PARK - Main Result

Calculation: AEP_Vestas_Normal_01

Setup

AEP scaled to a full year based on number of samples
Scaling factor from 31.0 years to 1 year: 0.032

Calculation performed in UTM (north)-WGS84 Zone: 32
At the site centre the difference between grid north and true north is: 0.6°

Wake

Wake Model: N.O. Jensen (RISØ/EMD) Park 2 2018
Wake decay constant
Wake decay constant: 0.085 Mixed farmland Hub height dependent
Reference WTG: 01_VESTAS V150-4.5 4500 150.0 !O! hub: 125.0 m (TOT: 200.0 m) (1)

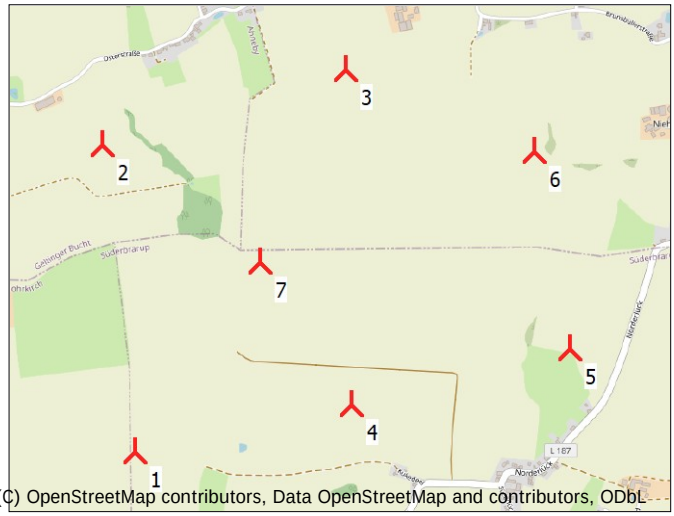
Scaler / wind data

Name	EMD Default Measurement Mast Scaler
Terrain scaling	Measured Data Scaling (WAsP Stability / A-Parameter)
Micro terrain flow model	WAsP IBZ from Site Data
Used period	1/1/1994 1:00:00 AM - 1/1/2025
Meteo object(s)	MCP LT - MCP session (1) - [Neural Network] (3), 125.00m - MCP LT - MCP session (1) - [Neural Network]
Displacement height	Omnidirectional from objects
WAsP version	WAsP 11 Version 11.04.0026

Power correction

Power curve correction (adjusted IEC method, improved to match turbine control)

		Min	Max	Avg	Corr. [%]	Neg. corr. [%]	Pos. corr. [%]
Air density							
From air density settings	[°C]	7.6	7.6	7.6			
From air density settings	[hPa]	990.7	990.7	990.7			
Resulting air density	[kg/m³]	1.229	1.229	1.229			
Relative to 15°C at sea level	[%]	100.4	100.4	100.4	0.2	0.0	0.2



Scale 1:25,000

New WTG

Calculated Annual Energy for Wind Farm

WTG combination	Result PARK	Result-10.0%	GROSS (no loss) Free WTGs	Wake loss	Specific results¤) Capacity factor	Mean WTG result	Full load hours	Wind speed free	wake reduced
	[MWh/y]	[MWh/y]	[MWh/y]	[%]	[%]	[MWh/y]	[Hours/year]	[m/s]	[m/s]
Wind farm	112,331.2	101,098.1	120,537.1	6.8	36.6	14,442.6	3,209	7.0	6.8

¤) Based on Result-10.0%

Calculated Annual Energy for each of 7 new WTGs with total 31.5 MW rated power

	WTG type Valid	Manufact.	Type-generator	Power, rated [kW]	Rotor diameter [m]	Hub height [m]	Power curve Creator	Name	Annual Energy Result [MWh/y]	Result-10.0% [MWh/y]	Wake loss [%]	Wind speed free [m/s]	reduced [m/s]
1	Yes	VESTAS	V150-4.5-4,500	4,500	150.0	125.0	USER	Level 0 - Calculated - PO4-0S & PO4 - 12-2021	16,773.7	15,096	2.9	7.01	6.91
2	Yes	VESTAS	V150-4.5-4,500	4,500	150.0	125.0	USER	Level 0 - Calculated - PO4-0S & PO4 - 12-2021	16,397.9	14,758	5.1	7.02	6.84
3	Yes	VESTAS	V150-4.5-4,500	4,500	150.0	125.0	USER	Level 0 - Calculated - PO4-0S & PO4 - 12-2021	15,754.7	14,179	8.2	6.99	6.71
4	Yes	VESTAS	V150-4.5-4,500	4,500	150.0	125.0	USER	Level 0 - Calculated - PO4-0S & PO4 - 12-2021	16,085.0	14,476	6.3	6.99	6.77
5	Yes	VESTAS	V150-4.5-4,500	4,500	150.0	125.0	USER	Level 0 - Calculated - PO4-0S & PO4 - 12-2021	15,954.9	14,359	6.9	6.98	6.74
6	Yes	VESTAS	V150-4.5-4,500	4,500	150.0	125.0	USER	Level 0 - Calculated - PO4-0S & PO4 - 12-2021	15,767.4	14,191	9.2	7.04	6.72
7	Yes	VESTAS	V150-4.5-4,500	4,500	150.0	125.0	USER	Level 0 - Calculated - PO4-0S & PO4 - 12-2021	15,597.6	14,038	9.1	6.99	6.68

