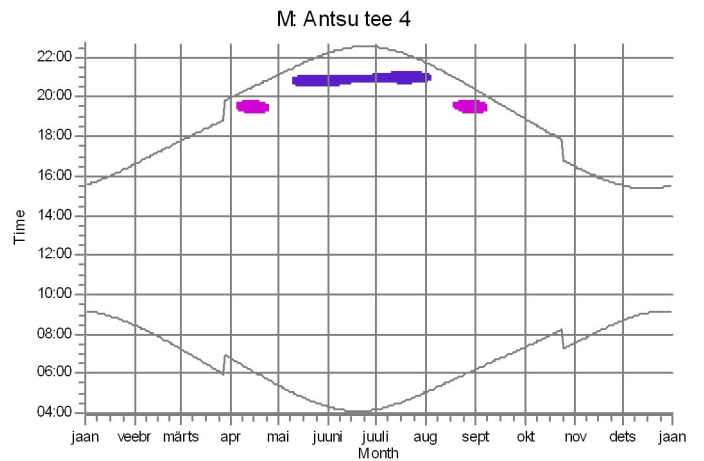
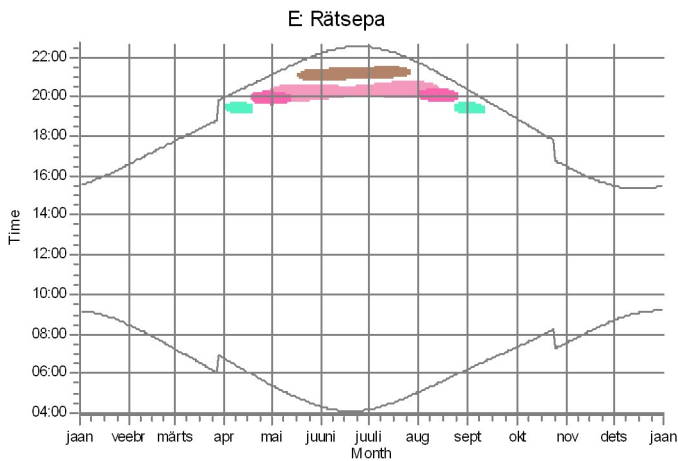
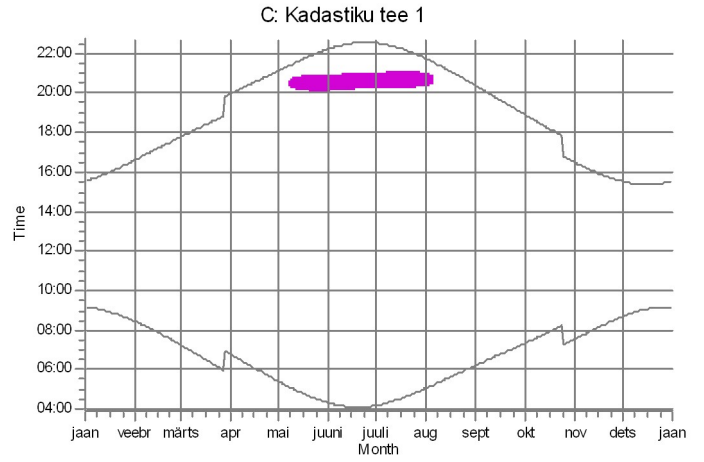
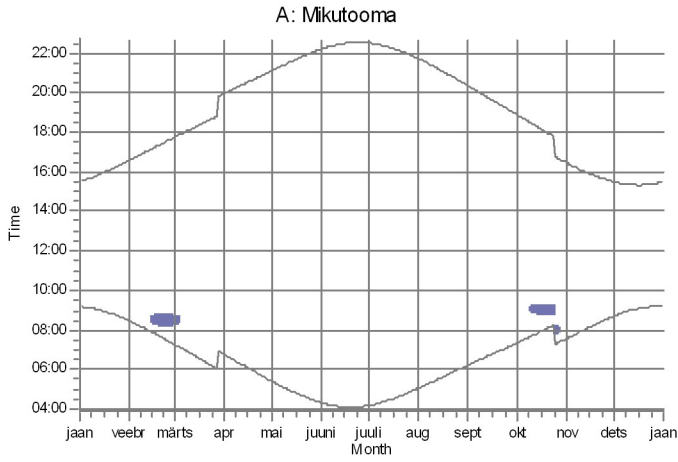
No.	Name	Worst case [h/year]	Expected [h/year]
6-1	1	10:06	2:28
6-2	2	80:39	21:04
6-3	3	38:31	6:57
6-4	4	127:38	25:25
6-5	5	51:25	9:55
6-6	6	43:48	4:57
6-7	7	38:07	10:30
6-8	8	28:06	4:03
6-9	9	71:43	16:49
7	TU5	0:00	0:00
7-1	1	51:24	12:27
7-2	2	168:55	36:17
7-3	3	0:00	0:00
8	TU5	19:26	2:47
8-1	1	65:19	12:33
8-2	2	22:04	4:10
8-3	3	12:50	1:55
8-4	4	0:00	0:00
9	TU5	0:00	0:00

