

Tekniska data mm för vindkraftanläggning på ~~Norra-Skrävlinge~~ ^{Gissleberga 1:1 / R&B} FG 1:1 ^{123-2007: 20}

Ärende:	Uppförande av 1 st vindkraftverk med tillhörande transformatoranläggning, vägbyggnation till verk samt ledningsdragning till verk. EON Elnät Sverige AB
Verkets läge :	ca 1km väster om Teckomatorp Bilaga 2 Rikets nät: Ö 1 328 490 N 6 295 978
Storlek:	Generatoreffekt 2MW
Tornhöjd:	78 - 98 meter
Rotordiameter:	82 - 90 meter
Totalhöjd:	119 - 143 meter
Källljud:	104 db(A)
Skuggbelastning:	Bilaga 3
Ljudberäkning:	Bilaga 4
Rådighet till mark:	genom arrende
Årsproduktion prel:	ca 5 546 MWh Bilaga 5
Produktblad:	Enercon E-82 Bilaga 6
Vindkraftremisser:	Sändlista Bilaga 7
Fotomontage	från Gissleberga Gård sett Bilaga 8

Anmälan enligt Miljöbalken skickas separat.

Project: Gissleberga	Description: OBS! Detta är en beräkning baserad på data från garanterad källjudsnivå. Vänligen notera att vi ej tagit hänsyn till eventuella höjdskillnader i området.	Printed Page: 2007.01.29 13:52 / 1
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		Calculated: 2007.01.29 13:52/2.5.4.70

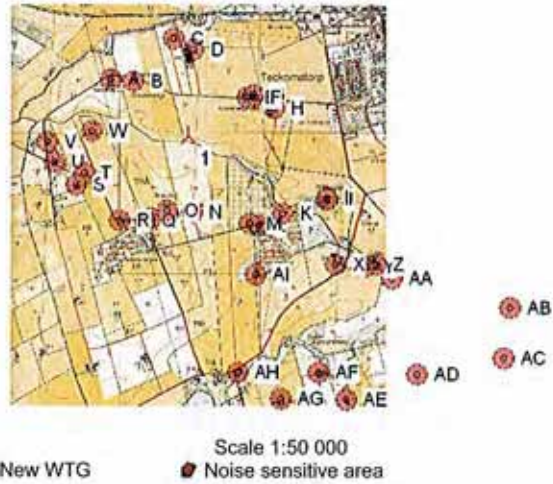
DECIBEL - Main Result

Calculation: 2007-01-29

SVENSKA BESTÄMMELSER FÖR EXTERNT BULLER FRÅN LANDBASEREDE VINDKRAFTVERK

Beräkningen är baserad på den av Statens Naturvårdsverk rekommenderad metod "Ljud från landbaserade vindkraftverk", 2001 (ISBN 91-620-6249-2)

Roughness class: 1,5
Roughness length: 0,055
K: 1.0 dB/(m/s)



WTGs

RN	East	North	Z	Row data/Description	WTG type	Type	Power	Diam.	Height	Noise data	Wind speed	Lw,ref	Pure tones	Octave data
			[m]		Valid	Manuf.	[kW]	[m]	[m]	Creator	[m/s]	[dB(A)]		
1	1 328 490	6 295 978	0	ENERCON GmbH E-82 2000	Yes	ENERCON GmbH	E-82	2 000	82,0	98,0	USER	Enercon Octave Op. Mode 1, 104 dB(A)	(G)	8,0 104,0 No Yes