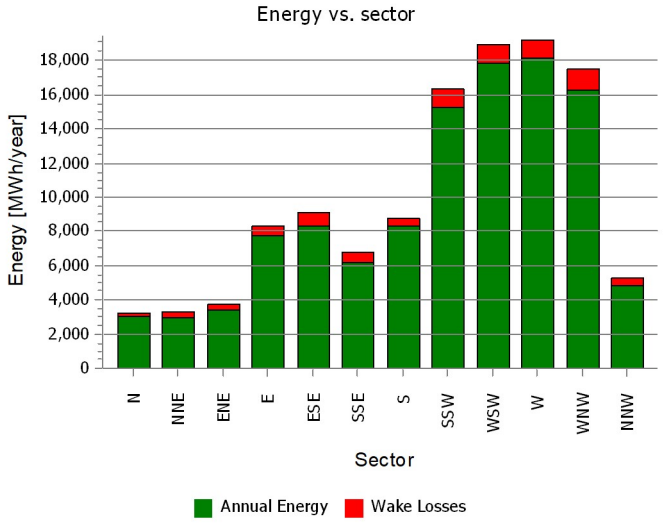
WTG siting

	UTM (north)-ETRS89 Zone: 32 Easting	Northing	Z [m]	Row data/Description	Calculation period Start	End
1	New	547,816	6,060,703	60.0	01_VESTAS V150-4.5 4500 150.0 !O! hub: 125.0 m (TOT: 200.0 m) (1)	1/1/1994	1/1/2025
2	New	547,696	6,061,714	60.0	02_VESTAS V150-4.5 4500 150.0 !O! hub: 125.0 m (TOT: 200.0 m) (7)	1/1/1994	1/1/2025
3	New	548,500	6,061,972	60.0	03_VESTAS V150-4.5 4500 150.0 !O! hub: 125.0 m (TOT: 200.0 m) (8)	1/1/1994	1/1/2025
4	New	548,532	6,060,864	60.0	04_VESTAS V150-4.5 4500 150.0 !O! hub: 125.0 m (TOT: 200.0 m) (9)	1/1/1994	1/1/2025
5	New	549,254	6,061,058	60.0	05_VESTAS V150-4.5 4500 150.0 !O! hub: 125.0 m (TOT: 200.0 m) (10)	1/1/1994	1/1/2025
6	New	549,128	6,061,708	60.0	06_VESTAS V150-4.5 4500 150.0 !O! hub: 125.0 m (TOT: 200.0 m) (11)	1/1/1994	1/1/2025
7	New	548,222	6,061,334	60.0	06_VESTAS V150-4.5 4500 150.0 !O! hub: 125.0 m (TOT: 200.0 m) (11)	1/1/1994	1/1/2025

PARK - Production Analysis

Calculation: AEP_Vestas_Normal_01 WTG: All new WTGs, Air density 1.229 kg/m³
Directional Analysis

Sector		0 N	1 NNE	2 ENE	3 E	4 ESE	5 SSE	6 S	7 SSW	8 WSW	9 W	10 WNW	11 NNW	Total
Model based energy	[MWh]	3,254.1	3,302.4	3,717.0	8,323.2	9,115.1	6,754.0	8,794.9	16,385.2	18,909.3	19,201.9	17,516.6	5,263.5	120,537.1
-Decrease due to wake losses	[MWh]	216.1	320.5	347.0	586.1	839.8	572.5	456.0	1,078.5	1,006.0	1,075.0	1,285.6	422.9	8,205.9
Resulting energy	[MWh]	3,038.0	2,981.8	3,370.1	7,737.1	8,275.3	6,181.5	8,338.9	15,306.7	17,903.3	18,126.9	16,231.0	4,840.6	112,331.2
Specific energy	[kWh/m²]													908
Specific energy	[kWh/kW]													3,566
Decrease due to wake losses	[%]	6.6	9.7	9.3	7.0	9.2	8.5	5.2	6.6	5.3	5.6	7.3	8.0	6.81
Full Load Equivalent	[Hours/year]	96	95	107	246	263	196	265	486	568	575	515	154	3,566



PARK - Power Curve Analysis

Calculation: AEP_Vestas_Normal_01 WTG: 1 - VESTAS V150-4.5 4500 150.0 !O!, Hub height: 125.0 m

Name: Level 0 - Calculated - PO4-0S & PO4 - 12-2021
Source: Manufacturer

Source/Date	Created by	Created	Edited	Stop wind speed [m/s]	Power control	CT curve type	Generator type	Specific power kW/m²
12/3/2021	USER	8/30/2022	8/30/2022	24.5	Pitch	User defined	Variable	0.25

Based on Document no.: 0067-7057.V04.

HP curve comparison - Note: For standard air density

Vmean	[m/s]	5	6	7	8	9	10
HP value Pitch, variable speed (2013)	[MWh]	8,677	12,863	16,760	20,128	22,908	25,089
VESTAS V150-4.5 4500 150.0 !O! Level 0 - Calculated - PO4-0S & PO4 - 12-2021	[MWh]	8,804	12,992	16,852	20,105	22,641	24,450
Check value	[%]	-1	-1	-1	0	1	3

The table shows comparison between annual energy production calculated on basis of simplified "HP-curves" which assume that all WTGs performs quite similar - only specific power loading (kW/m^2) and single/dual speed or stall/pitch decides the calculated values. Productions are without wake losses.
For further details, ask at the Danish Energy Agency for project report J.nr. 51171/00-0016 or see the windPRO manual.
The method is refined in EMD report "20 Detailed Case Studies comparing Project Design Calculations and actual Energy Productions for Wind Energy Projects worldwide", jan 2003.
Use the table to evaluate if the given power curve is reasonable - if the check value are lower than -5%, the power curve probably is too optimistic due to uncertainty in power curve measurement.

