

PARK - Main Result

Calculation: HKW MER 16MW incl HKN&HKZ

Wake Model N.O. Jensen (EMD) : 2005
Include mirror wakes

Calculation performed in UTM (north)-WGS84 Zone: 31
At the site centre the difference between grid north and true north is: 2.2°

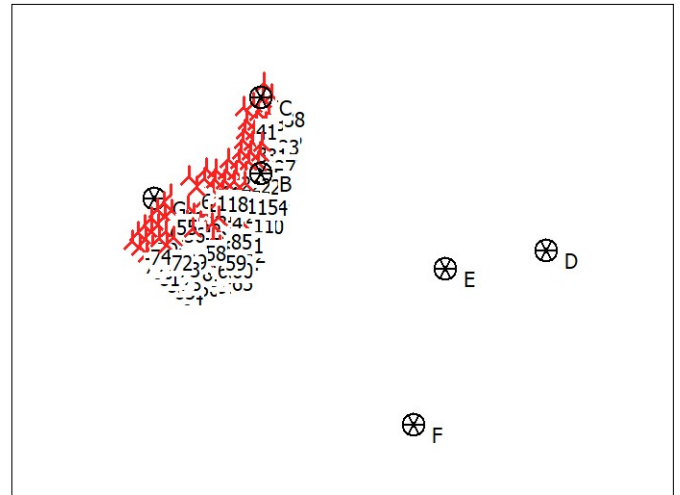
Power curve correction method
New windPRO method (adjusted IEC method, improved to match turbine control) <RECOMMENDED>
Air density calculation method
Fixed standard
Air density: 1.225 kg/m³ -> 100.0 % of Std

Wake Model Parameters
Terrain type Wake decay constant
HH: 100m Offshore 0.030

Omnidirectional displacement height from objects

Wake calculation settings
Angle [°] Wind speed [m/s]
start end step start end step
0.5 360.0 1.0 0.5 30.5 1.0

WASP version WASP 11 Version 11.06.0028



New WTG

Scale 1:1,000,000

Site Data

Key results for height 165.0 m above ground level

Terrain UTM (north)-ETRS89 Zone: 31

Easting Northing Name of wind Type
distribution

Wind energy Mean wind speed Equivalent roughness

					[kWh/m ²]	[m/s]	
A	548,060	5,829,150	HKW-03	WASP (WASP 11 Version 11.06.0028)	10,182	10.5	0.0
B	558,112	5,839,246	HKW-04	WASP (WASP 11 Version 11.06.0028)	10,107	10.4	0.0
C	558,004	5,849,256	HKW-05	WASP (WASP 11 Version 11.06.0028)	10,182	10.5	0.0
D	596,112	5,829,642	OWEZ	WASP (WASP 11 Version 11.06.0028)	9,227	10.1	0.0
E	582,817	5,827,056	Prinses Amalia	WASP (WASP 11 Version 11.06.0028)	9,685	10.3	0.0
F	578,881	5,806,416	Luchterduinen	WASP (WASP 11 Version 11.06.0028)	9,489	10.2	0.0
G	543,967	5,835,763	HKW-02	WASP (WASP 11 Version 11.06.0028)	10,207	10.5	0.0

Calculated Annual Energy for Wind Farm

WTG combination	Result PARK [MWh/y]	GROSS (no loss)		Wake loss [%]	Specific results ^{a)}		Full load hours [Hours/year]	Mean wind speed @hub height [m/s]
		Free WTGs [MWh/y]	Capacity factor [%]		Mean WTG result [MWh/y]			
Wind farm	7,478,756.8	8,313,150.7	10.0	56.7	79,561.2	4,973	10.5	

^{a)} Based on wake reduced results, but no other losses included

Calculated Annual Energy for each of 94 new WTGs with total 1,504.0 MW rated power

Links	Valid	WTG type Manufact.	Type-generator	Power, rated	Rotor diameter	Hub height	Power curve		Annual Energy			
							Creator	Name	Result	Wake loss	Free mean wind speed	
				[kW]	[m]	[m]			[MWh/y]	[%]	[m/s]	
1	B	No	Pondera	RD279HH165-16,000	16,000	279.0	164.5	USER	Theoretical PV curve at 16MW	80,053.6	9.3	10.43
2	A	No	Pondera	RD279HH165-16,000	16,000	279.0	164.5	USER	Theoretical PV curve at 16MW	77,712.5	12.2	10.46
3	G	No	Pondera	RD279HH165-16,000	16,000	279.0	164.5	USER	Theoretical PV curve at 16MW	79,256.4	10.5	10.47
4	B	No	Pondera	RD279HH165-16,000	16,000	279.0	164.5	USER	Theoretical PV curve at 16MW	78,077.8	11.6	10.43
5	G	No	Pondera	RD279HH165-16,000	16,000	279.0	164.5	USER	Theoretical PV curve at 16MW	80,631.8	9.0	10.47
6	G	No	Pondera	RD279HH165-16,000	16,000	279.0	164.5	USER	Theoretical PV curve at 16MW	82,986.8	6.3	10.47
7	C	No	Pondera	RD279HH165-16,000	16,000	279.0	164.5	USER	Theoretical PV curve at 16MW	85,346.9	3.6	10.46
8	B	No	Pondera	RD279HH165-16,000	16,000	279.0	164.5	USER	Theoretical PV curve at 16MW	78,480.2	11.1	10.43
9	B	No	Pondera	RD279HH165-16,000	16,000	279.0	164.5	USER	Theoretical PV curve at 16MW	77,614.4	12.1	10.43
10	B	No	Pondera	RD279HH165-16,000	16,000	279.0	164.5	USER	Theoretical PV curve at 16MW	80,362.5	9.0	10.43
11	B	No	Pondera	RD279HH165-16,000	16,000	279.0	164.5	USER	Theoretical PV curve at 16MW	78,661.0	10.9	10.43
12	B	No	Pondera	RD279HH165-16,000	16,000	279.0	164.5	USER	Theoretical PV curve at 16MW	76,996.0	12.8	10.43
13	B	No	Pondera	RD279HH165-16,000	16,000	279.0	164.5	USER	Theoretical PV curve at 16MW	77,547.2	12.2	10.43
14	B	No	Pondera	RD279HH165-16,000	16,000	279.0	164.5	USER	Theoretical PV curve at 16MW	79,628.7	9.8	10.43

To be continued on next page...

^{*}) Included in wake losses is influence from 355 WTG(s) in the neighborhood, which has status as "Reference WTGs", see separate report to identify these.