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 - Calendar, graphical

Calculation: varjutus_lõunaosa

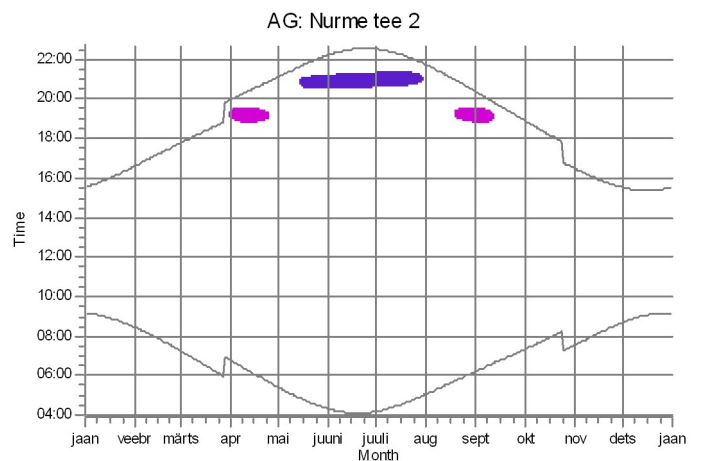
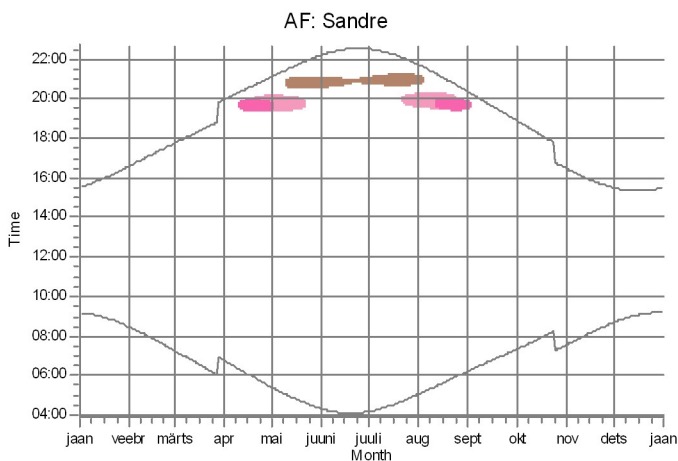
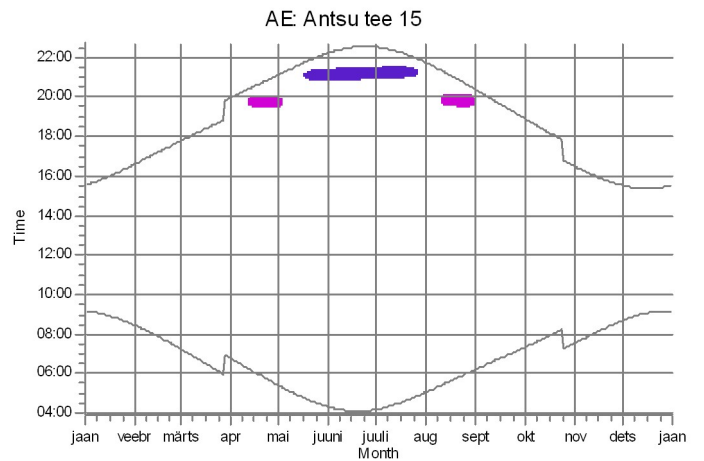
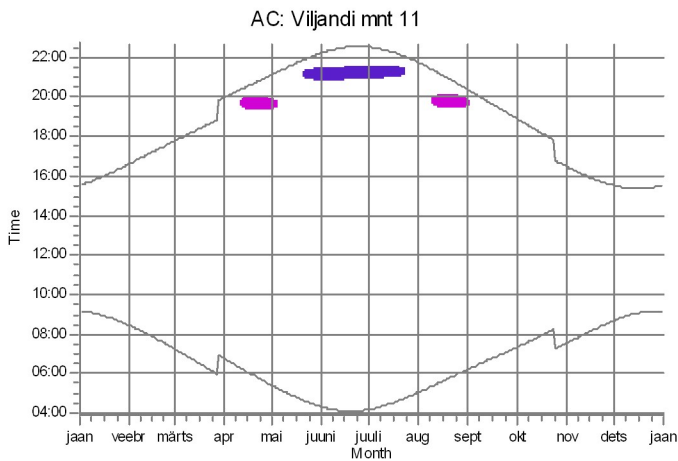
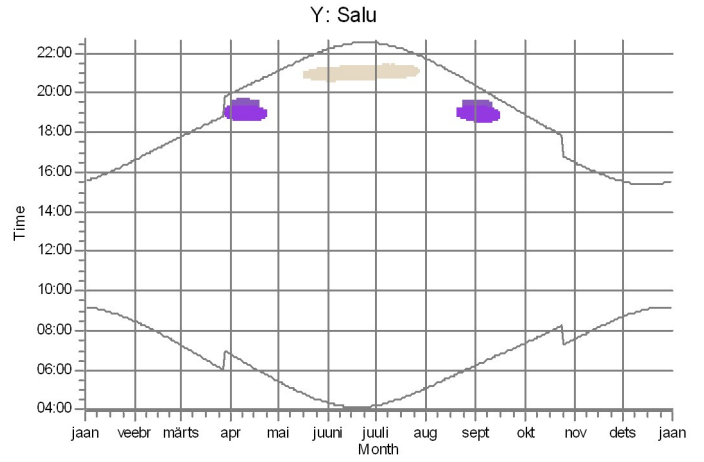
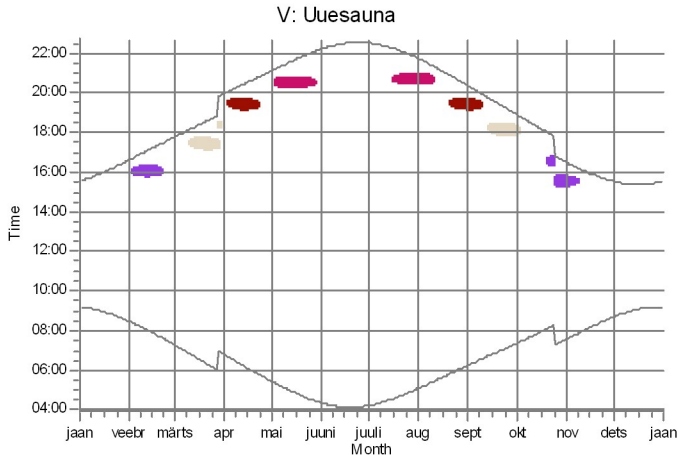