Calculation Results

Sound Level

Noise sensitive area No.	Name	RN	East	North	Z	Imission height [m]	Demands Noise [dB(A)]	Sound Level From WTGs [dB(A)]	Demands fulfilled ? Noise																					
										Dist: 0 m	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)
A	Noise Sensitive Point: 40 dB	Dist: 0 m	1 327 944	6 296 374	0	1,5	40,0	36,0	Yes																					
B	Noise Sensitive Point: 40 dB	Dist: 0 m	1 328 102	6 296 361	0	1,5	40,0	38,4	Yes																					
C	Noise Sensitive Point: 40 dB	Dist: 0 m	1 328 393	6 296 662	0	1,5	40,0	35,7	Yes																					
D	Noise Sensitive Point: 40 dB	Dist: 0 m	1 328 532	6 296 583	0	1,5	40,0	37,2	Yes																					
E	Noise Sensitive Point: 40 dB	Dist: 0 m	1 328 915	6 296 244	0	1,5	40,0	39,3	Yes																					
F	Noise Sensitive Point: 40 dB	Dist: 0 m	1 328 953	6 296 244	0	1,5	40,0	38,6	Yes																					
G	Noise Sensitive Point: 40 dB	Dist: 0 m	1 328 958	6 296 263	0	1,5	40,0	38,4	Yes																					
H	Noise Sensitive Point: 40 dB	Dist: 0 m	1 329 107	6 296 167	0	1,5	40,0	36,5	Yes																					
I	Noise Sensitive Point: 40 dB	Dist: 0 m	1 329 483	6 295 532	0	1,5	40,0	30,8	Yes																					
J	Noise Sensitive Point: 40 dB	Dist: 0 m	1 329 478	6 295 518	0	1,5	40,0	30,8	Yes																					
K	Noise Sensitive Point: 40 dB	Dist: 0 m	1 329 165	6 295 419	0	1,5	40,0	32,7	Yes																					
L	Noise Sensitive Point: 40 dB	Dist: 0 m	1 328 996	6 295 340	0	1,5	40,0	33,7	Yes																					
M	Noise Sensitive Point: 40 dB	Dist: 0 m	1 328 932	6 295 355	0	1,5	40,0	34,5	Yes																					
N	Noise Sensitive Point: 40 dB	Dist: 0 m	1 328 520	6 295 433	0	1,5	40,0	38,4	Yes																					
O	Noise Sensitive Point: 40 dB	Dist: 0 m	1 328 347	6 295 444	0	1,5	40,0	38,2	Yes																					
P	Noise Sensitive Point: 40 dB	Dist: 0 m	1 328 227	6 295 395	0	1,5	40,0	36,6	Yes																					
Q	Noise Sensitive Point: 40 dB	Dist: 0 m	1 328 182	6 295 376	0	1,5	40,0	35,9	Yes																					
R	Noise Sensitive Point: 40 dB	Dist: 0 m	1 328 008	6 295 375	0	1,5	40,0	34,3	Yes																					
S	Noise Sensitive Point: 40 dB	Dist: 0 m	1 327 696	6 295 626	0	1,5	40,0	32,8	Yes																					
T	Noise Sensitive Point: 40 dB	Dist: 0 m	1 327 750	6 295 718	0	1,5	40,0	34,1	Yes																					
U	Noise Sensitive Point: 40 dB	Dist: 0 m	1 327 541	6 295 797	0	1,5	40,0	31,4	Yes																					
V	Noise Sensitive Point: 40 dB	Dist: 0 m	1 327 491	6 295 934	0	1,5	40,0	31,7	Yes																					
W	Noise Sensitive Point: 40 dB	Dist: 0 m	1 327 809	6 296 009	0	1,5	40,0	35,8	Yes																					
X	Noise Sensitive Point: 40 dB	Dist: 0 m	1 329 541	6 295 056	0	1,5	40,0	28,1	Yes																					
Y	Noise Sensitive Point: 40 dB	Dist: 0 m	1 329 760	6 295 044	0	1,5	40,0	26,7	Yes																					
Z	Noise Sensitive Point: 40 dB	Dist: 0 m	1 329 830	6 295 056	0	1,5	40,0	26,4	Yes																					
AA	Noise Sensitive Point: 40 dB	Dist: 0 m	1 329 948	6 294 957	0	1,5	40,0	25,4	Yes																					
AB	Noise Sensitive Point: 40 dB	Dist: 0 m	1 330 783	6 294 751	0	1,5	40,0	20,9	Yes																					
AC	Noise Sensitive Point: 40 dB	Dist: 0 m	1 330 739	6 294 390	0	1,5	40,0	20,2	Yes																					
AD	Noise Sensitive Point: 40 dB	Dist: 0 m	1 330 123	6 294 279	0	1,5	40,0	22,1	Yes																					

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Project Gissleberga	Description: OBS! Detta är en beräkning baserad på data från garanterad källjudsnivå. Vänligen notera att vi ej tagit hänsyn till eventuella höjdskillnader i området.	Printed/Page 2007.01.29 13:52 / 2
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DECIBEL - Main Result