PARK - Main Result

Calculation: HKW MER 16MW incl HKN&HKZ

...continued from previous page

Links	WTG type		Type-generator	Power, rated	Rotor diameter	Hub height	Power curve		Annual Energy		Free mean wind speed [m/s]
	Valid	Manufact.					Creator	Name	Result	Wake loss	
				[kW]	[m]	[m]			[MWh/y]	[%]	
15 B	No	Pondera	RD279HH165-16,000	16,000	279.0	164.5	USER	Theoretical PV curve at 16MW	78,096.0	11.5	10.43
16 B	No	Pondera	RD279HH165-16,000	16,000	279.0	164.5	USER	Theoretical PV curve at 16MW	77,117.4	12.6	10.43
17 B	No	Pondera	RD279HH165-16,000	16,000	279.0	164.5	USER	Theoretical PV curve at 16MW	77,008.1	12.8	10.43
18 B	No	Pondera	RD279HH165-16,000	16,000	279.0	164.5	USER	Theoretical PV curve at 16MW	77,640.8	12.1	10.43
19 G	No	Pondera	RD279HH165-16,000	16,000	279.0	164.5	USER	Theoretical PV curve at 16MW	79,611.9	10.1	10.47
20 B	No	Pondera	RD279HH165-16,000	16,000	279.0	164.5	USER	Theoretical PV curve at 16MW	78,906.4	10.6	10.43
21 B	No	Pondera	RD279HH165-16,000	16,000	279.0	164.5	USER	Theoretical PV curve at 16MW	77,652.6	12.0	10.43
22 B	No	Pondera	RD279HH165-16,000	16,000	279.0	164.5	USER	Theoretical PV curve at 16MW	78,118.2	11.5	10.43
23 B	No	Pondera	RD279HH165-16,000	16,000	279.0	164.5	USER	Theoretical PV curve at 16MW	79,913.6	9.5	10.43
24 B	No	Pondera	RD279HH165-16,000	16,000	279.0	164.5	USER	Theoretical PV curve at 16MW	78,839.2	10.7	10.43
25 B	No	Pondera	RD279HH165-16,000	16,000	279.0	164.5	USER	Theoretical PV curve at 16MW	77,809.0	11.9	10.43
26 B	No	Pondera	RD279HH165-16,000	16,000	279.0	164.5	USER	Theoretical PV curve at 16MW	79,345.0	10.1	10.43
27 B	No	Pondera	RD279HH165-16,000	16,000	279.0	164.5	USER	Theoretical PV curve at 16MW	79,096.5	10.4	10.43
28 B	No	Pondera	RD279HH165-16,000	16,000	279.0	164.5	USER	Theoretical PV curve at 16MW	78,422.1	11.2	10.43
29 B	No	Pondera	RD279HH165-16,000	16,000	279.0	164.5	USER	Theoretical PV curve at 16MW	80,195.8	9.2	10.43
30 C	No	Pondera	RD279HH165-16,000	16,000	279.0	164.5	USER	Theoretical PV curve at 16MW	79,671.7	10.0	10.46
31 C	No	Pondera	RD279HH165-16,000	16,000	279.0	164.5	USER	Theoretical PV curve at 16MW	78,979.4	10.7	10.46
32 C	No	Pondera	RD279HH165-16,000	16,000	279.0	164.5	USER	Theoretical PV curve at 16MW	80,965.3	8.5	10.46
33 C	No	Pondera	RD279HH165-16,000	16,000	279.0	164.5	USER	Theoretical PV curve at 16MW	80,153.4	9.4	10.46
34 C	No	Pondera	RD279HH165-16,000	16,000	279.0	164.5	USER	Theoretical PV curve at 16MW	79,633.1	10.0	10.46
35 C	No	Pondera	RD279HH165-16,000	16,000	279.0	164.5	USER	Theoretical PV curve at 16MW	81,630.7	7.8	10.46
36 C	No	Pondera	RD279HH165-16,000	16,000	279.0	164.5	USER	Theoretical PV curve at 16MW	80,968.3	8.5	10.46
37 C	No	Pondera	RD279HH165-16,000	16,000	279.0	164.5	USER	Theoretical PV curve at 16MW	80,866.2	8.6	10.46
38 C	No	Pondera	RD279HH165-16,000	16,000	279.0	164.5	USER	Theoretical PV curve at 16MW	83,281.9	5.9	10.46
39 C	No	Pondera	RD279HH165-16,000	16,000	279.0	164.5	USER	Theoretical PV curve at 16MW	82,110.2	7.2	10.46
40 C	No	Pondera	RD279HH165-16,000	16,000	279.0	164.5	USER	Theoretical PV curve at 16MW	82,328.1	7.0	10.46
41 C	No	Pondera	RD279HH165-16,000	16,000	279.0	164.5	USER	Theoretical PV curve at 16MW	83,753.1	5.4	10.46
42 B	No	Pondera	RD279HH165-16,000	16,000	279.0	164.5	USER	Theoretical PV curve at 16MW	78,943.4	10.6	10.43
43 B	No	Pondera	RD279HH165-16,000	16,000	279.0	164.5	USER	Theoretical PV curve at 16MW	77,463.3	12.3	10.43
44 B	No	Pondera	RD279HH165-16,000	16,000	279.0	164.5	USER	Theoretical PV curve at 16MW	77,283.5	12.5	10.43
45 B	No	Pondera	RD279HH165-16,000	16,000	279.0	164.5	USER	Theoretical PV curve at 16MW	77,792.1	11.9	10.43
46 B	No	Pondera	RD279HH165-16,000	16,000	279.0	164.5	USER	Theoretical PV curve at 16MW	78,884.7	10.6	10.43
47 B	No	Pondera	RD279HH165-16,000	16,000	279.0	164.5	USER	Theoretical PV curve at 16MW	80,705.4	8.6	10.43
48 G	No	Pondera	RD279HH165-16,000	16,000	279.0	164.5	USER	Theoretical PV curve at 16MW	81,771.3	7.7	10.47
49 A	No	Pondera	RD279HH165-16,000	16,000	279.0	164.5	USER	Theoretical PV curve at 16MW	78,739.8	11.0	10.46
50 A	No	Pondera	RD279HH165-16,000	16,000	279.0	164.5	USER	Theoretical PV curve at 16MW	82,505.4	6.8	10.46
51 A	No	Pondera	RD279HH165-16,000	16,000	279.0	164.5	USER	Theoretical PV curve at 16MW	77,314.7	12.6	10.46
52 A	No	Pondera	RD279HH165-16,000	16,000	279.0	164.5	USER	Theoretical PV curve at 16MW	79,204.9	10.5	10.46
53 A	No	Pondera	RD279HH165-16,000	16,000	279.0	164.5	USER	Theoretical PV curve at 16MW	77,012.4	13.0	10.46
54 A	No	Pondera	RD279HH165-16,000	16,000	279.0	164.5	USER	Theoretical PV curve at 16MW	78,953.1	10.8	10.46
55 G	No	Pondera	RD279HH165-16,000	16,000	279.0	164.5	USER	Theoretical PV curve at 16MW	81,034.0	8.5	10.47
56 G	No	Pondera	RD279HH165-16,000	16,000	279.0	164.5	USER	Theoretical PV curve at 16MW	78,791.3	11.0	10.47
57 A	No	Pondera	RD279HH165-16,000	16,000	279.0	164.5	USER	Theoretical PV curve at 16MW	78,533.6	11.3	10.46
58 A	No	Pondera	RD279HH165-16,000	16,000	279.0	164.5	USER	Theoretical PV curve at 16MW	77,532.1	12.4	10.46
59 A	No	Pondera	RD279HH165-16,000	16,000	279.0	164.5	USER	Theoretical PV curve at 16MW	77,495.8	12.4	10.46
60 A	No	Pondera	RD279HH165-16,000	16,000	279.0	164.5	USER	Theoretical PV curve at 16MW	79,325.1	10.4	10.46
61 G	No	Pondera	RD279HH165-16,000	16,000	279.0	164.5	USER	Theoretical PV curve at 16MW	80,990.0	8.5	10.47
62 G	No	Pondera	RD279HH165-16,000	16,000	279.0	164.5	USER	Theoretical PV curve at 16MW	78,389.3	11.5	10.47
63 A	No	Pondera	RD279HH165-16,000	16,000	279.0	164.5	USER	Theoretical PV curve at 16MW	78,299.7	11.5	10.46
64 A	No	Pondera	RD279HH165-16,000	16,000	279.0	164.5	USER	Theoretical PV curve at 16MW	79,773.2	9.9	10.46
65 A	No	Pondera	RD279HH165-16,000	16,000	279.0	164.5	USER	Theoretical PV curve at 16MW	82,575.1	6.7	10.46
66 G	No	Pondera	RD279HH165-16,000	16,000	279.0	164.5	USER	Theoretical PV curve at 16MW	80,902.6	8.6	10.47
67 G	No	Pondera	RD279HH165-16,000	16,000	279.0	164.5	USER	Theoretical PV curve at 16MW	78,248.6	11.6	10.47
68 A	No	Pondera	RD279HH165-16,000	16,000	279.0	164.5	USER	Theoretical PV curve at 16MW	77,331.2	12.6	10.46
69 A	No	Pondera	RD279HH165-16,000	16,000	279.0	164.5	USER	Theoretical PV curve at 16MW	77,787.7	12.1	10.46
70 G	No	Pondera	RD279HH165-16,000	16,000	279.0	164.5	USER	Theoretical PV curve at 16MW	81,443.0	8.0	10.47
71 G	No	Pondera	RD279HH165-16,000	16,000	279.0	164.5	USER	Theoretical PV curve at 16MW	78,708.4	11.1	10.47
72 A	No	Pondera	RD279HH165-16,000	16,000	279.0	164.5	USER	Theoretical PV curve at 16MW	77,715.1	12.2	10.46
73 A	No	Pondera	RD279HH165-16,000	16,000	279.0	164.5	USER	Theoretical PV curve at 16MW	77,996.4	11.9	10.46
74 G	No	Pondera	RD279HH165-16,000	16,000	279.0	164.5	USER	Theoretical PV curve at 16MW	82,339.1	7.0	10.47
75 A	No	Pondera	RD279HH165-16,000	16,000	279.0	164.5	USER	Theoretical PV curve at 16MW	79,968.4	9.6	10.46