WTGs



SHADOW - Calendar, graphical

Calculation: varjutus_lõunaosa

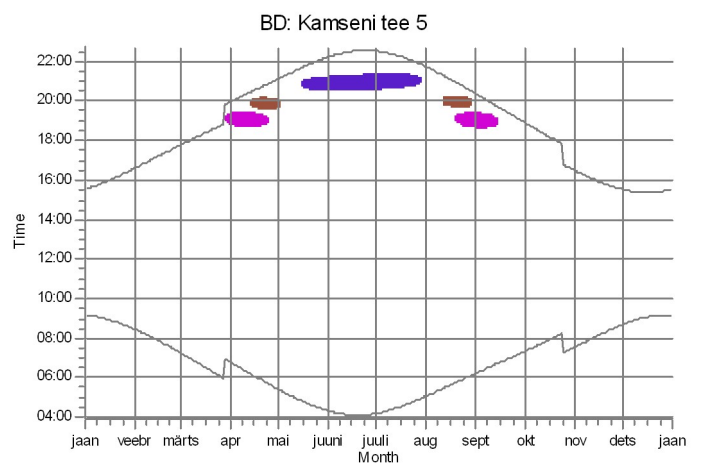
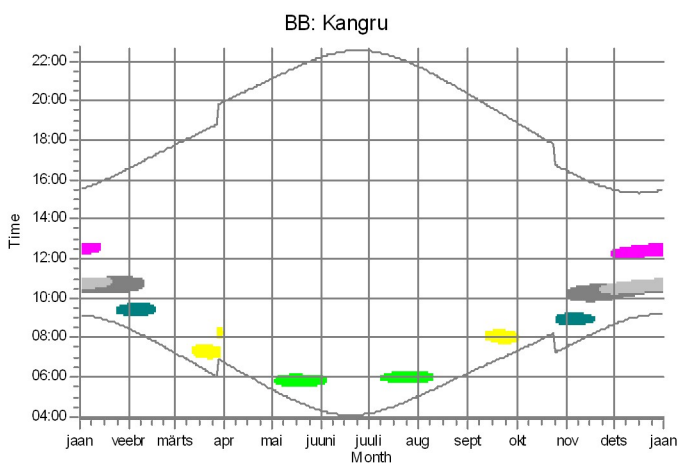
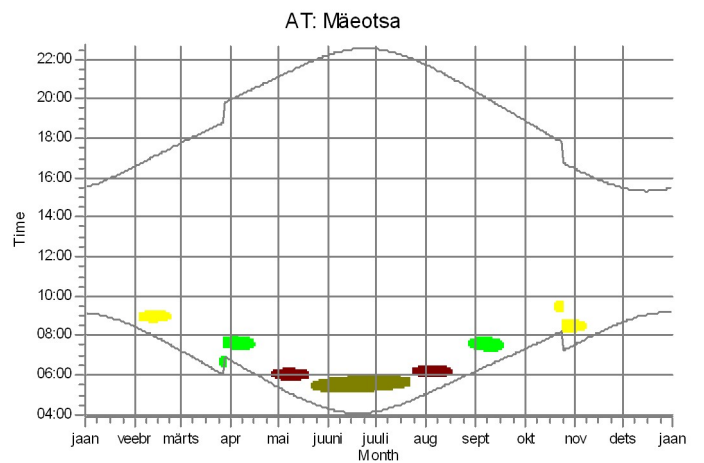
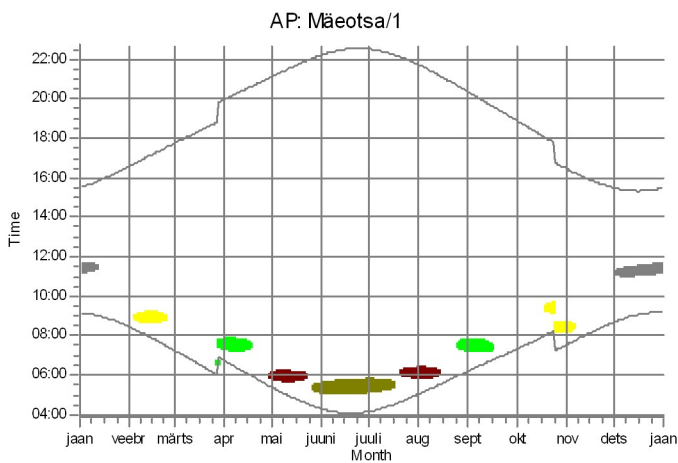
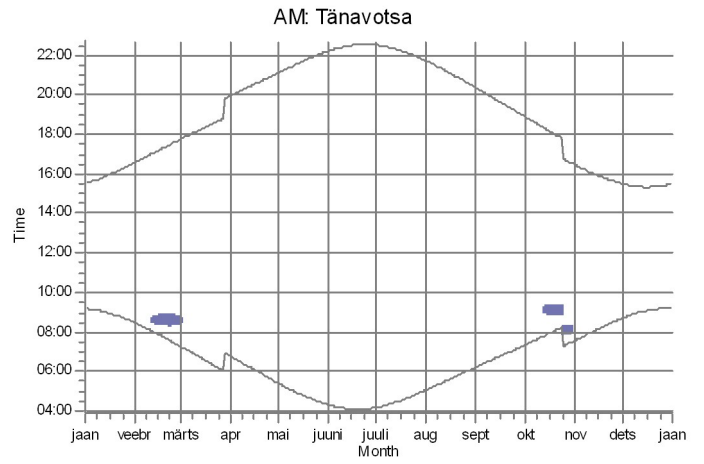
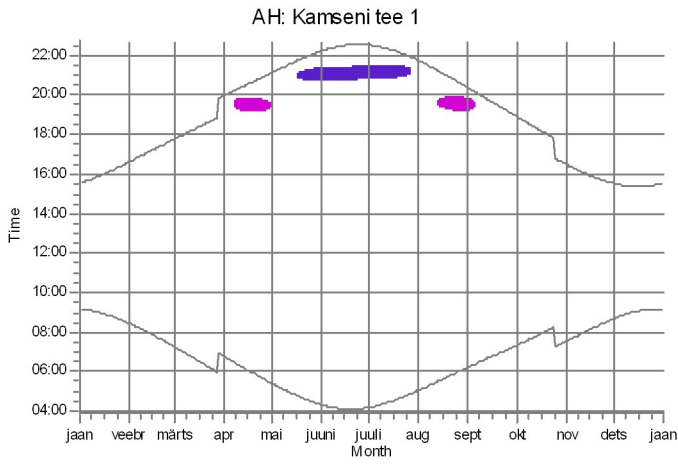