Power curve

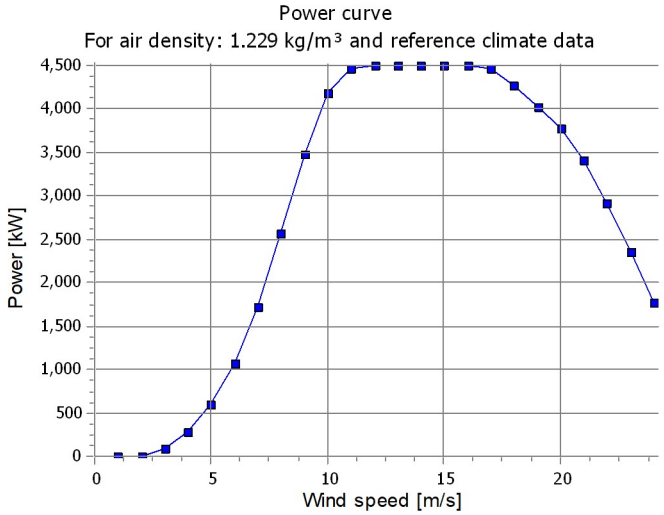
Original data, Air density: 1.225 kg/m³

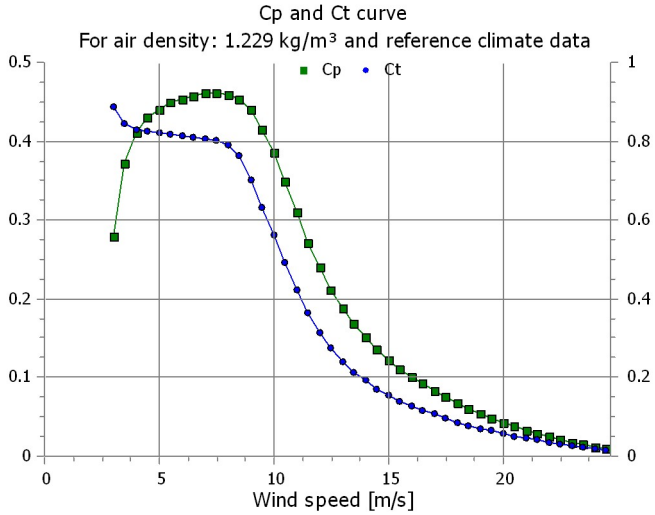
Wind speed [m/s]	Power [kW]	Cp	Wind speed [m/s]	Ct curve
3.0	81.0	0.28	3.0	0.89
3.5	172.0	0.37	3.5	0.85
4.0	285.0	0.41	4.0	0.83
4.5	424.0	0.43	4.5	0.83
5.0	596.0	0.44	5.0	0.82
5.5	808.0	0.45	5.5	0.82
6.0	1,061.0	0.45	6.0	0.81
6.5	1,360.0	0.46	6.5	0.81
7.0	1,710.0	0.46	7.0	0.81
7.5	2,106.0	0.46	7.5	0.80
8.0	2,549.0	0.46	8.0	0.79
8.5	3,021.0	0.45	8.5	0.76
9.0	3,471.0	0.44	9.0	0.70
9.5	3,861.0	0.42	9.5	0.63
10.0	4,180.0	0.39	10.0	0.56
10.5	4,372.0	0.35	10.5	0.49
11.0	4,470.0	0.31	11.0	0.42
11.5	4,494.0	0.27	11.5	0.36
12.0	4,500.0	0.24	12.0	0.31
12.5	4,500.0	0.21	12.5	0.27
13.0	4,500.0	0.19	13.0	0.24
13.5	4,500.0	0.17	13.5	0.22
14.0	4,500.0	0.15	14.0	0.19
14.5	4,500.0	0.14	14.5	0.17
15.0	4,500.0	0.12	15.0	0.16
15.5	4,500.0	0.11	15.5	0.14
16.0	4,500.0	0.10	16.0	0.13
16.5	4,498.0	0.09	16.5	0.12
17.0	4,473.0	0.08	17.0	0.11
17.5	4,394.0	0.08	17.5	0.10
18.0	4,268.0	0.07	18.0	0.09
18.5	4,139.0	0.06	18.5	0.08
19.0	4,031.0	0.05	19.0	0.07
19.5	3,909.0	0.05	19.5	0.06
20.0	3,771.0	0.04	20.0	0.06
20.5	3,607.0	0.04	20.5	0.05
21.0	3,408.0	0.03	21.0	0.05
21.5	3,180.0	0.03	21.5	0.04
22.0	2,917.0	0.03	22.0	0.04
22.5	2,645.0	0.02	22.5	0.03
23.0	2,363.0	0.02	23.0	0.03
23.5	2,070.0	0.01	23.5	0.02
24.0	1,782.0	0.01	24.0	0.02
24.5	1,561.0	0.01	24.5	0.02

Power and efficiency vs. wind speed

Data used in calculation, Mean air density: 1.229 kg/m³

Wind speed [m/s]	Power [kW]	Cp
1.0	0.0	0.00
2.0	0.0	0.00
3.0	81.6	0.28
4.0	286.3	0.41
5.0	598.5	0.44
6.0	1,065.2	0.45
7.0	1,716.5	0.46
8.0	2,557.8	0.46
9.0	3,479.6	0.44
10.0	4,185.1	0.39
11.0	4,470.6	0.31
12.0	4,500.0	0.24
13.0	4,500.0	0.19
14.0	4,500.0	0.15
15.0	4,500.0	0.12
16.0	4,499.9	0.10
17.0	4,473.0	0.08
18.0	4,268.0	0.07
19.0	4,031.0	0.05
20.0	3,771.0	0.04
21.0	3,408.0	0.03
22.0	2,917.0	0.03
23.0	2,363.0	0.02
24.0	1,782.0	0.01





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1/16/2025 3:46 PM/4.0.547

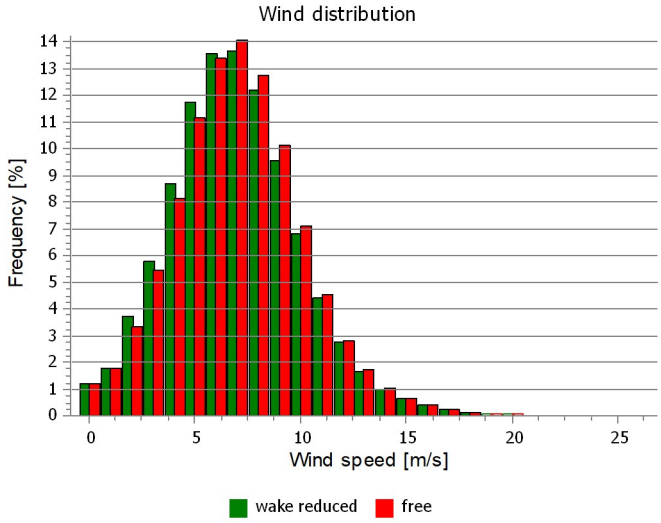
PARK - Wind Data Analysis

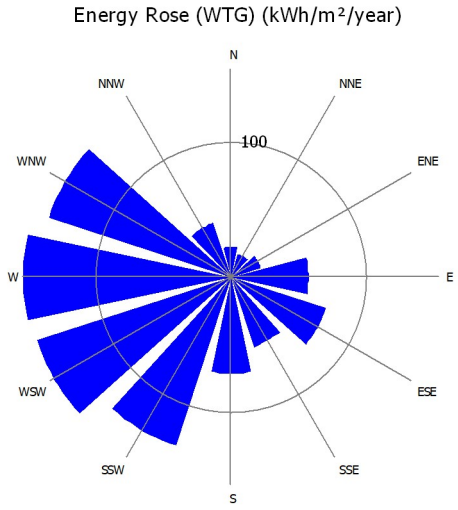
Calculation: AEP_Vestas_Normal_01 Wind data: 1 - 01_VESTAS V150-4.5 4500 150.0 !O! hub: 125.0 m (TOT: 200.0 m) (1); Hub height: 125.0