To be continued on next page...

PARK - Main Result

Calculation: HKW MER 16MW incl HKN&HKZ

...continued from previous page

Links	WTG type		Type-generator	Power, rated	Rotor diameter	Hub height	Power curve		Annual Energy		
	Valid	Manufact.					Creator	Name	Result	Wake loss	Free mean wind speed
				[kW]	[m]	[m]			[MWh/y]	[%]	[m/s]
76 A	No	Pondera	RD279HH165-16,000	16,000	279.0	164.5	USER	Theoretical PV curve at 16MW	79,050.8	10.7	10.46
77 A	No	Pondera	RD279HH165-16,000	16,000	279.0	164.5	USER	Theoretical PV curve at 16MW	79,119.0	10.6	10.46
78 A	No	Pondera	RD279HH165-16,000	16,000	279.0	164.5	USER	Theoretical PV curve at 16MW	79,920.1	9.7	10.46
79 G	No	Pondera	RD279HH165-16,000	16,000	279.0	164.5	USER	Theoretical PV curve at 16MW	84,363.2	4.7	10.47
80 A	No	Pondera	RD279HH165-16,000	16,000	279.0	164.5	USER	Theoretical PV curve at 16MW	82,725.4	6.5	10.46
81 A	No	Pondera	RD279HH165-16,000	16,000	279.0	164.5	USER	Theoretical PV curve at 16MW	82,197.5	7.1	10.46
82 A	No	Pondera	RD279HH165-16,000	16,000	279.0	164.5	USER	Theoretical PV curve at 16MW	82,231.8	7.1	10.46
83 A	No	Pondera	RD279HH165-16,000	16,000	279.0	164.5	USER	Theoretical PV curve at 16MW	82,743.9	6.5	10.46
84 A	No	Pondera	RD279HH165-16,000	16,000	279.0	164.5	USER	Theoretical PV curve at 16MW	83,847.9	5.2	10.46
85 A	No	Pondera	RD279HH165-16,000	16,000	279.0	164.5	USER	Theoretical PV curve at 16MW	77,078.8	12.9	10.46
86 A	No	Pondera	RD279HH165-16,000	16,000	279.0	164.5	USER	Theoretical PV curve at 16MW	76,598.9	13.4	10.46
87 A	No	Pondera	RD279HH165-16,000	16,000	279.0	164.5	USER	Theoretical PV curve at 16MW	76,832.8	13.2	10.46
88 A	No	Pondera	RD279HH165-16,000	16,000	279.0	164.5	USER	Theoretical PV curve at 16MW	77,866.3	12.0	10.46
89 A	No	Pondera	RD279HH165-16,000	16,000	279.0	164.5	USER	Theoretical PV curve at 16MW	79,620.5	10.0	10.46
90 A	No	Pondera	RD279HH165-16,000	16,000	279.0	164.5	USER	Theoretical PV curve at 16MW	80,260.6	9.3	10.46
91 A	No	Pondera	RD279HH165-16,000	16,000	279.0	164.5	USER	Theoretical PV curve at 16MW	82,162.1	7.2	10.46
92 G	No	Pondera	RD279HH165-16,000	16,000	279.0	164.5	USER	Theoretical PV curve at 16MW	79,826.4	9.9	10.47
93 A	No	Pondera	RD279HH165-16,000	16,000	279.0	164.5	USER	Theoretical PV curve at 16MW	77,902.6	12.0	10.46
94 A	No	Pondera	RD279HH165-16,000	16,000	279.0	164.5	USER	Theoretical PV curve at 16MW	77,184.1	12.8	10.46

Annual Energy results do not include any losses apart from wake losses. For expected NET AEP (expected sold production), see report Loss & Uncertainty.