WTGs

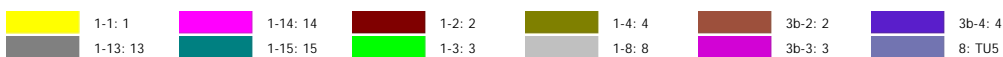


SHADOW - Calendar, graphical

Calculation: varjutus_lõunaosa



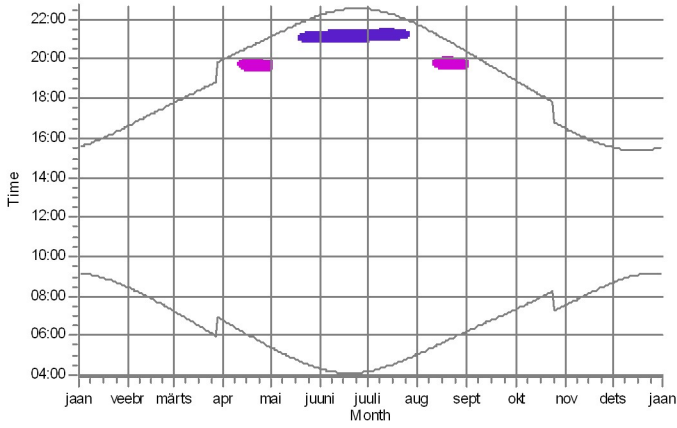
WTGs



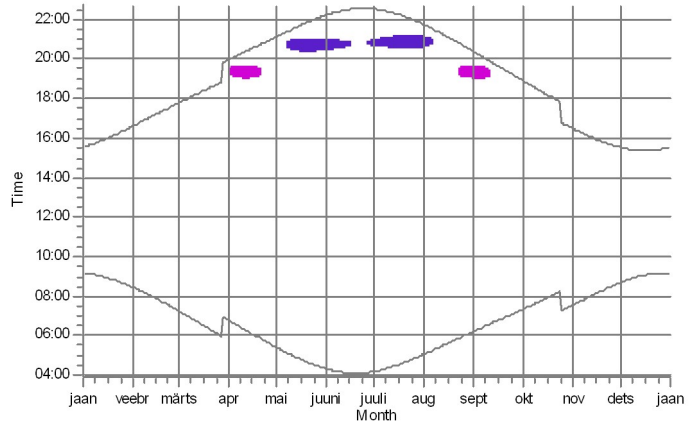
SHADOW - Calendar, graphical

Calculation: varjutus_lõunaosa

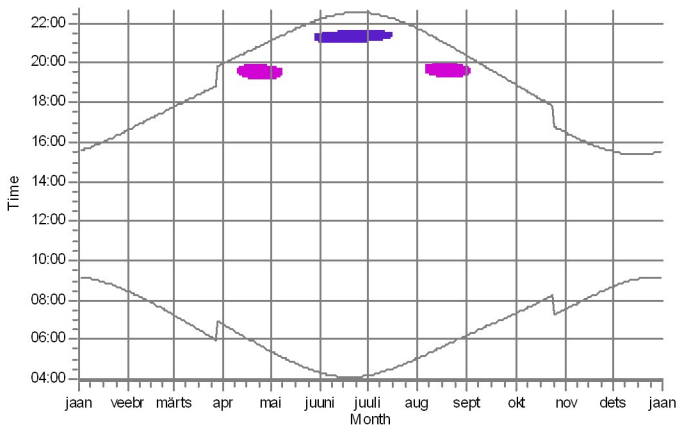
BE: Viljandi mnt 9b



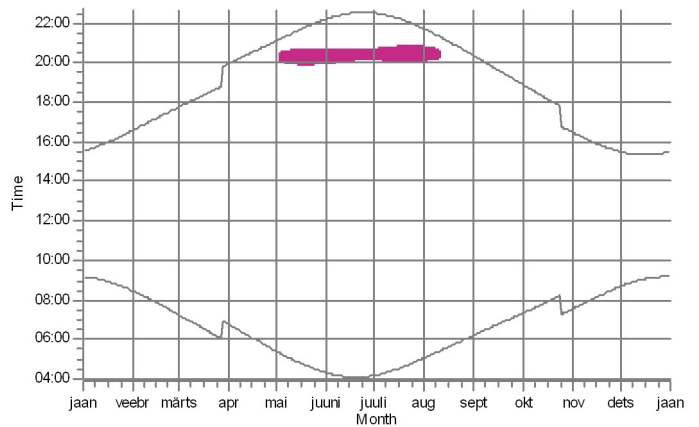
BG: Kodutare tee 1



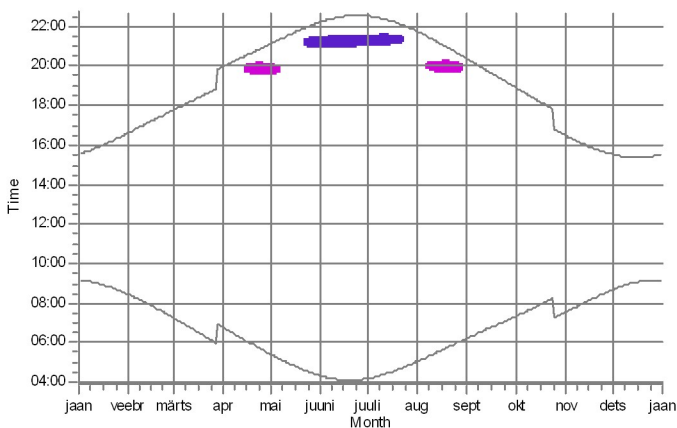
BH: Kodunurme tee 6



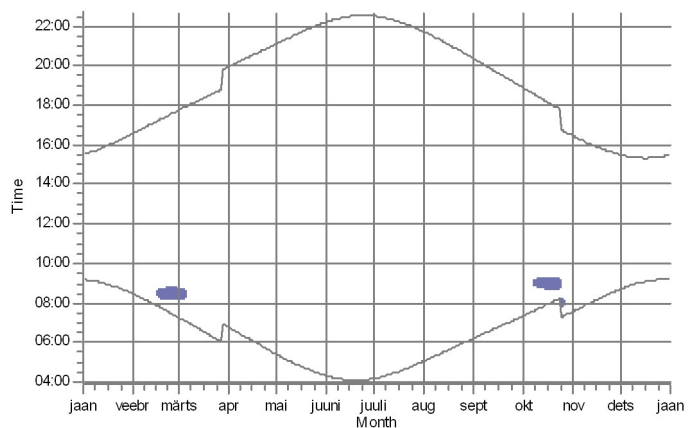
BK: Kaeramaa/1



BP: Antsu tee 17



BS: Lombi

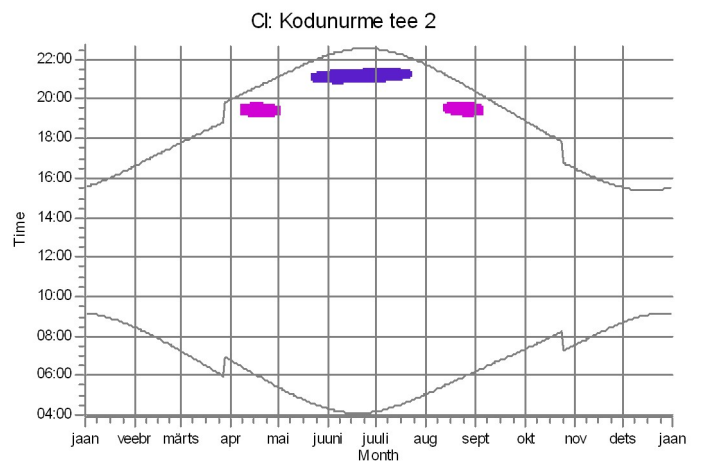
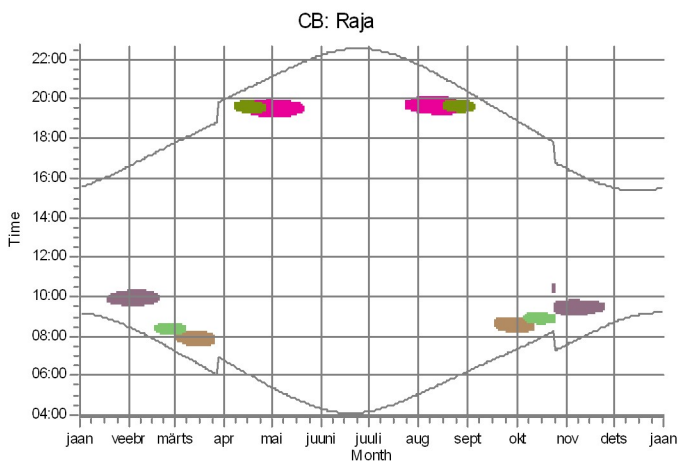
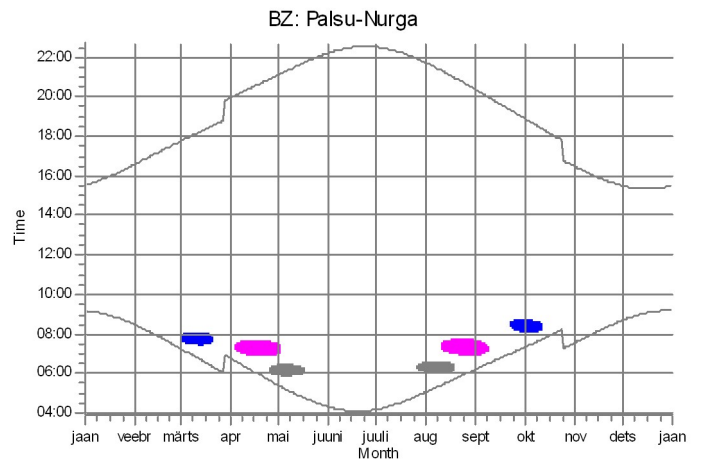
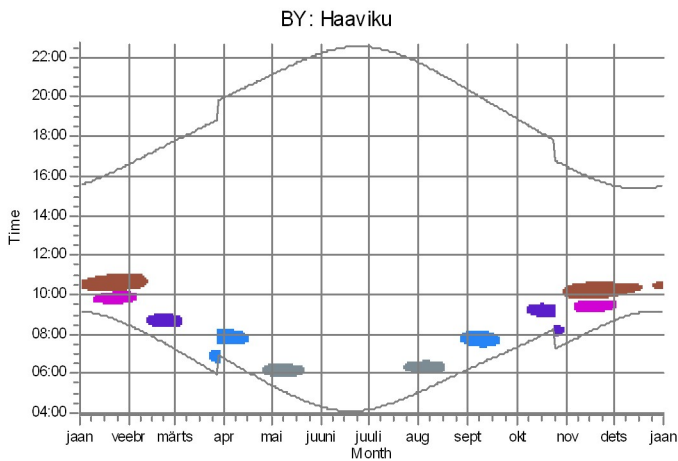
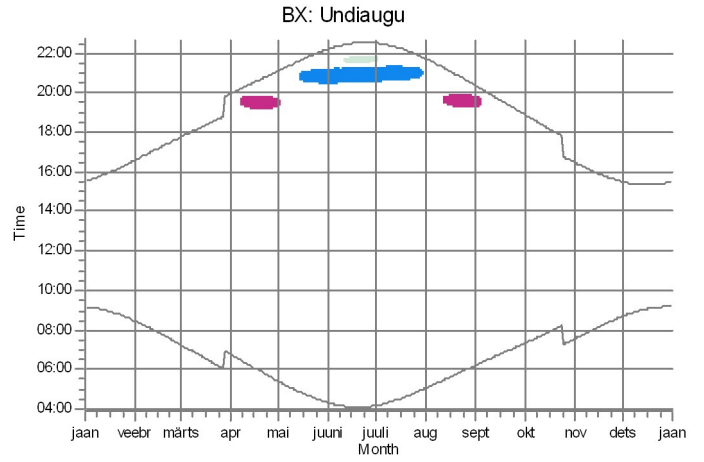
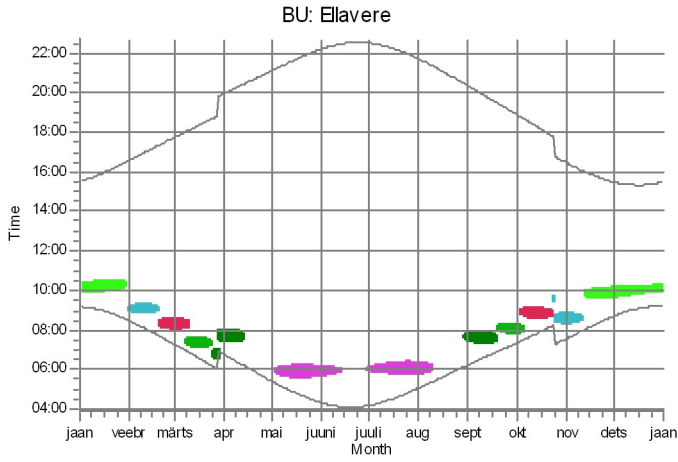