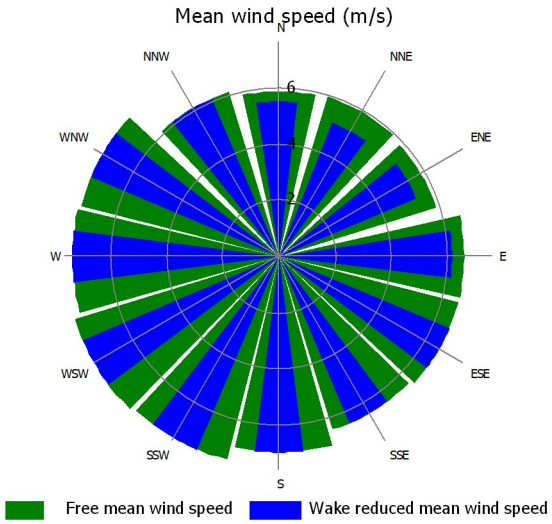
Site coordinates
UTM (north)-ETRS89 Zone: 32
East: 547,816 North: 6,060,703
01_VESTAS V150-4.5 4500 150.0 !O! hub: 125.0 m (TOT: 200.0 m) (1)
Masts used
Take nearest

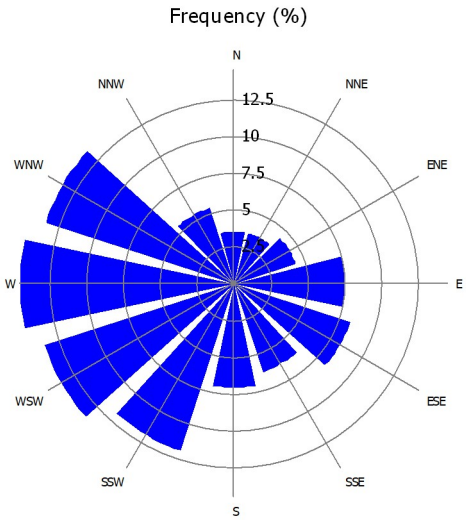
Winddata for site

Sector	Free mean wind speed [m/s]	Wake reduced mean wind speed [m/s]	Frequency [%]
0 N	5.9	5.6	3.6
1 NNE	6.0	5.2	3.6
2 ENE	5.9	5.4	4.4
3 E	6.7	6.2	7.5
4 ESE	6.6	6.6	8.3
5 SSE	6.5	6.5	6.3
6 S	7.0	7.0	7.1
7 SSW	7.5	7.5	12.0
8 WSW	7.7	7.7	13.6
9 W	7.4	7.4	14.6
10 WNW	7.3	7.3	13.5
11 NNW	6.2	6.2	5.5
All	7.0	6.9	100.0









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Calculated:
1/16/2025 3:46 PM/4.0.547

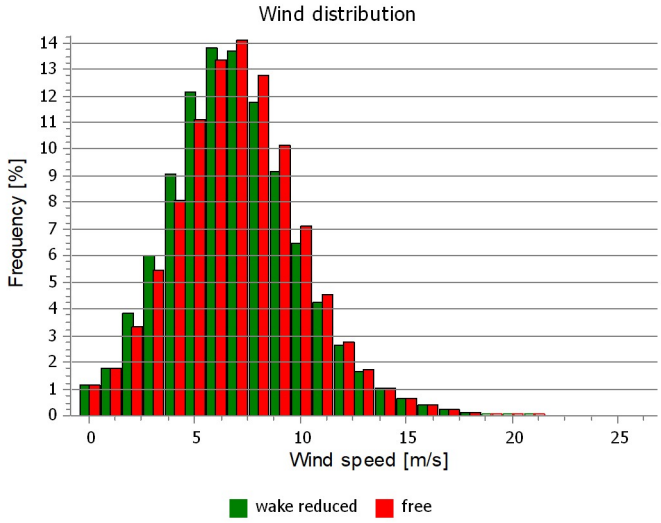
PARK - Wind Data Analysis

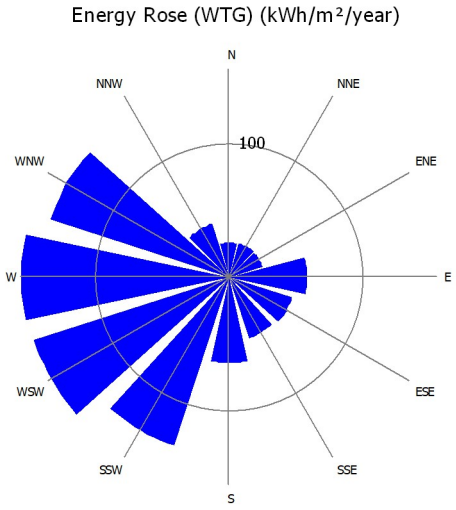
Calculation: AEP_Vestas_Normal_01 Wind data: 2 - 02_VESTAS V150-4.5 4500 150.0 !O! hub: 125.0 m (TOT: 200.0 m) (7); Hub height: 125.0

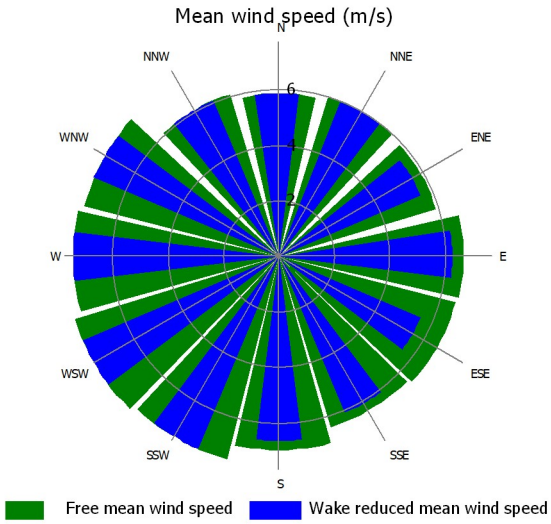
Site coordinates
UTM (north)-ETRS89 Zone: 32
East: 547,696 North: 6,061,714
02_VESTAS V150-4.5 4500 150.0 !O! hub: 125.0 m (TOT: 200.0 m) (7)
Masts used
Take nearest

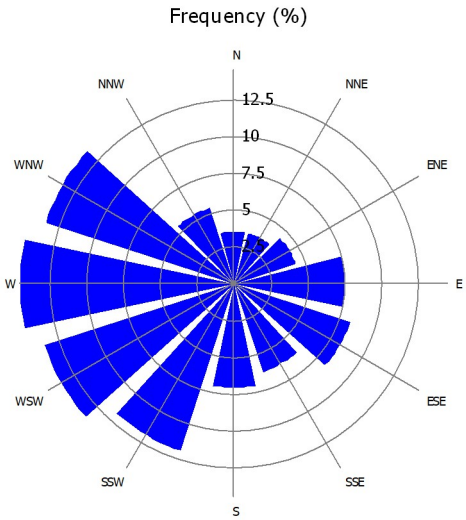
Winddata for site

Sector	Free mean wind speed [m/s]	Wake reduced mean wind speed [m/s]	Frequency [%]
0 N	5.9	5.9	3.6
1 NNE	6.0	6.0	3.6
2 ENE	6.0	5.6	4.4
3 E	6.7	6.3	7.5
4 ESE	6.6	5.6	8.3
5 SSE	6.5	6.1	6.3
6 S	7.0	6.7	7.1
7 SSW	7.6	7.6	12.0
8 WSW	7.7	7.7	13.6
9 W	7.5	7.5	14.6
10 WNW	7.3	7.3	13.5
11 NNW	6.1	6.1	5.5
All	7.0	6.8	100.0