WTG siting

UTM (north)-ETRS89 Zone: 31

	Easting	Northing	Z	Row data/Description
	[m]			
1 New	555,418	5,832,984	0.0	Pondera RD279HH165 16000 279.0 !O! hub: 164.5 m (TOT: 304.0 m) (8053)
2 New	550,836	5,833,940	0.0	Pondera RD279HH165 16000 279.0 !O! hub: 164.5 m (TOT: 304.0 m) (8054)
3 New	550,605	5,835,862	0.0	Pondera RD279HH165 16000 279.0 !O! hub: 164.5 m (TOT: 304.0 m) (8056)
4 New	552,591	5,835,772	0.0	Pondera RD279HH165 16000 279.0 !O! hub: 164.5 m (TOT: 304.0 m) (8059)
5 New	549,538	5,837,302	0.0	Pondera RD279HH165 16000 279.0 !O! hub: 164.5 m (TOT: 304.0 m) (8060)
6 New	548,471	5,838,743	0.0	Pondera RD279HH165 16000 279.0 !O! hub: 164.5 m (TOT: 304.0 m) (8062)
7 New	558,315	5,851,100	0.0	Pondera RD279HH165 16000 279.0 !O! hub: 164.5 m (TOT: 304.0 m) (8073)
8 New	555,114	5,834,331	0.0	Pondera RD279HH165 16000 279.0 !O! hub: 164.5 m (TOT: 304.0 m) (8055.1)
9 New	553,797	5,834,473	0.0	Pondera RD279HH165 16000 279.0 !O! hub: 164.5 m (TOT: 304.0 m) (8055.2)
10 New	556,681	5,835,489	0.0	Pondera RD279HH165 16000 279.0 !O! hub: 164.5 m (TOT: 304.0 m) (8058.1)
11 New	555,364	5,835,630	0.0	Pondera RD279HH165 16000 279.0 !O! hub: 164.5 m (TOT: 304.0 m) (8058.2)
12 New	553,002	5,836,932	0.0	Pondera RD279HH165 16000 279.0 !O! hub: 164.5 m (TOT: 304.0 m) (8061.1)
13 New	551,681	5,837,034	0.0	Pondera RD279HH165 16000 279.0 !O! hub: 164.5 m (TOT: 304.0 m) (8061.2)
14 New	557,175	5,837,934	0.0	Pondera RD279HH165 16000 279.0 !O! hub: 164.5 m (TOT: 304.0 m) (8063.1)
15 New	555,854	5,838,035	0.0	Pondera RD279HH165 16000 279.0 !O! hub: 164.5 m (TOT: 304.0 m) (8063.2)
16 New	554,533	5,838,136	0.0	Pondera RD279HH165 16000 279.0 !O! hub: 164.5 m (TOT: 304.0 m) (8063.3)
17 New	553,213	5,838,237	0.0	Pondera RD279HH165 16000 279.0 !O! hub: 164.5 m (TOT: 304.0 m) (8063.4)
18 New	551,892	5,838,339	0.0	Pondera RD279HH165 16000 279.0 !O! hub: 164.5 m (TOT: 304.0 m) (8063.5)
19 New	550,571	5,838,441	0.0	Pondera RD279HH165 16000 279.0 !O! hub: 164.5 m (TOT: 304.0 m) (8063.6)
20 New	557,680	5,840,684	0.0	Pondera RD279HH165 16000 279.0 !O! hub: 164.5 m (TOT: 304.0 m) (8064.1)
21 New	556,363	5,840,825	0.0	Pondera RD279HH165 16000 279.0 !O! hub: 164.5 m (TOT: 304.0 m) (8064.2)
22 New	555,046	5,840,965	0.0	Pondera RD279HH165 16000 279.0 !O! hub: 164.5 m (TOT: 304.0 m) (8064.3)
23 New	553,729	5,841,106	0.0	Pondera RD279HH165 16000 279.0 !O! hub: 164.5 m (TOT: 304.0 m) (8064.4)
24 New	557,930	5,841,983	0.0	Pondera RD279HH165 16000 279.0 !O! hub: 164.5 m (TOT: 304.0 m) (8065.1)
25 New	556,613	5,842,123	0.0	Pondera RD279HH165 16000 279.0 !O! hub: 164.5 m (TOT: 304.0 m) (8065.2)
26 New	555,296	5,842,264	0.0	Pondera RD279HH165 16000 279.0 !O! hub: 164.5 m (TOT: 304.0 m) (8065.3)
27 New	558,180	5,843,281	0.0	Pondera RD279HH165 16000 279.0 !O! hub: 164.5 m (TOT: 304.0 m) (8066.1)
28 New	556,863	5,843,422	0.0	Pondera RD279HH165 16000 279.0 !O! hub: 164.5 m (TOT: 304.0 m) (8066.2)
29 New	555,546	5,843,562	0.0	Pondera RD279HH165 16000 279.0 !O! hub: 164.5 m (TOT: 304.0 m) (8066.3)
30 New	558,430	5,844,580	0.0	Pondera RD279HH165 16000 279.0 !O! hub: 164.5 m (TOT: 304.0 m) (8067.1)
31 New	557,113	5,844,720	0.0	Pondera RD279HH165 16000 279.0 !O! hub: 164.5 m (TOT: 304.0 m) (8067.2)
32 New	555,795	5,844,861	0.0	Pondera RD279HH165 16000 279.0 !O! hub: 164.5 m (TOT: 304.0 m) (8067.3)
33 New	558,680	5,845,879	0.0	Pondera RD279HH165 16000 279.0 !O! hub: 164.5 m (TOT: 304.0 m) (8068.1)

To be continued on next page...