WTGs



SHADOW - Calendar, graphical

Calculation: varjutus_lõunaosa

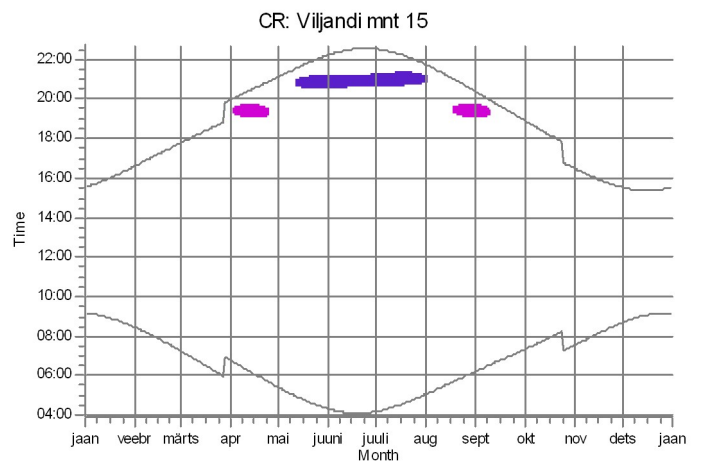
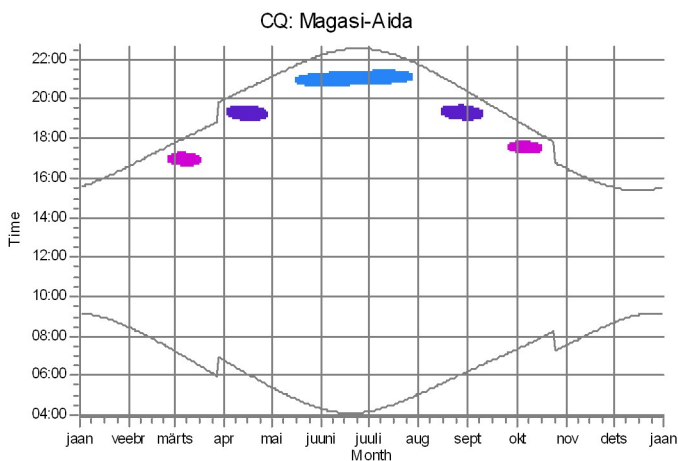
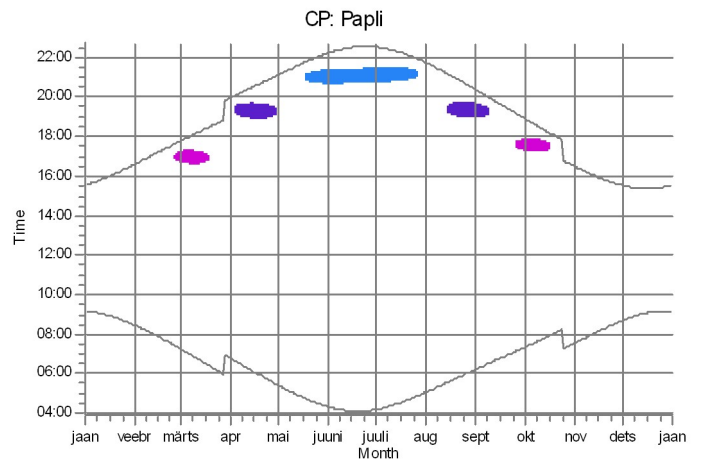
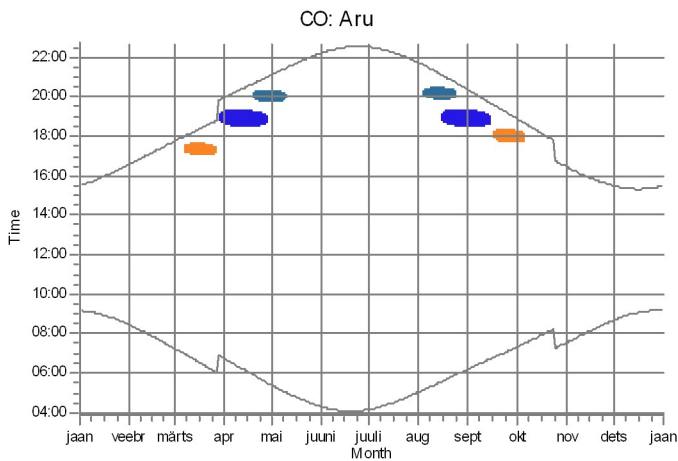
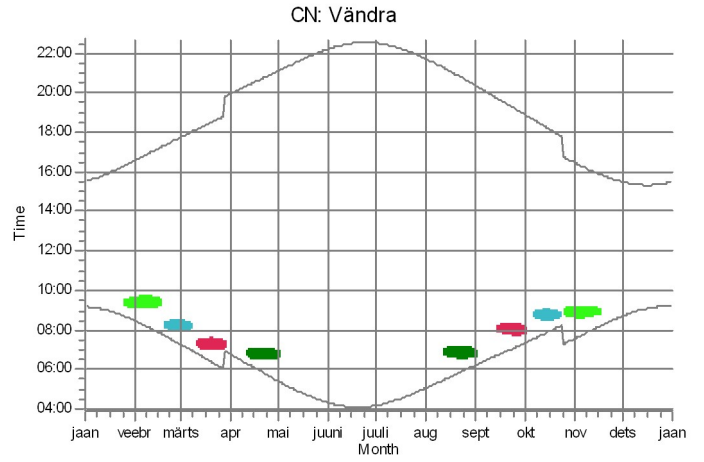
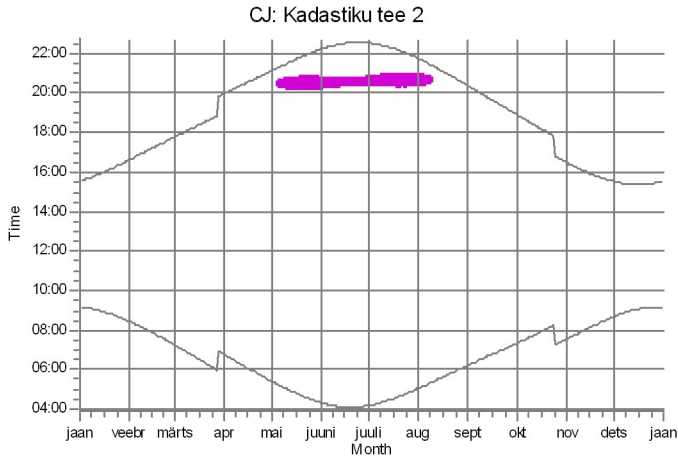