Calculation: 2007-01-29

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Noise sensitive area No.	Name	RN		Z [m]	Imission height [m]	Demands Sound Level		Demands fulfilled ? Noise
		East	North			Noise [dB(A)]	From WTGs [dB(A)]	
	AE Noise Sensitive Point: 40 dB Dist: 0 m (31)	1 329 619	6 294 103	0	1,5	40,0	23,0	Yes
	AF Noise Sensitive Point: 40 dB Dist: 0 m (32)	1 329 422	6 294 293	0	1,5	40,0	24,5	Yes
	AG Noise Sensitive Point: 40 dB Dist: 0 m (33)	1 329 152	6 294 107	0	1,5	40,0	24,1	Yes
	AH Noise Sensitive Point: 40 dB Dist: 0 m (34)	1 328 847	6 294 299	0	1,5	40,0	25,8	Yes
	AI Noise Sensitive Point: 40 dB Dist: 0 m (35)	1 328 978	6 294 987	0	1,5	40,0	30,6	Yes

Distances (m)

WTG	
NSA	1
A	675
B	545
C	691
D	607
E	502
F	534
G	548
H	645
I	1088
J	1090
K	877
L	814
M	764
N	546
O	553
P	640
Q	676
R	772
S	868
T	784
U	966
V	1000
W	681
X	1399
Y	1576
Z	1627
AA	1779
AB	2600
AC	2753
AD	2357
AE	2189
AF	1926
AG	1985
AH	1716
AI	1104

Project:
Gissleberga

Description:
OBS! Detta är en beräkning. Vänligen notera att vi ej tagit hänsyn till eventuella höjdskillnader i området. "Expected values" är baserade på Danmarks soldata.

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2007.01.29 13:55/2.5.4.70

SHADOW - Main Result

Calculation: 2007-01-29

Assumptions for shadow calculations

Maximum distance for influence 2 000 m
Minimum sun height over horizon for influence 3 °
Day step for calculation 1 days
Time step for calculation 1 minutes

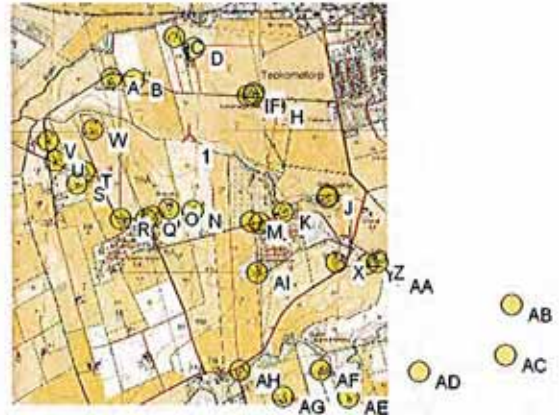
Sun shine probabilities (part of time from sun rise to sun set with sun shine)
Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
0,13 0,22 0,32 0,40 0,42 0,46 0,42 0,49 0,39 0,29 0,18 0,10

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

Site data 12 sectors; Radius: 20 000 m (1)

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
415	750	961	779	613	572	640	745	1014	1142	587	396	8615



WTGs

RN	East	North	Z	Row data/Description	WTG type	Type	Power [kW]	Diam. [m]	Height [m]	RPM [RPM]
1	1 328 490	6 295 978	0	ENERCON GmbH E-82 2000 82.0 IO! hub: 98,0 m (1)	Yes	ENERCON GmbH E-82	2 000	82,0	98,0	19,5