PARK - Main Result

Calculation: HKW MER 16MW incl HKN&HKZ

...continued from previous page

UTM (north)-ETRS89 Zone: 31

	Easting	Northing	Z	Row data/Description
			[m]	
34 New	557,363	5,846,019	0.0	Pondera RD279HH165 16000 279.0 !O! hub: 164.5 m (TOT: 304.0 m) (8068.2)
35 New	556,045	5,846,159	0.0	Pondera RD279HH165 16000 279.0 !O! hub: 164.5 m (TOT: 304.0 m) (8068.3)
36 New	558,930	5,847,178	0.0	Pondera RD279HH165 16000 279.0 !O! hub: 164.5 m (TOT: 304.0 m) (8069.1)
37 New	557,612	5,847,318	0.0	Pondera RD279HH165 16000 279.0 !O! hub: 164.5 m (TOT: 304.0 m) (8069.2)
38 New	559,360	5,849,570	0.0	Pondera RD279HH165 16000 279.0 !O! hub: 164.5 m (TOT: 304.0 m) (8070.1)
39 New	558,146	5,849,041	0.0	Pondera RD279HH165 16000 279.0 !O! hub: 164.5 m (TOT: 304.0 m) (8070.2)
40 New	556,931	5,848,512	0.0	Pondera RD279HH165 16000 279.0 !O! hub: 164.5 m (TOT: 304.0 m) (8070.3)
41 New	555,716	5,847,983	0.0	Pondera RD279HH165 16000 279.0 !O! hub: 164.5 m (TOT: 304.0 m) (8070.4)
42 New	557,389	5,839,233	0.0	Pondera RD279HH165 16000 279.0 !O! hub: 164.5 m (TOT: 304.0 m) (8072.1)
43 New	556,068	5,839,334	0.0	Pondera RD279HH165 16000 279.0 !O! hub: 164.5 m (TOT: 304.0 m) (8072.2)
44 New	554,748	5,839,434	0.0	Pondera RD279HH165 16000 279.0 !O! hub: 164.5 m (TOT: 304.0 m) (8072.3)
45 New	553,427	5,839,536	0.0	Pondera RD279HH165 16000 279.0 !O! hub: 164.5 m (TOT: 304.0 m) (8072.4)
46 New	552,106	5,839,637	0.0	Pondera RD279HH165 16000 279.0 !O! hub: 164.5 m (TOT: 304.0 m) (8072.5)
47 New	550,785	5,839,739	0.0	Pondera RD279HH165 16000 279.0 !O! hub: 164.5 m (TOT: 304.0 m) (8072.6)
48 New	546,091	5,836,249	0.0	Pondera RD279HH165 16000 279.0 !O! hub: 164.5 m (TOT: 304.0 m) (8116)
49 New	548,330	5,830,759	0.0	Pondera RD279HH165 16000 279.0 !O! hub: 164.5 m (TOT: 304.0 m) (8122)
50 New	548,177	5,827,136	0.0	Pondera RD279HH165 16000 279.0 !O! hub: 164.5 m (TOT: 304.0 m) (8126.2)
51 New	553,432	5,832,601	0.0	Pondera RD279HH165 16000 279.0 !O! hub: 164.5 m (TOT: 304.0 m) (8115.1)
52 New	554,377	5,831,688	0.0	Pondera RD279HH165 16000 279.0 !O! hub: 164.5 m (TOT: 304.0 m) (8115.2)
53 New	552,583	5,831,596	0.0	Pondera RD279HH165 16000 279.0 !O! hub: 164.5 m (TOT: 304.0 m) (8117.1)
54 New	553,528	5,830,683	0.0	Pondera RD279HH165 16000 279.0 !O! hub: 164.5 m (TOT: 304.0 m) (8117.2)
55 New	545,243	5,835,245	0.0	Pondera RD279HH165 16000 279.0 !O! hub: 164.5 m (TOT: 304.0 m) (8118.1)
56 New	546,186	5,834,331	0.0	Pondera RD279HH165 16000 279.0 !O! hub: 164.5 m (TOT: 304.0 m) (8118.2)
57 New	548,238	5,832,880	0.0	Pondera RD279HH165 16000 279.0 !O! hub: 164.5 m (TOT: 304.0 m) (8119.1)
58 New	549,074	5,831,866	0.0	Pondera RD279HH165 16000 279.0 !O! hub: 164.5 m (TOT: 304.0 m) (8119.2)
59 New	551,734	5,830,591	0.0	Pondera RD279HH165 16000 279.0 !O! hub: 164.5 m (TOT: 304.0 m) (8120.1)
60 New	552,679	5,829,678	0.0	Pondera RD279HH165 16000 279.0 !O! hub: 164.5 m (TOT: 304.0 m) (8120.2)
61 New	544,330	5,834,322	0.0	Pondera RD279HH165 16000 279.0 !O! hub: 164.5 m (TOT: 304.0 m) (8121.1)
62 New	545,361	5,833,507	0.0	Pondera RD279HH165 16000 279.0 !O! hub: 164.5 m (TOT: 304.0 m) (8121.2)
63 New	550,722	5,829,666	0.0	Pondera RD279HH165 16000 279.0 !O! hub: 164.5 m (TOT: 304.0 m) (8123.1)
64 New	551,731	5,828,823	0.0	Pondera RD279HH165 16000 279.0 !O! hub: 164.5 m (TOT: 304.0 m) (8123.2)
65 New	552,740	5,827,981	0.0	Pondera RD279HH165 16000 279.0 !O! hub: 164.5 m (TOT: 304.0 m) (8123.3)
66 New	543,504	5,833,240	0.0	Pondera RD279HH165 16000 279.0 !O! hub: 164.5 m (TOT: 304.0 m) (8124.1)
67 New	544,506	5,832,390	0.0	Pondera RD279HH165 16000 279.0 !O! hub: 164.5 m (TOT: 304.0 m) (8124.2)
68 New	545,508	5,831,540	0.0	Pondera RD279HH165 16000 279.0 !O! hub: 164.5 m (TOT: 304.0 m) (8124.3)
69 New	546,511	5,830,690	0.0	Pondera RD279HH165 16000 279.0 !O! hub: 164.5 m (TOT: 304.0 m) (8124.4)
70 New	542,631	5,832,274	0.0	Pondera RD279HH165 16000 279.0 !O! hub: 164.5 m (TOT: 304.0 m) (8125.1)
71 New	543,633	5,831,424	0.0	Pondera RD279HH165 16000 279.0 !O! hub: 164.5 m (TOT: 304.0 m) (8125.2)
72 New	544,635	5,830,573	0.0	Pondera RD279HH165 16000 279.0 !O! hub: 164.5 m (TOT: 304.0 m) (8125.3)
73 New	545,637	5,829,723	0.0	Pondera RD279HH165 16000 279.0 !O! hub: 164.5 m (TOT: 304.0 m) (8125.4)
74 New	541,781	5,831,285	0.0	Pondera RD279HH165 16000 279.0 !O! hub: 164.5 m (TOT: 304.0 m) (8127.1)
75 New	542,782	5,830,434	0.0	Pondera RD279HH165 16000 279.0 !O! hub: 164.5 m (TOT: 304.0 m) (8127.2)
76 New	543,784	5,829,584	0.0	Pondera RD279HH165 16000 279.0 !O! hub: 164.5 m (TOT: 304.0 m) (8127.3)
77 New	544,786	5,828,734	0.0	Pondera RD279HH165 16000 279.0 !O! hub: 164.5 m (TOT: 304.0 m) (8127.4)
78 New	545,788	5,827,883	0.0	Pondera RD279HH165 16000 279.0 !O! hub: 164.5 m (TOT: 304.0 m) (8127.5)
79 New	541,001	5,830,227	0.0	Pondera RD279HH165 16000 279.0 !O! hub: 164.5 m (TOT: 304.0 m) (8128.1)
80 New	542,003	5,829,376	0.0	Pondera RD279HH165 16000 279.0 !O! hub: 164.5 m (TOT: 304.0 m) (8128.2)
81 New	543,004	5,828,526	0.0	Pondera RD279HH165 16000 279.0 !O! hub: 164.5 m (TOT: 304.0 m) (8128.3)
82 New	544,006	5,827,675	0.0	Pondera RD279HH165 16000 279.0 !O! hub: 164.5 m (TOT: 304.0 m) (8128.4)
83 New	545,008	5,826,825	0.0	Pondera RD279HH165 16000 279.0 !O! hub: 164.5 m (TOT: 304.0 m) (8128.5)
84 New	546,010	5,825,974	0.0	Pondera RD279HH165 16000 279.0 !O! hub: 164.5 m (TOT: 304.0 m) (8128.6)
85 New	552,494	5,833,504	0.0	Pondera RD279HH165 16000 279.0 !O! hub: 164.5 m (TOT: 304.0 m) (8129.1)
86 New	551,643	5,832,502	0.0	Pondera RD279HH165 16000 279.0 !O! hub: 164.5 m (TOT: 304.0 m) (8129.2)
87 New	550,793	5,831,500	0.0	Pondera RD279HH165 16000 279.0 !O! hub: 164.5 m (TOT: 304.0 m) (8129.3)
88 New	549,942	5,830,499	0.0	Pondera RD279HH165 16000 279.0 !O! hub: 164.5 m (TOT: 304.0 m) (8129.4)
89 New	548,719	5,829,277	0.0	Pondera RD279HH165 16000 279.0 !O! hub: 164.5 m (TOT: 304.0 m) (8130.1)
90 New	549,721	5,828,428	0.0	Pondera RD279HH165 16000 279.0 !O! hub: 164.5 m (TOT: 304.0 m) (8130.2)
91 New	550,724	5,827,578	0.0	Pondera RD279HH165 16000 279.0 !O! hub: 164.5 m (TOT: 304.0 m) (8130.3)
92 New	548,367	5,834,783	0.0	Pondera RD279HH165 16000 279.0 !O! hub: 164.5 m (TOT: 304.0 m) (8133.1)
93 New	549,203	5,833,769	0.0	Pondera RD279HH165 16000 279.0 !O! hub: 164.5 m (TOT: 304.0 m) (8133.2)
94 New	550,040	5,832,756	0.0	Pondera RD279HH165 16000 279.0 !O! hub: 164.5 m (TOT: 304.0 m) (8133.3)