WTGs



SHADOW - Calendar, graphical

Calculation: varjutus_lõunaosa

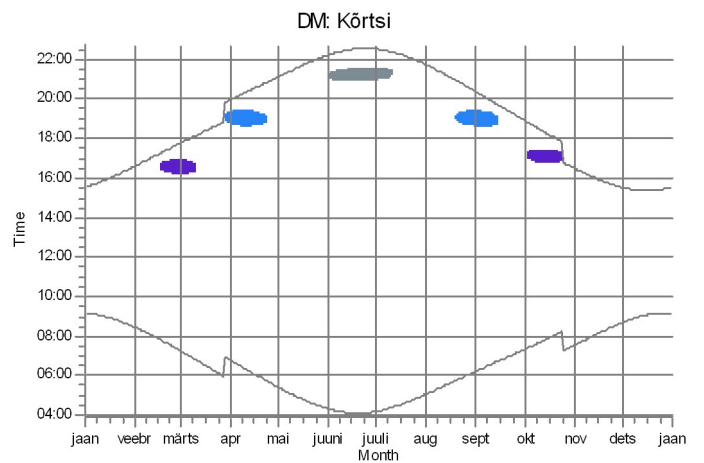
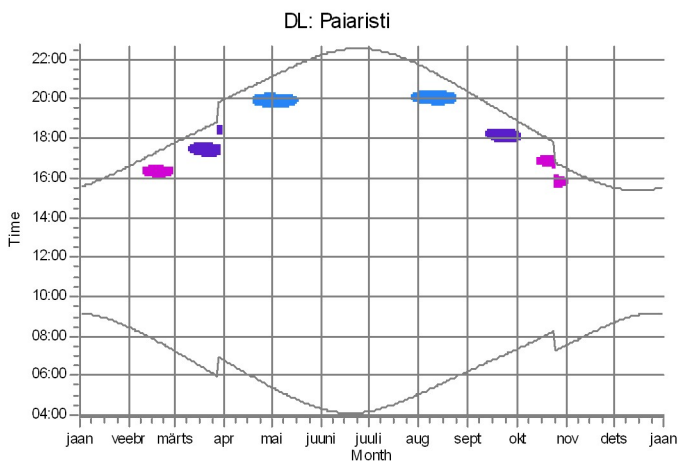
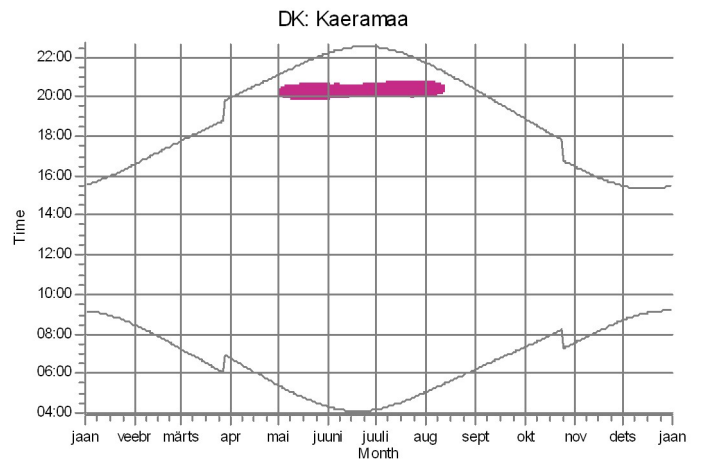
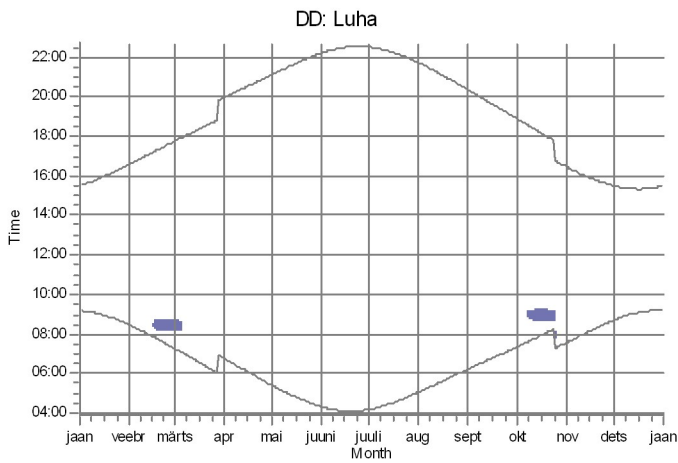
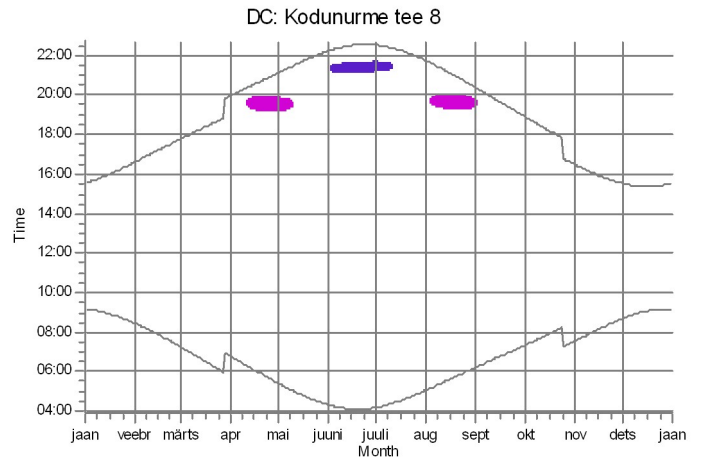
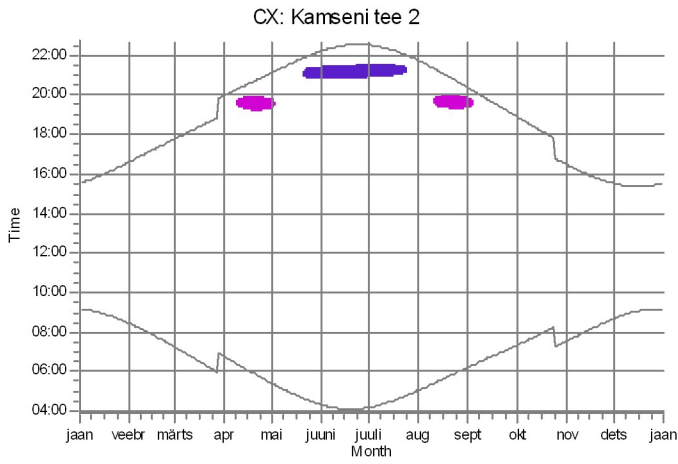