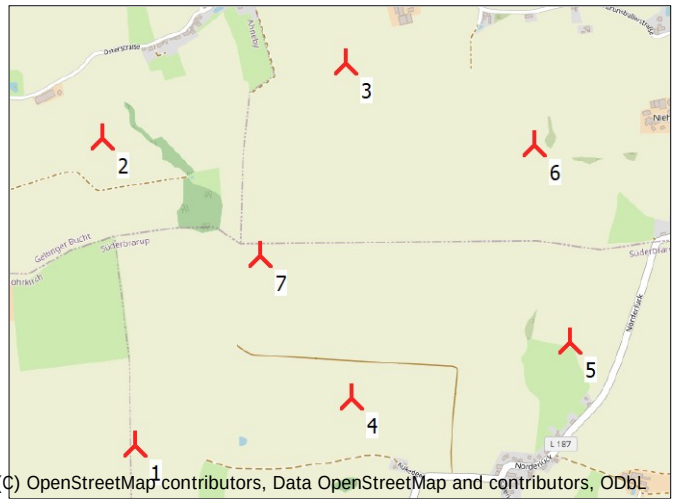


PARK - WTG distances

Calculation: AEP_Vestas_Normal_01

WTG distances

	Z [m]	Nearest WTG	Z [m]	Horizontal distance [m]	Distance in rotor diameters
1	60.0	4	60.0	734	4.9
2	60.0	7	60.0	650	4.3
3	60.0	6	60.0	681	4.5
4	60.0	7	60.0	562	3.7
5	60.0	6	60.0	662	4.4
6	60.0	5	60.0	662	4.4
7	60.0	4	60.0	562	3.7
Min	60.0		60.0	562	3.7
Max	60.0		60.0	734	4.9



Scale 1:25,000

New WTG

PARK - Time varying AEP

Calculation: AEP_Vestas_Normal_01

Windfarm: 31.5 MW based on 7 turbines of type VESTAS V150-4.5 4500 150.0 !O!.
Selection: All new WTGs
Calculated mean yield per month and hour [MWh]. The result includes wake losses and any curtailment losses.
Values are scaled to a full year, see correction factors at main result page.

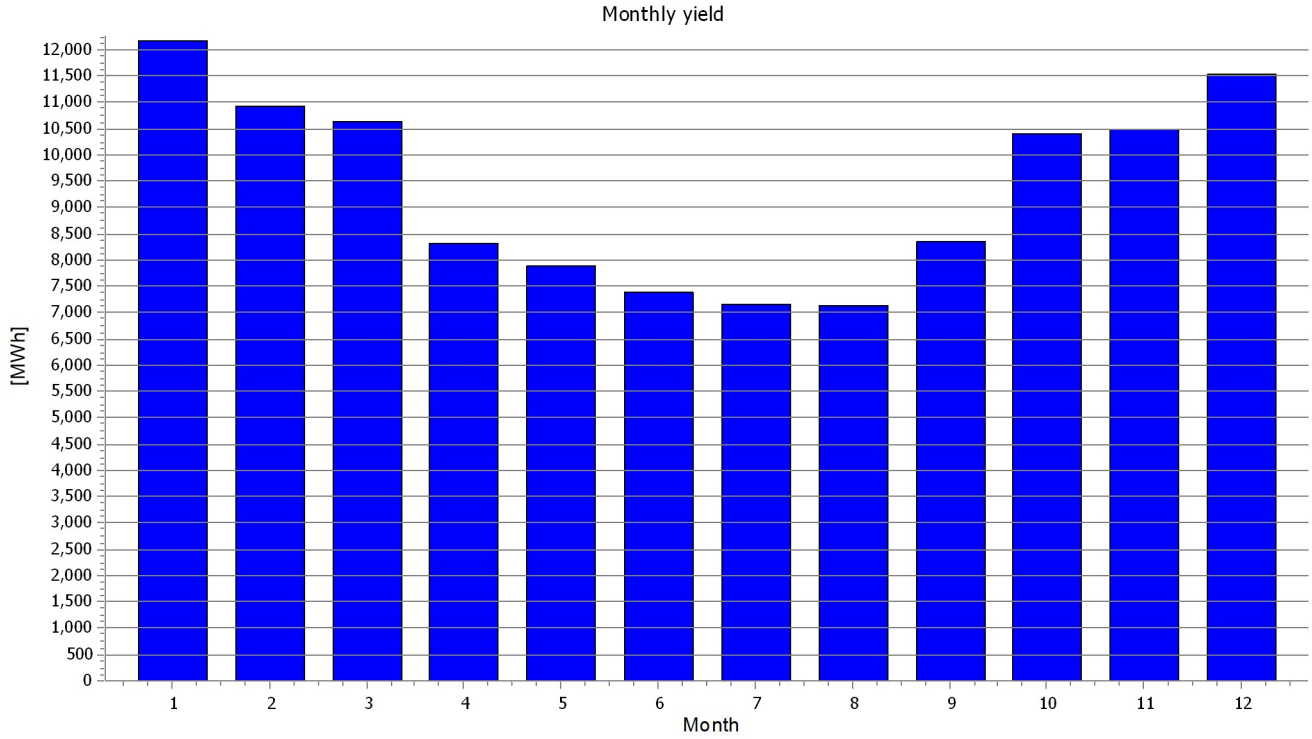
Hour/Month [MWh]	1	2	3	4	5	6	7	8	9	10	11	12	Grand Total
0	538	484	471	386	374	340	327	326	381	472	474	510	5,083
1	531	481	470	381	359	328	312	333	367	448	478	505	4,994
2	530	476	467	382	354	326	318	326	367	446	473	519	4,984
3	527	476	454	370	360	313	320	320	361	452	474	502	4,929
4	539	478	462	378	354	317	316	319	367	447	467	506	4,951
5	529	482	456	363	354	316	310	309	364	443	450	511	4,885
6	526	469	449	353	332	296	290	306	356	453	444	500	4,774
7	514	463	445	335	297	286	273	269	331	437	440	491	4,581
8	509	456	412	289	286	271	266	253	316	421	422	476	4,376
9	491	440	398	287	265	271	270	247	290	393	404	466	4,221
10	491	422	398	292	269	276	273	263	320	389	405	457	4,254
11	477	412	400	295	275	273	266	257	304	382	376	444	4,160
12	467	427	406	312	300	300	292	283	332	400	405	449	4,375
13	481	441	430	337	317	321	305	300	356	421	404	452	4,566
14	481	440	447	350	334	339	324	317	345	424	419	453	4,674
15	487	453	451	351	339	338	322	306	359	427	406	456	4,696
16	484	436	434	349	331	323	305	305	345	415	416	456	4,598
17	487	427	424	337	325	315	297	294	338	405	420	467	4,536
18	487	433	431	334	310	294	288	277	330	412	425	473	4,494
19	511	448	442	343	324	292	282	281	335	441	438	469	4,606
20	513	459	460	361	345	284	288	285	345	445	444	486	4,717
21	521	473	479	369	343	311	296	300	368	462	460	484	4,866
22	523	481	482	386	364	316	306	314	367	480	470	501	4,990
23	522	474	468	387	362	325	316	329	394	479	463	499	5,018
Grand Total	12,166	10,930	10,637	8,327	7,874	7,372	7,164	7,121	8,339	10,392	10,477	11,533	112,331