PARK - Reference WTGs

Calculation: HKW MER 16MW incl HKN&HKZ

Wake Model N.O. Jensen (EMD) : 2005
Include mirror wakes

Calculation performed in UTM (north)-WGS84 Zone: 31
At the site centre the difference between grid north and true north is: 2.2°

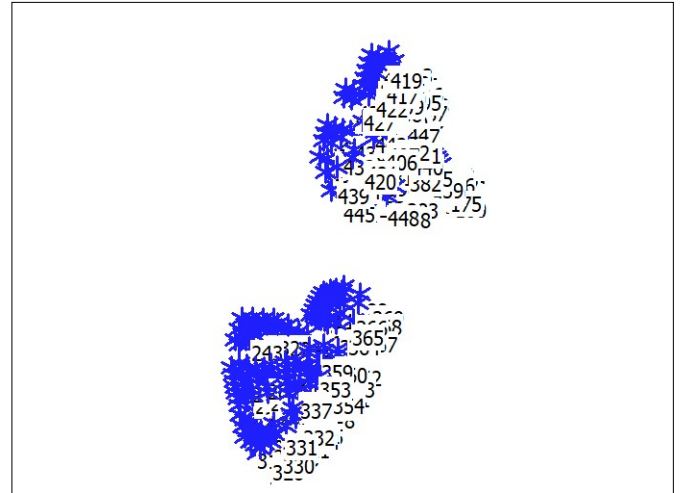
Power curve correction method
New windPRO method (adjusted IEC method, improved to match turbine control) <RECOMMENDED>
Air density calculation method
Fixed standard
Air density: 1.225 kg/m³ -> 100.0 % of Std

Wake Model Parameters
Terrain type Wake decay constant
HH: 100m Offshore 0.030

Omnidirectional displacement height from objects

Wake calculation settings
Angle [°] Wind speed [m/s]
start end step start end step
0.5 360.0 1.0 0.5 30.5 1.0

WAsP version WAsP 11 Version 11.06.0028



▲ New WTG

★ Existing WTG

Key results for height 165.0 m above ground level

Terrain UTM (north)-ETRS89 Zone: 31

Easting	Northing	Name of wind distribution	Type
A 548,060	5,829,150	HKW-03	WAsP (WAsP 11 Version 11.06.0028)
B 558,112	5,839,246	HKW-04	WAsP (WAsP 11 Version 11.06.0028)
C 558,004	5,849,256	HKW-05	WAsP (WAsP 11 Version 11.06.0028)
D 596,112	5,829,642	OWEZ	WAsP (WAsP 11 Version 11.06.0028)
E 582,817	5,827,056	Prinses Amalia	WAsP (WAsP 11 Version 11.06.0028)
F 578,881	5,806,416	Luchterduinen	WAsP (WAsP 11 Version 11.06.0028)
G 543,967	5,835,763	HKW-02	WAsP (WAsP 11 Version 11.06.0028)

Wind energy Mean wind speed Equivalent roughness

	Wind energy [kWh/m²]	Mean wind speed [m/s]	Equivalent roughness
A	10,182	10.5	0.0
B	10,107	10.4	0.0
C	10,182	10.5	0.0
D	9,227	10.1	0.0
E	9,685	10.3	0.0
F	9,489	10.2	0.0
G	10,207	10.5	0.0

Calculated Annual Energy for reference WTGs

Calculated prod. without new WTGs [MWh/y]	GROSS (no loss) Free WTGs [MWh/y]	Wake loss [%]	Specific results		Full load hours [Hours/year]	Mean wind speed @hub height [m/s]	Actual wind corrected energy [MWh/y]	Goodness Factor [%]
			Capacity factor [%]	Mean WTG result [MWh/y]				
12,888,725.0	13,814,928.4	6.8	57.9	36,306.3	5,078	9.6	0.0	

Calculated Annual Energy for each of 355 reference WTGs with total 2,538.0 MW rated power