WTGs



SHADOW - Calendar, graphical

Calculation: varjutus_lõunaosa

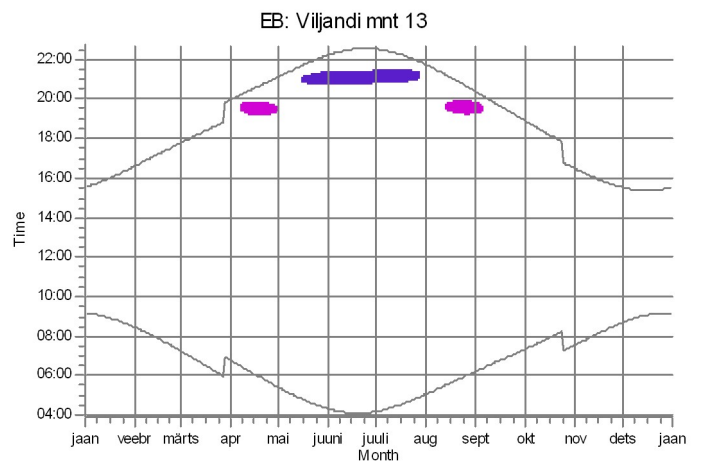
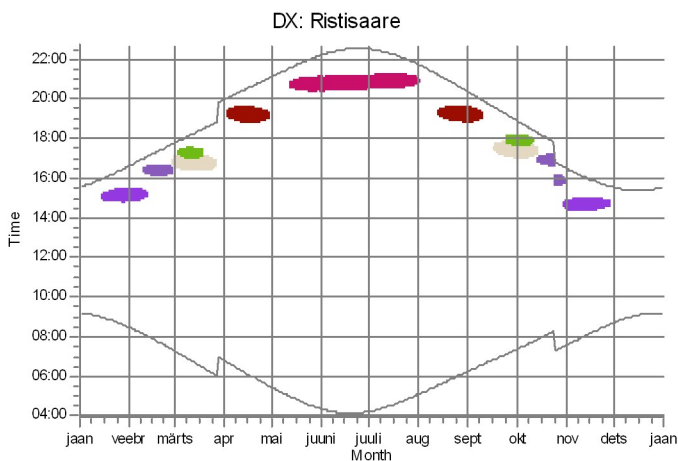
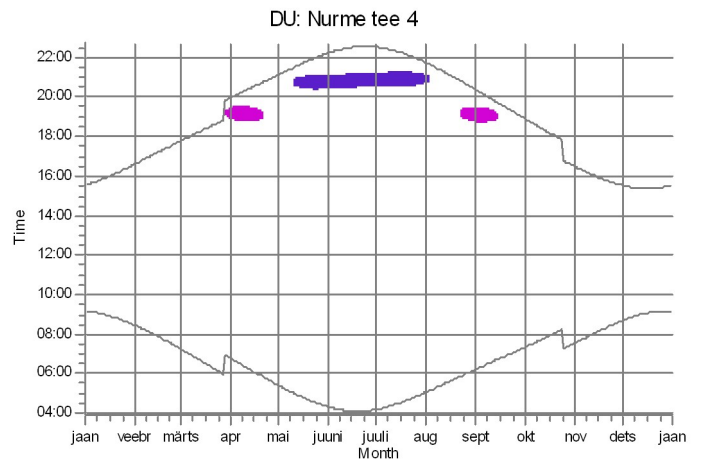
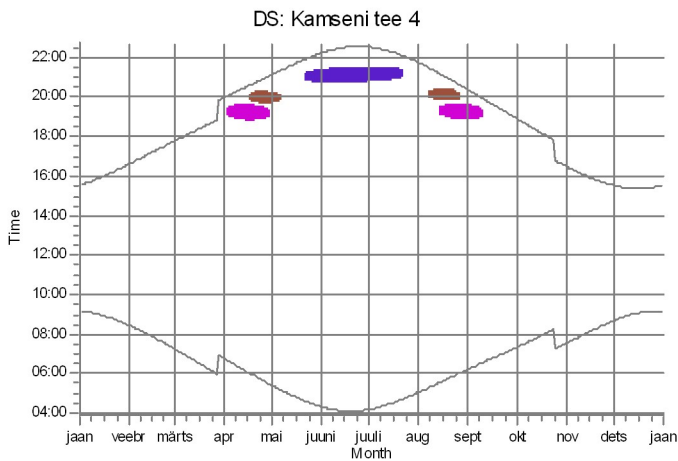
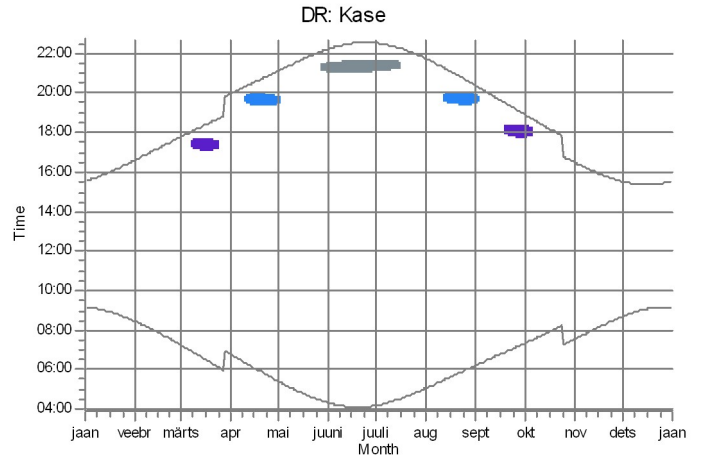
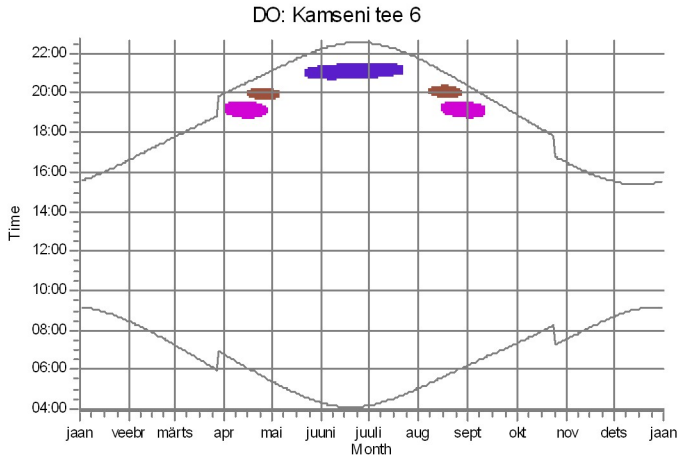