Shadow receptor-Input

No.	East	North	Z	Width	Height	Height	Degrees from	Slope of	Direction mode
						a.g.l.	south cw	window	
			[m]	[m]	[m]	[m]	[°]	[°]	
A	1 327 943	6 296 374	0	1,0	1,0	1,0	0,0	90,0	"Green house mode"
B	1 328 102	6 296 361	0	1,0	1,0	1,0	0,0	90,0	"Green house mode"
C	1 328 393	6 296 662	0	1,0	1,0	1,0	0,0	90,0	"Green house mode"
D	1 328 532	6 296 583	0	1,0	1,0	1,0	0,0	90,0	"Green house mode"
E	1 328 915	6 296 244	0	1,0	1,0	1,0	0,0	90,0	"Green house mode"
F	1 328 953	6 296 244	0	1,0	1,0	1,0	0,0	90,0	"Green house mode"
G	1 328 958	6 296 263	0	1,0	1,0	1,0	0,0	90,0	"Green house mode"
H	1 329 107	6 296 167	0	1,0	1,0	1,0	0,0	90,0	"Green house mode"
I	1 329 483	6 295 532	0	1,0	1,0	1,0	0,0	90,0	"Green house mode"
J	1 329 478	6 295 518	0	1,0	1,0	1,0	0,0	90,0	"Green house mode"
K	1 329 165	6 295 419	0	1,0	1,0	1,0	0,0	90,0	"Green house mode"
L	1 328 996	6 295 340	0	1,0	1,0	1,0	0,0	90,0	"Green house mode"
M	1 328 932	6 295 355	0	1,0	1,0	1,0	0,0	90,0	"Green house mode"
N	1 328 520	6 295 433	0	1,0	1,0	1,0	0,0	90,0	"Green house mode"
O	1 328 347	6 295 444	0	1,0	1,0	1,0	0,0	90,0	"Green house mode"
P	1 328 227	6 295 395	0	1,0	1,0	1,0	0,0	90,0	"Green house mode"
Q	1 328 182	6 295 376	0	1,0	1,0	1,0	0,0	90,0	"Green house mode"
R	1 328 008	6 295 375	0	1,0	1,0	1,0	0,0	90,0	"Green house mode"
S	1 327 696	6 295 626	0	1,0	1,0	1,0	0,0	90,0	"Green house mode"
T	1 327 750	6 295 718	0	1,0	1,0	1,0	0,0	90,0	"Green house mode"
U	1 327 541	6 295 797	0	1,0	1,0	1,0	0,0	90,0	"Green house mode"
V	1 327 491	6 295 934	0	1,0	1,0	1,0	0,0	90,0	"Green house mode"
W	1 327 809	6 296 009	0	1,0	1,0	1,0	0,0	90,0	"Green house mode"
X	1 329 541	6 295 056	0	1,0	1,0	1,0	0,0	90,0	"Green house mode"
Y	1 329 760	6 295 044	0	1,0	1,0	1,0	0,0	90,0	"Green house mode"
Z	1 329 830	6 295 056	0	1,0	1,0	1,0	0,0	90,0	"Green house mode"
AA	1 329 948	6 294 957	0	1,0	1,0	1,0	0,0	90,0	"Green house mode"
AB	1 330 783	6 294 751	0	1,0	1,0	1,0	0,0	90,0	"Green house mode"
AC	1 330 739	6 294 390	0	1,0	1,0	1,0	0,0	90,0	"Green house mode"
AD	1 330 123	6 294 279	0	1,0	1,0	1,0	0,0	90,0	"Green house mode"

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Project	Description	Printed Page
Gissleberga	OBS! Detta är en beräkning. Vänligen notera att vi ej tagit hänsyn till eventuella höjdskillnader i området. "Expected values" är baserade på Danmarks soldata.	2007.01.29 13:57 / 2
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		Calculated
		2007.01.29 13:55/2.5.4.70

SHADOW - Main Result

Calculation: 2007-01-29

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No.	East	North	Z	Width	Height	Height a.g.l.	Degrees from south cw	Slope of window	Direction mode
AE	1 329 619	6 294 103	0	1,0	1,0	1,0	0,0	90,0	"Green house mode"
AF	1 329 422	6 294 293	0	1,0	1,0	1,0	0,0	90,0	"Green house mode"
AG	1 329 152	6 294 107	0	1,0	1,0	1,0	0,0	90,0	"Green house mode"
AH	1 328 847	6 294 299	0	1,0	1,0	1,0	0,0	90,0	"Green house mode"
AI	1 328 978	6 294 987	0	1,0	1,0	1,0	0,0	90,0	"Green house mode"