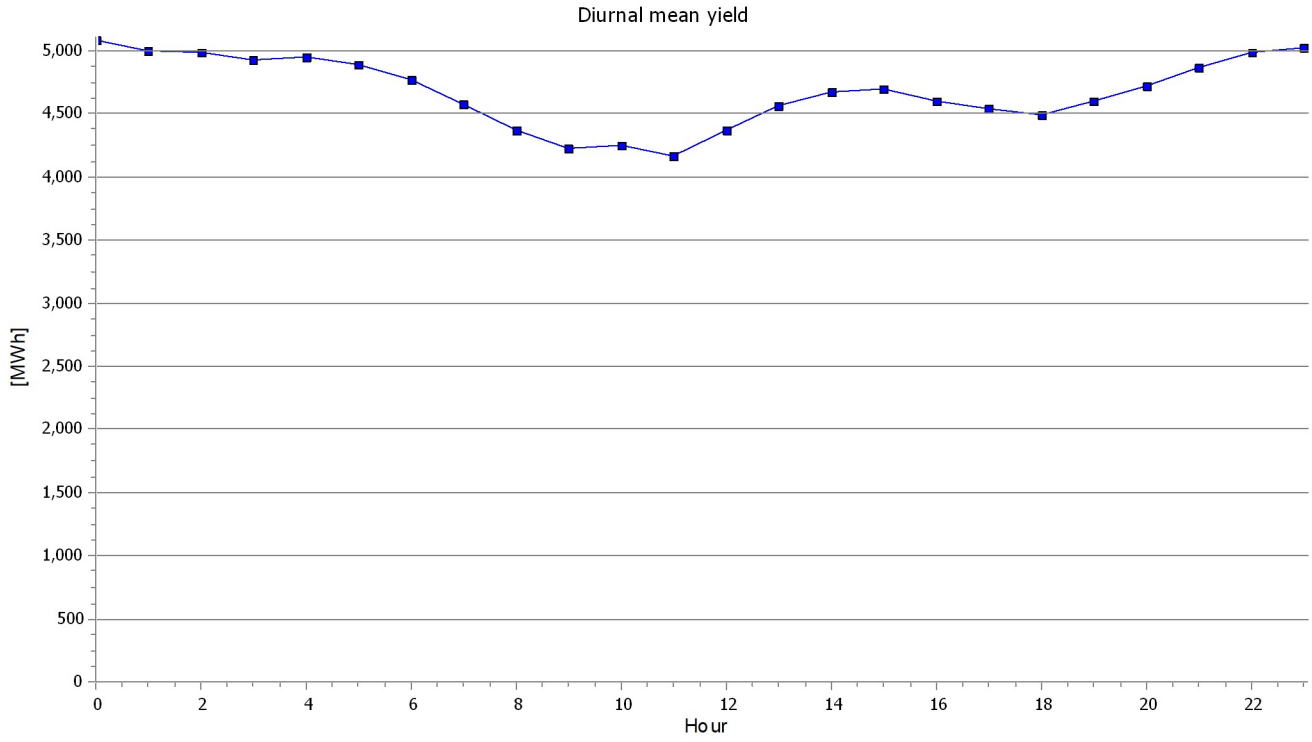
Hour/Month [MW]	1	2	3	4	5	6	7	8	9	10	11	12	Grand Total
0	17.3	17.3	15.2	12.9	12.1	11.3	10.5	10.5	12.7	15.2	15.8	16.5	13.9
1	17.1	17.2	15.2	12.7	11.6	10.9	10.1	10.7	12.2	14.4	15.9	16.3	13.7
2	17.1	17.0	15.1	12.7	11.4	10.9	10.3	10.5	12.2	14.4	15.8	16.7	13.7
3	17.0	17.0	14.7	12.3	11.6	10.4	10.3	10.3	12.0	14.6	15.8	16.2	13.5
4	17.4	17.1	14.9	12.6	11.4	10.6	10.2	10.3	12.2	14.4	15.6	16.3	13.6
5	17.1	17.2	14.7	12.1	11.4	10.5	10.0	10.0	12.1	14.3	15.0	16.5	13.4
6	17.0	16.8	14.5	11.8	10.7	9.9	9.4	9.9	11.9	14.6	14.8	16.1	13.1
7	16.6	16.5	14.4	11.2	9.6	9.5	8.8	8.7	11.0	14.1	14.7	15.8	12.6
8	16.4	16.3	13.3	9.6	9.2	9.0	8.6	8.2	10.5	13.6	14.1	15.4	12.0
9	15.8	15.7	12.8	9.6	8.5	9.0	8.7	8.0	9.7	12.7	13.5	15.0	11.6
10	15.8	15.1	12.8	9.7	8.7	9.2	8.8	8.5	10.7	12.5	13.5	14.7	11.7
11	15.4	14.7	12.9	9.8	8.9	9.1	8.6	8.3	10.1	12.3	12.5	14.3	11.4
12	15.1	15.3	13.1	10.4	9.7	10.0	9.4	9.1	11.1	12.9	13.5	14.5	12.0
13	15.5	15.7	13.9	11.2	10.2	10.7	9.8	9.7	11.9	13.6	13.5	14.6	12.5
14	15.5	15.7	14.4	11.7	10.8	11.3	10.5	10.2	11.5	13.7	14.0	14.6	12.8
15	15.7	16.2	14.6	11.7	10.9	11.3	10.4	9.9	12.0	13.8	13.5	14.7	12.9
16	15.6	15.6	14.0	11.6	10.7	10.8	9.8	9.8	11.5	13.4	13.9	14.7	12.6
17	15.7	15.3	13.7	11.2	10.5	10.5	9.6	9.5	11.3	13.0	14.0	15.1	12.4
18	15.7	15.5	13.9	11.1	10.0	9.8	9.3	8.9	11.0	13.3	14.2	15.3	12.3
19	16.5	16.0	14.2	11.4	10.4	9.7	9.1	9.1	11.2	14.2	14.6	15.1	12.6
20	16.5	16.4	14.9	12.0	11.1	9.5	9.3	9.2	11.5	14.4	14.8	15.7	12.9
21	16.8	16.9	15.5	12.3	11.1	10.4	9.5	9.7	12.3	14.9	15.3	15.6	13.3
22	16.9	17.2	15.5	12.9	11.7	10.5	9.9	10.1	12.2	15.5	15.7	16.2	13.7
23	16.8	16.9	15.1	12.9	11.7	10.8	10.2	10.6	13.1	15.5	15.4	16.1	13.7
Grand Total	16.4	16.3	14.3	11.6	10.6	10.2	9.6	9.6	11.6	14.0	14.6	15.5	12.8