WTGs

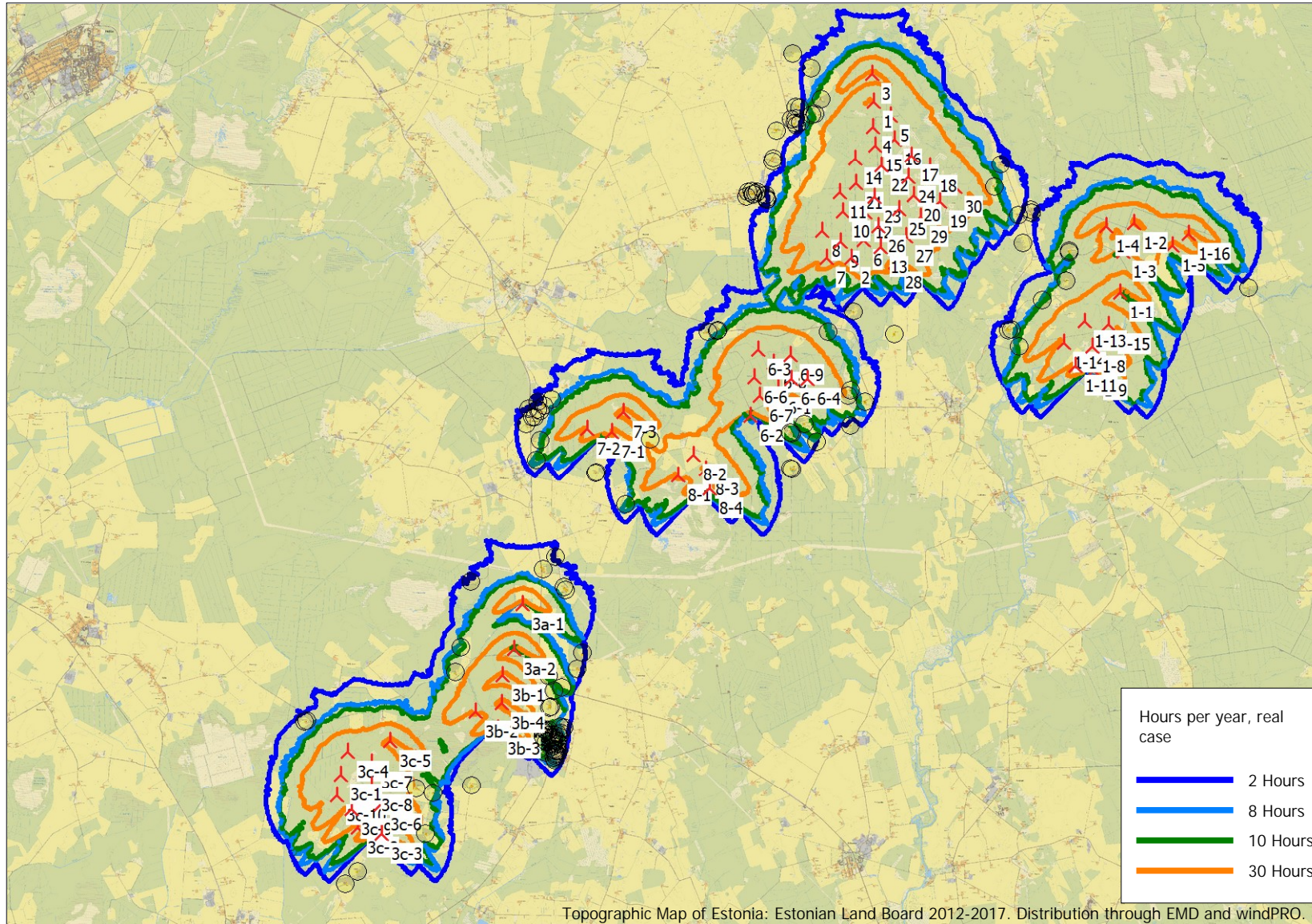


SHADOW - Calendar, graphical

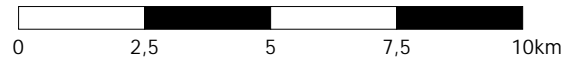
Calculation: varjutus_lõunaosa



WTGs		WTGs		WTGs	
	3a-2: 2		3b-2: 2		3b-4: 4
	3b-1: 1		3b-3: 3		3c-3: 3
			3c-2: 2		3c-6: 6
			3c-7: 7		3c-8: 8
			3c-9: 9		



Topographic Map of Estonia: Estonian Land Board 2012-2017. Distribution through EMD and windPRO.



Map: Estonian Topographic Map, Print scale 1:150 000, Map center Estonian Lambert L-EST97-EST97 (EE) East: 605 133 North: 6 519 180

New WTG

Shadow receptor

Flicker map level: Height Contours: CONTOURLINE_ONLINEDATA_4.wpo (12)

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

Hours per year, real case

- 2 Hours
- 8 Hours
- 10 Hours
- 30 Hours

**SHADOW -
Map**
Calculation:
varjutus_lõunaosa

Licensed user:

Lemma OÜ
Värvi 5 - A308
EE-10621 Tallinn
+3725059914
Piret Toonpere / piret@lemma.ee
Calculated:
02.09.2024 08:05/4.0.547