Links	WTG type Valid	Manufact.	Type-generator	Power, rated [kW]	Rotor diameter [m]	Hub height [m]	Power curve Creator Name	Calculated prod. without new WTGs [MWh/y]	Goodness Factor [%]
95 E	Yes	VESTAS	V80-2.0MW offshore-2,000	2,000	80.0	60.0	EMD Level 0 - calculated - - 09/2001	8,086.1	0
96 E	Yes	VESTAS	V80-2.0MW offshore-2,000	2,000	80.0	60.0	EMD Level 0 - calculated - - 09/2001	8,035.8	0
97 E	Yes	VESTAS	V80-2.0MW offshore-2,000	2,000	80.0	60.0	EMD Level 0 - calculated - - 09/2001	8,043.3	0
98 E	Yes	VESTAS	V80-2.0MW offshore-2,000	2,000	80.0	60.0	EMD Level 0 - calculated - - 09/2001	8,174.9	0
99 E	Yes	VESTAS	V80-2.0MW offshore-2,000	2,000	80.0	60.0	EMD Level 0 - calculated - - 09/2001	7,761.3	0
100 E	Yes	VESTAS	V80-2.0MW offshore-2,000	2,000	80.0	60.0	EMD Level 0 - calculated - - 09/2001	7,928.0	0
101 E	Yes	VESTAS	V80-2.0MW offshore-2,000	2,000	80.0	60.0	EMD Level 0 - calculated - - 09/2001	7,682.7	0
102 E	Yes	VESTAS	V80-2.0MW offshore-2,000	2,000	80.0	60.0	EMD Level 0 - calculated - - 09/2001	8,056.3	0
103 E	Yes	VESTAS	V80-2.0MW offshore-2,000	2,000	80.0	60.0	EMD Level 0 - calculated - - 09/2001	7,700.7	0
104 E	Yes	VESTAS	V80-2.0MW offshore-2,000	2,000	80.0	60.0	EMD Level 0 - calculated - - 09/2001	7,820.2	0
105 E	Yes	VESTAS	V80-2.0MW offshore-2,000	2,000	80.0	60.0	EMD Level 0 - calculated - - 09/2001	7,580.7	0
106 E	Yes	VESTAS	V80-2.0MW offshore-2,000	2,000	80.0	60.0	EMD Level 0 - calculated - - 09/2001	7,522.2	0
107 E	Yes	VESTAS	V80-2.0MW offshore-2,000	2,000	80.0	60.0	EMD Level 0 - calculated - - 09/2001	8,074.2	0
108 E	Yes	VESTAS	V80-2.0MW offshore-2,000	2,000	80.0	60.0	EMD Level 0 - calculated - - 09/2001	7,626.8	0
109 E	Yes	VESTAS	V80-2.0MW offshore-2,000	2,000	80.0	60.0	EMD Level 0 - calculated - - 09/2001	7,533.3	0
110 E	Yes	VESTAS	V80-2.0MW offshore-2,000	2,000	80.0	60.0	EMD Level 0 - calculated - - 09/2001	7,784.5	0

To be continued on next page...