PARK - Time varying AEP

Calculation: AEP_Vestas_Normal_01

Windfarm: 31.5 MW based on 7 turbines of type VESTAS V150-4.5 4500 150.0 !O!.
Selection: All new WTGs
Calculated mean yield per month and hour [MWh]. The result includes wake losses and any curtailment losses.
Values are scaled to a full year, see correction factors at main result page.





Project:
Exam_16.01

Licensed user:
Hochschule Flensburg, University of Applied Sciences
Darf nur für Zwecke der Lehre verwendet werden
- -

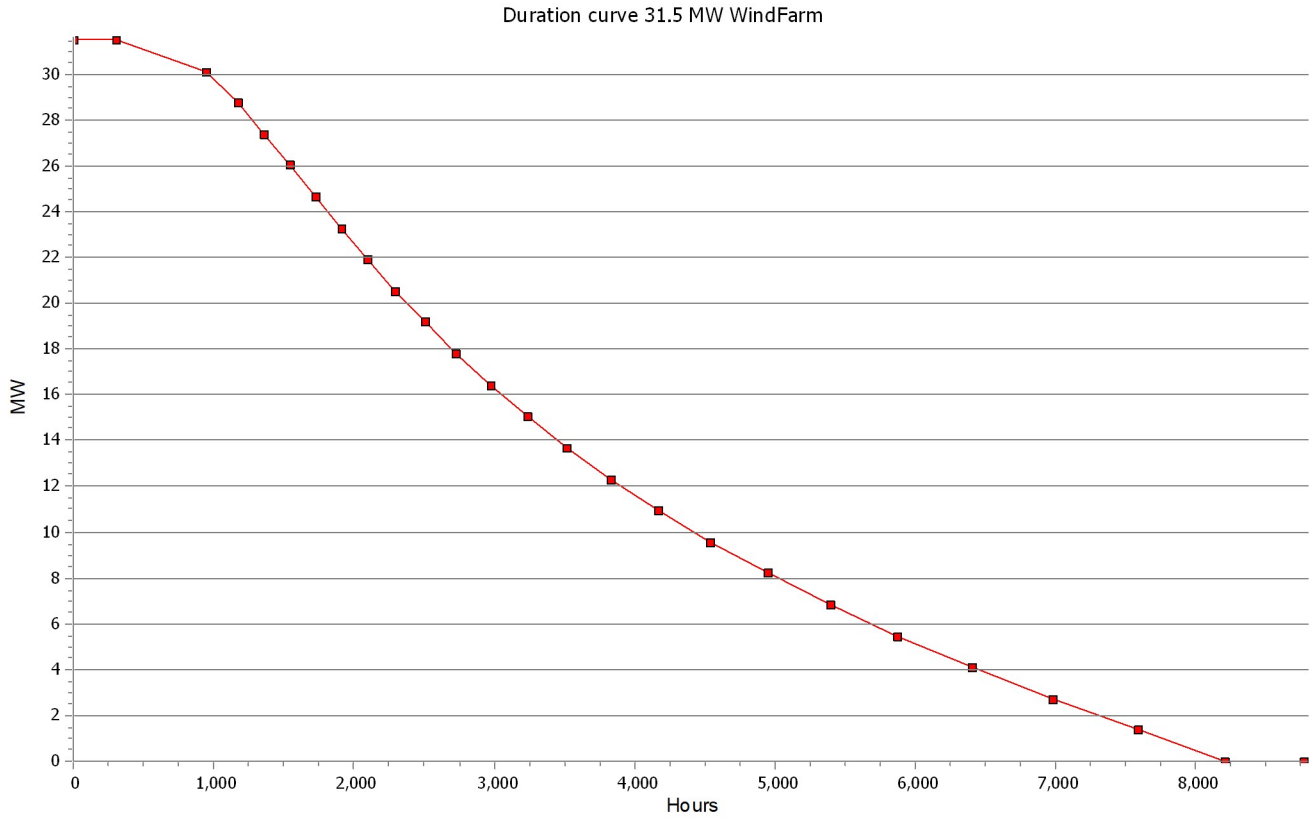
student / weti-lab-vt10@hs-flensburg.de
Calculated:
1/16/2025 3:46 PM/4.0.547

PARK - Time varying AEP

Calculation: AEP_Vestas_Normal_01

Windfarm: 31.5 MW based on 7 turbines of type VESTAS V150-4.5 4500 150.0 !O!.
Selection: All new WTGs
Calculated mean yield per month and hour [MWh]. The result includes wake losses and any curtailment losses.