Calculation Results

Shadow receptor

No.	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	14:26	39	0:29	2:06	
B	23:13	51	0:36	2:58	
C	17:42	46	0:28	1:06	
D	26:26	56	0:34	1:53	
E	24:33	50	0:38	4:46	
F	21:35	47	0:36	4:14	
G	20:55	47	0:35	4:00	
H	14:16	38	0:30	3:11	
I	7:11	30	0:18	1:55	
J	7:25	32	0:18	1:59	
K	9:53	37	0:20	2:28	
L	0:00	0	0:00	0:00	
M	0:00	0	0:00	0:00	
N	0:00	0	0:00	0:00	
O	0:00	0	0:00	0:00	
P	0:00	0	0:00	0:00	
Q	0:00	0	0:00	0:00	
R	0:00	0	0:00	0:00	
S	15:45	53	0:24	4:41	
T	15:47	48	0:26	4:47	
U	7:39	29	0:20	2:17	
V	6:27	26	0:20	1:44	
W	13:26	36	0:28	3:29	
X	6:17	38	0:14	1:33	
Y	4:22	31	0:13	1:02	
Z	3:09	24	0:12	0:45	
AA	2:11	20	0:10	0:31	
AB	0:00	0	0:00	0:00	
AC	0:00	0	0:00	0:00	
AD	0:00	0	0:00	0:00	
AE	0:00	0	0:00	0:00	
AF	0:00	0	0:00	0:00	
AG	0:00	0	0:00	0:00	
AH	0:00	0	0:00	0:00	
AI	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]
1	ENERCON GmbH E-82 2000 82.0 IO! hub: 98,0 m (1)	213:12

Project:
Gissleberga

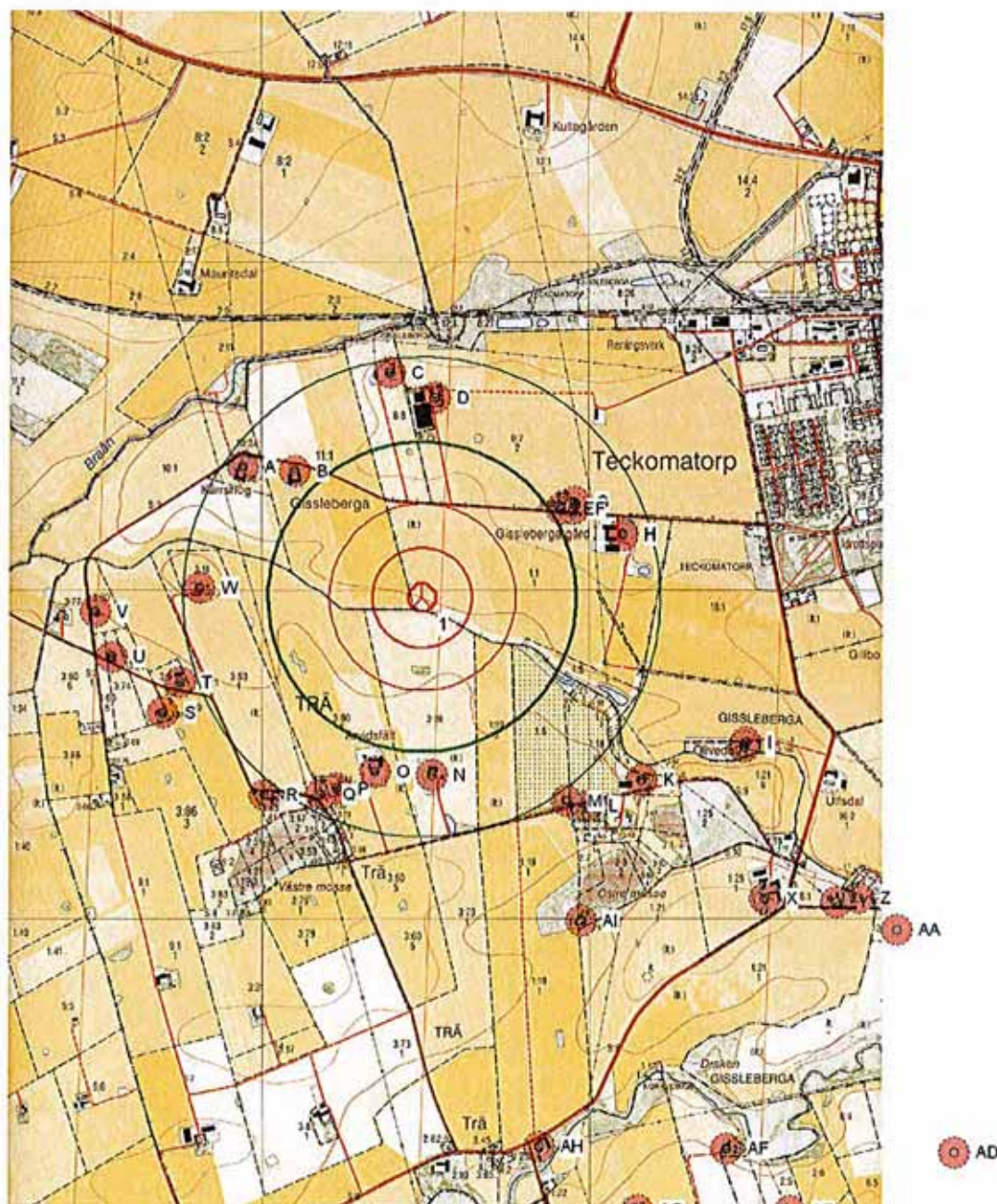
Description:
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DECIBEL - Gissleberga 1