Hours	Hours [%]	Hours accumulated	Power [MW]	Power (MW/WTG)
301	3.4	301	31.5	4.5
641	7.3	942	30.1 - 31.5	4.3 - 4.5
226	2.6	1168	28.8 - 30.1	4.1 - 4.3
190	2.2	1358	27.4 - 28.8	3.9 - 4.1
181	2.1	1539	26.0 - 27.4	3.7 - 3.9
184	2.1	1723	24.7 - 26.0	3.5 - 3.7
182	2.1	1905	23.3 - 24.7	3.3 - 3.5
189	2.2	2094	21.9 - 23.3	3.1 - 3.3
197	2.2	2290	20.5 - 21.9	2.9 - 3.1
212	2.4	2502	19.2 - 20.5	2.7 - 2.9
226	2.6	2728	17.8 - 19.2	2.5 - 2.7
241	2.7	2969	16.4 - 17.8	2.3 - 2.5
263	3.0	3232	15.1 - 16.4	2.2 - 2.3
286	3.3	3518	13.7 - 15.1	2.0 - 2.2
311	3.5	3829	12.3 - 13.7	1.8 - 2.0
336	3.8	4165	11.0 - 12.3	1.6 - 1.8
375	4.3	4540	9.6 - 11.0	1.4 - 1.6
408	4.7	4948	8.2 - 9.6	1.2 - 1.4
440	5.0	5388	6.8 - 8.2	1.0 - 1.2
482	5.5	5870	5.5 - 6.8	0.8 - 1.0
530	6.0	6400	4.1 - 5.5	0.6 - 0.8
571	6.5	6971	2.7 - 4.1	0.4 - 0.6
607	6.9	7579	1.4 - 2.7	0.2 - 0.4
622	7.1	8201	0.0 - 1.4	0.0 - 0.2
565	6.4	8766	0.0	0.0



PARK - Scaling info

Calculation: AEP_Vestas_Normal_01

Scaler settings

Name	EMD Default Measurement Mast Scaler
Terrain scaling	Measured Data Scaling (WAsP Stability / A-Parameter)
RIX correction	No RIX correction
Displacement height	from objects
Micro terrain flow model	Site data: RESGEN (5)

Site Data: Site data: RESGEN (5)

Obstacles:

All obstacles used

Roughness:

Terrain data files used in calculation:
C:\Users\student\Desktop\Exam_16_01_2025\Windpro_exam_16.01\ROUGHNESSLINE_ONLINEDATA_0.wpo
Min X: 518,359, Max X: 578,403, Min Y: 6,030,681, Max Y: 6,091,978, Width: 60,044 m, Height: 61,297 m

Orography:

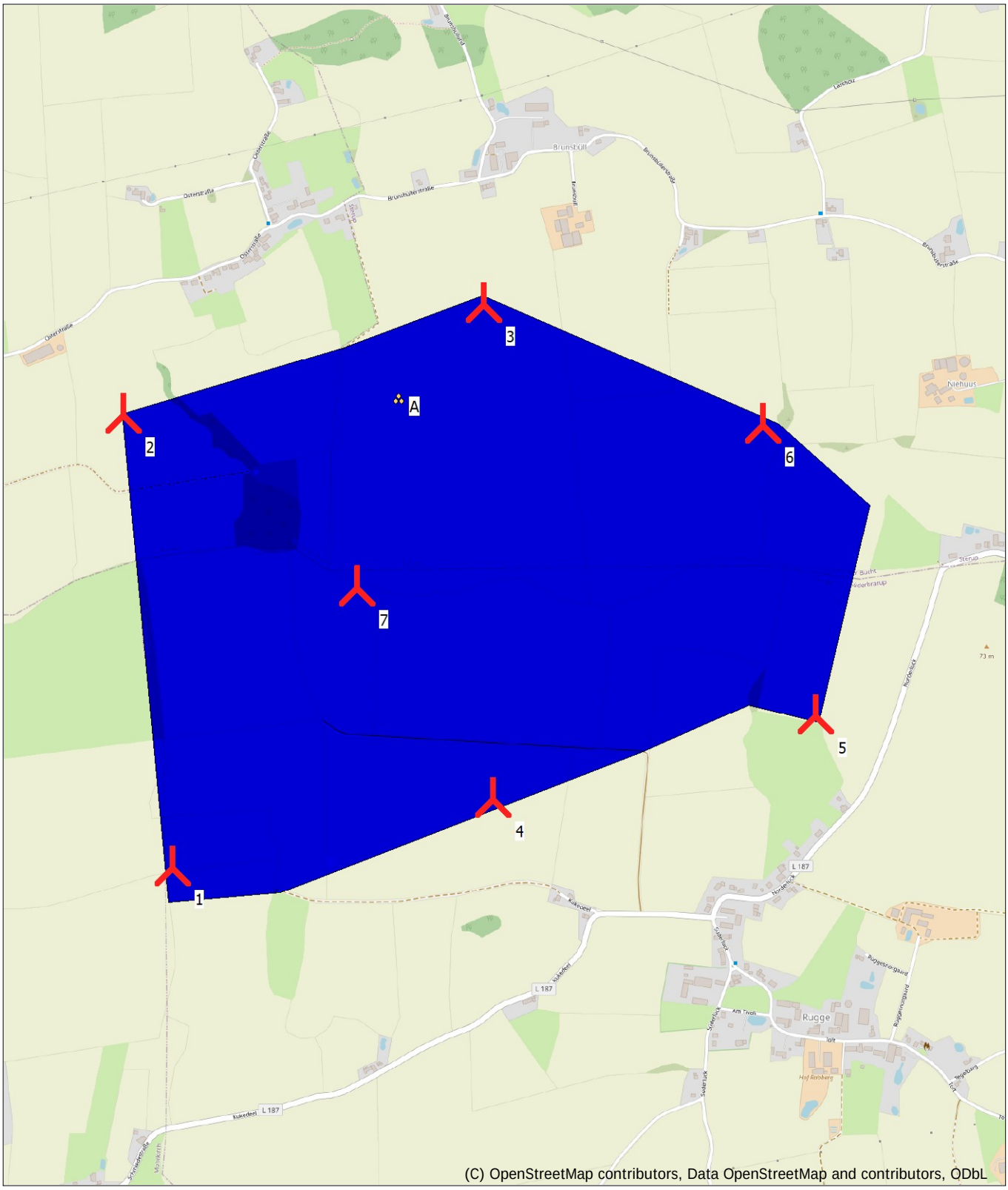
Terrain data files used in calculation:
C:\Users\student\Desktop\Exam_16_01_2025\Windpro_exam_16.01\CONTOURLINE_ONLINEDATA_0.wpo
Min X: 538,612, Max X: 558,177, Min Y: 6,051,218, Max Y: 6,071,644, Width: 19,565 m, Height: 20,426 m

Post calibration

Overall factor	1.0000
Overall offset	0.0000
By sector	No
By month	No
By hour	No
By wind speed	No

PARK - Map

Calculation: AEP_Vestas_Normal_01



0 250 500 750 1000m

Map: EMD OpenStreetMap , Print scale 1:12,500, Map center UTM (north)-ETRS89 Zone: 32 East: 548,534 North: 6,061,313

New WTG WTG area