Calculation: 2007-01-29 File: Hedberg Lars, Gissleberga 1.bmi



Map: Gissleberga 1, Print scale 1:20 000, Map center Rikets Net (SE) East: 1 328 636 North: 6 295 978
Noise calculation model: Swedish, Jan 2002, Land. Wind speed: 8,0 m/s

▲ New WTG

● Noise sensitive area

— 35,0 dB(A)

— 40,0 dB(A)

Height above sea level: 0,0 m

— 45,0 dB(A)

— 50,0 dB(A)

— 55,0 dB(A)

Project: Gissleberga	Description: OBS! Detta är en beräkning utifrån resultat från närmast kända referensverk. Enercon fransäger sig ansvar för produktionsresultat på denna plats, då lokala företeelser ej är för oss kända. Vänligen notera att vi ej tagit hänsyn till eventuella höjdskillnader i området.	Printed Page: 2007.01.29 14:01 / 1 Licensed user: ENERCON / Energy Converter AB Stenåldersgatan 19 SE-21376 Malmö 040-14 35 80 Calculated: 2007.01.29 14:01/2.5.4.70
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ATLAS - Main Result

Calculation: 2007-01-29

Name Site data 12 sectors; Radius: 20 000 m (1)

Site Coordinates

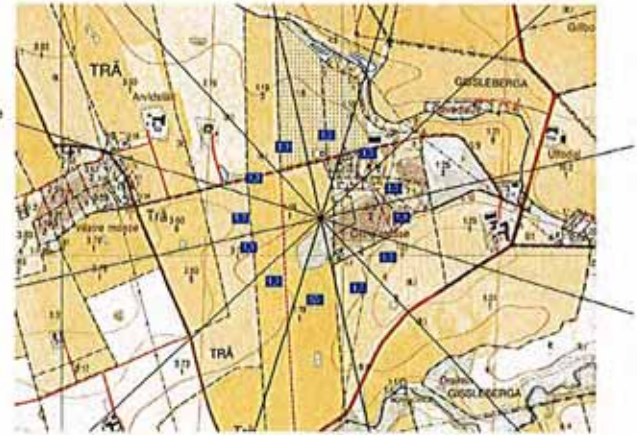
Rikets Net (SE) East: 1 328 925 North: 6 295 125

Air density calculation modified for all WTGs (User defined)

Result for WTG at hub altitude 1,225 kg/m³

Calculation is based on "Site data 12 sectors; Radius: 20 000 m (1)", using ATLAS to convert the wind statistics and the terrain classification to a site specific wind speed distribution. Using the selected power curve, the expected annual energy production is calculated.

Wind statistics SE HALMSTADS FLYGPLATS 1966-77.wvs



Site Data

Calculation Results

Key results for height 50,0 m above ground level

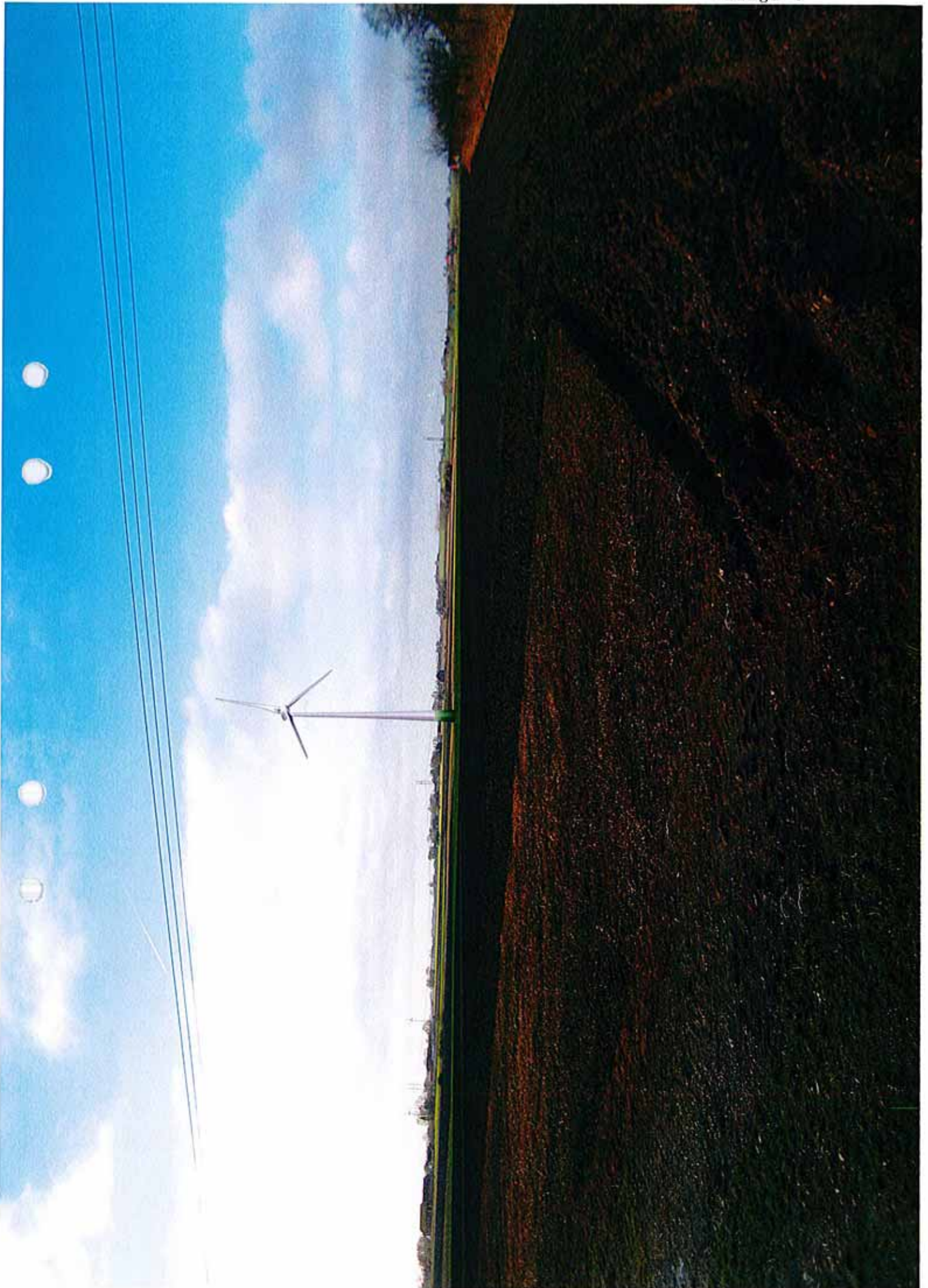
Wind energy: 2 227 kWh/m²; Mean wind speed: 5,8 m/s; Equivalent roughness: 1,3

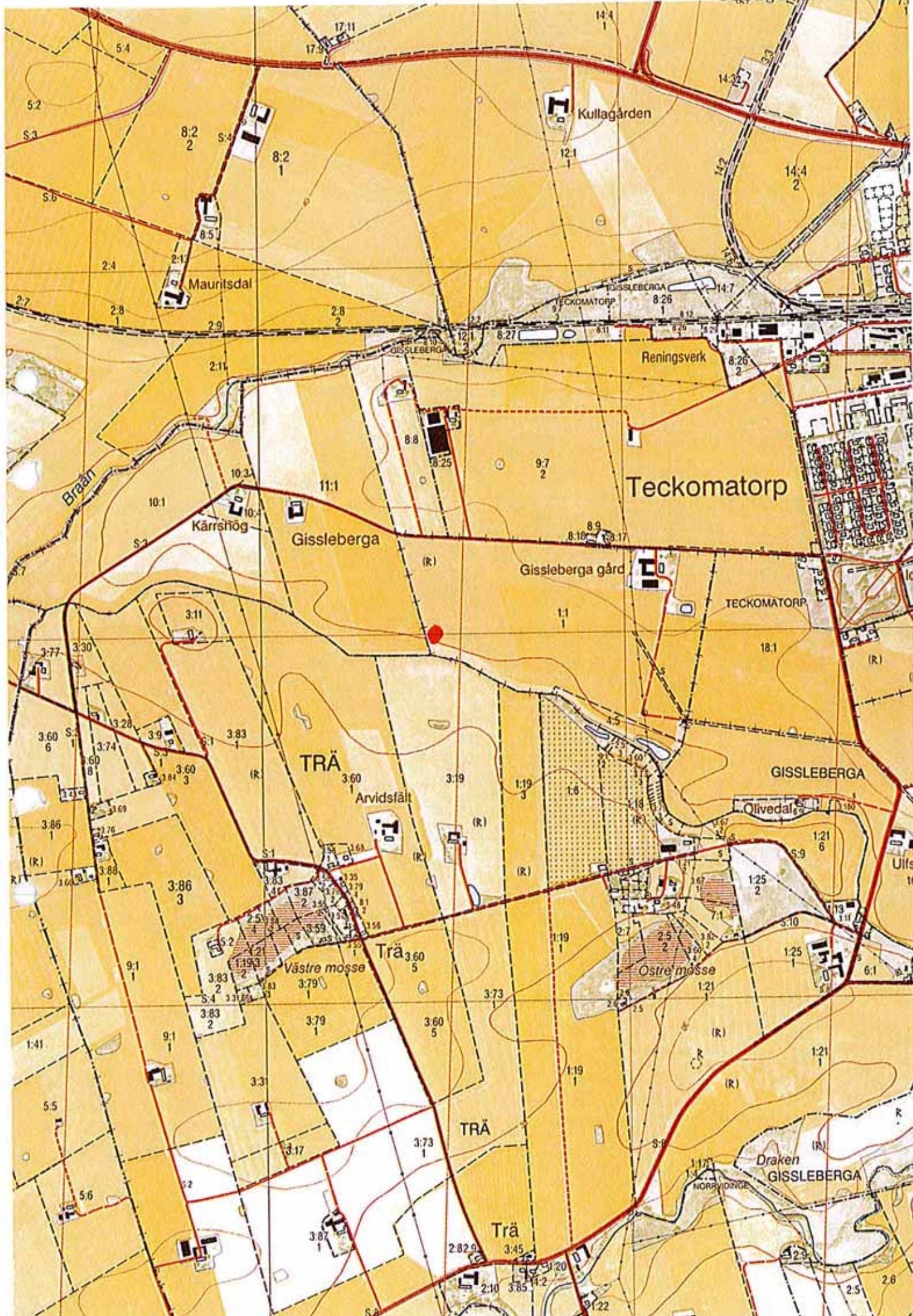
Key results for height 81,0 m above ground level

Wind energy: 3 000 kWh/m²; Mean wind speed: 6,6 m/s; Equivalent roughness: 1,3

Calculated Annual Energy

WTG type		Power curve					Annual Energy				
Valid	Manufact.	Type	Power	Diam.	Height	Creator	Name	Result	Result-10,0%	Mean wind speed	Capacity Factor
			[kW]	[m]	[m]			[MWh]	[MWh]	[m/s]	[%]
Yes	ENERCON GmbH	E-82	2 000	82,0	98,0	USER	Power curve Guar. Rev. 1.0	6 162,5	5 546	6,9	35,2





Kullagården

Mauritsdal

Teckomatorp

Gissleberga

Gissleberga gård

TRÄ

GISSLEBERGA

Västre mosse

Trä

Ostre mosse

TRÄ

Trä

GISSLEBERGA

Draken

NORRVIDINGE