PARK - Reference WTGs

Calculation: HKW MER 16MW incl HKN&HKZ

...continued from previous page

Links	Valid	WTG type Manufact.	Type-generator	Power rated	Rotor diameter	Hub height	Power curve		Calculated prod. without new WTGs [MWh/y]	Goodness Factor [%]
							Creator	Name		
111 E	Yes	VESTAS	V80-2.0MW offshore-2,000	2,000	80.0	60.0	EMD	Level 0 - calculated -- 09/2001	7,648.8	0
112 E	Yes	VESTAS	V80-2.0MW offshore-2,000	2,000	80.0	60.0	EMD	Level 0 - calculated -- 09/2001	8,053.7	0
113 E	Yes	VESTAS	V80-2.0MW offshore-2,000	2,000	80.0	60.0	EMD	Level 0 - calculated -- 09/2001	7,757.5	0
114 E	Yes	VESTAS	V80-2.0MW offshore-2,000	2,000	80.0	60.0	EMD	Level 0 - calculated -- 09/2001	7,411.2	0
115 E	Yes	VESTAS	V80-2.0MW offshore-2,000	2,000	80.0	60.0	EMD	Level 0 - calculated -- 09/2001	7,457.7	0
116 E	Yes	VESTAS	V80-2.0MW offshore-2,000	2,000	80.0	60.0	EMD	Level 0 - calculated -- 09/2001	7,408.1	0
117 E	Yes	VESTAS	V80-2.0MW offshore-2,000	2,000	80.0	60.0	EMD	Level 0 - calculated -- 09/2001	7,498.6	0
118 E	Yes	VESTAS	V80-2.0MW offshore-2,000	2,000	80.0	60.0	EMD	Level 0 - calculated -- 09/2001	8,110.4	0
119 E	Yes	VESTAS	V80-2.0MW offshore-2,000	2,000	80.0	60.0	EMD	Level 0 - calculated -- 09/2001	7,476.2	0
120 E	Yes	VESTAS	V80-2.0MW offshore-2,000	2,000	80.0	60.0	EMD	Level 0 - calculated -- 09/2001	7,662.2	0
121 E	Yes	VESTAS	V80-2.0MW offshore-2,000	2,000	80.0	60.0	EMD	Level 0 - calculated -- 09/2001	7,581.0	0
122 E	Yes	VESTAS	V80-2.0MW offshore-2,000	2,000	80.0	60.0	EMD	Level 0 - calculated -- 09/2001	7,917.9	0
123 E	Yes	VESTAS	V80-2.0MW offshore-2,000	2,000	80.0	60.0	EMD	Level 0 - calculated -- 09/2001	7,336.9	0
124 E	Yes	VESTAS	V80-2.0MW offshore-2,000	2,000	80.0	60.0	EMD	Level 0 - calculated -- 09/2001	7,831.2	0
125 E	Yes	VESTAS	V80-2.0MW offshore-2,000	2,000	80.0	60.0	EMD	Level 0 - calculated -- 09/2001	7,371.8	0
126 E	Yes	VESTAS	V80-2.0MW offshore-2,000	2,000	80.0	60.0	EMD	Level 0 - calculated -- 09/2001	7,354.6	0
127 E	Yes	VESTAS	V80-2.0MW offshore-2,000	2,000	80.0	60.0	EMD	Level 0 - calculated -- 09/2001	7,463.0	0
128 E	Yes	VESTAS	V80-2.0MW offshore-2,000	2,000	80.0	60.0	EMD	Level 0 - calculated -- 09/2001	7,386.9	0
129 E	Yes	VESTAS	V80-2.0MW offshore-2,000	2,000	80.0	60.0	EMD	Level 0 - calculated -- 09/2001	7,624.8	0
130 E	Yes	VESTAS	V80-2.0MW offshore-2,000	2,000	80.0	60.0	EMD	Level 0 - calculated -- 09/2001	7,480.7	0
131 E	Yes	VESTAS	V80-2.0MW offshore-2,000	2,000	80.0	60.0	EMD	Level 0 - calculated -- 09/2001	7,658.4	0
132 E	Yes	VESTAS	V80-2.0MW offshore-2,000	2,000	80.0	60.0	EMD	Level 0 - calculated -- 09/2001	7,354.1	0
133 E	Yes	VESTAS	V80-2.0MW offshore-2,000	2,000	80.0	60.0	EMD	Level 0 - calculated -- 09/2001	7,346.5	0
134 E	Yes	VESTAS	V80-2.0MW offshore-2,000	2,000	80.0	60.0	EMD	Level 0 - calculated -- 09/2001	7,404.1	0
135 E	Yes	VESTAS	V80-2.0MW offshore-2,000	2,000	80.0	60.0	EMD	Level 0 - calculated -- 09/2001	7,380.1	0
136 E	Yes	VESTAS	V80-2.0MW offshore-2,000	2,000	80.0	60.0	EMD	Level 0 - calculated -- 09/2001	7,474.9	0
137 E	Yes	VESTAS	V80-2.0MW offshore-2,000	2,000	80.0	60.0	EMD	Level 0 - calculated -- 09/2001	8,000.4	0
138 E	Yes	VESTAS	V80-2.0MW offshore-2,000	2,000	80.0	60.0	EMD	Level 0 - calculated -- 09/2001	7,450.6	0
139 E	Yes	VESTAS	V80-2.0MW offshore-2,000	2,000	80.0	60.0	EMD	Level 0 - calculated -- 09/2001	7,758.5	0
140 E	Yes	VESTAS	V80-2.0MW offshore-2,000	2,000	80.0	60.0	EMD	Level 0 - calculated -- 09/2001	7,597.0	0
141 E	Yes	VESTAS	V80-2.0MW offshore-2,000	2,000	80.0	60.0	EMD	Level 0 - calculated -- 09/2001	7,440.7	0
142 E	Yes	VESTAS	V80-2.0MW offshore-2,000	2,000	80.0	60.0	EMD	Level 0 - calculated -- 09/2001	7,388.9	0
143 E	Yes	VESTAS	V80-2.0MW offshore-2,000	2,000	80.0	60.0	EMD	Level 0 - calculated -- 09/2001	7,817.5	0
144 E	Yes	VESTAS	V80-2.0MW offshore-2,000	2,000	80.0	60.0	EMD	Level 0 - calculated -- 09/2001	7,377.4	0
145 E	Yes	VESTAS	V80-2.0MW offshore-2,000	2,000	80.0	60.0	EMD	Level 0 - calculated -- 09/2001	7,527.5	0
146 E	Yes	VESTAS	V80-2.0MW offshore-2,000	2,000	80.0	60.0	EMD	Level 0 - calculated -- 09/2001	7,445.9	0
147 E	Yes	VESTAS	V80-2.0MW offshore-2,000	2,000	80.0	60.0	EMD	Level 0 - calculated -- 09/2001	7,654.5	0
148 E	Yes	VESTAS	V80-2.0MW offshore-2,000	2,000	80.0	60.0	EMD	Level 0 - calculated -- 09/2001	7,565.0	0
149 E	Yes	VESTAS	V80-2.0MW offshore-2,000	2,000	80.0	60.0	EMD	Level 0 - calculated -- 09/2001	7,819.8	0
150 E	Yes	VESTAS	V80-2.0MW offshore-2,000	2,000	80.0	60.0	EMD	Level 0 - calculated -- 09/2001	7,546.3	0
151 E	Yes	VESTAS	V80-2.0MW offshore-2,000	2,000	80.0	60.0	EMD	Level 0 - calculated -- 09/2001	7,473.4	0
152 E	Yes	VESTAS	V80-2.0MW offshore-2,000	2,000	80.0	60.0	EMD	Level 0 - calculated -- 09/2001	7,494.3	0
153 E	Yes	VESTAS	V80-2.0MW offshore-2,000	2,000	80.0	60.0	EMD	Level 0 - calculated -- 09/2001	7,671.9	0
154 E	Yes	VESTAS	V80-2.0MW offshore-2,000	2,000	80.0	60.0	EMD	Level 0 - calculated -- 09/2001	7,709.2	0
155 D	Yes	VESTAS	V90-3,000	3,000	90.0	70.0	EMD	Mode 0	11,478.7	0
156 D	Yes	VESTAS	V90-3,000	3,000	90.0	70.0	EMD	Mode 0	11,407.7	0
157 D	Yes	VESTAS	V90-3,000	3,000	90.0	70.0	EMD	Mode 0	11,371.2	0
158 D	Yes	VESTAS	V90-3,000	3,000	90.0	70.0	EMD	Mode 0	11,337.6	0
159 D	Yes	VESTAS	V90-3,000	3,000	90.0	70.0	EMD	Mode 0	11,309.8	0
160 D	Yes	VESTAS	V90-3,000	3,000	90.0	70.0	EMD	Mode 0	11,323.7	0
161 D	Yes	VESTAS	V90-3,000	3,000	90.0	70.0	EMD	Mode 0	11,342.2	0
162 D	Yes	VESTAS	V90-3,000	3,000	90.0	70.0	EMD	Mode 0	11,390.1	0
163 D	Yes	VESTAS	V90-3,000	3,000	90.0	70.0	EMD	Mode 0	11,410.4	0
164 D	Yes	VESTAS	V90-3,000	3,000	90.0	70.0	EMD	Mode 0	11,161.8	0
165 D	Yes	VESTAS	V90-3,000	3,000	90.0	70.0	EMD	Mode 0	11,443.1	0
166 D	Yes	VESTAS	V90-3,000	3,000	90.0	70.0	EMD	Mode 0	11,051.6	0
167 D	Yes	VESTAS	V90-3,000	3,000	90.0	70.0	EMD	Mode 0	11,045.3	0
168 D	Yes	VESTAS	V90-3,000	3,000	90.0	70.0	EMD	Mode 0	11,492.1	0
169 D	Yes	VESTAS	V90-3,000	3,000	90.0	70.0	EMD	Mode 0	11,056.3	0
170 D	Yes	VESTAS	V90-3,000	3,000	90.0	70.0	EMD	Mode 0	11,133.4	0
171 D	Yes	VESTAS	V90-3,000	3,000	90.0	70.0	EMD	Mode 0	11,575.4	0
172 D	Yes	VESTAS	V90-3,000	3,000	90.0	70.0	EMD	Mode 0	11,211.4	0
173 D	Yes	VESTAS	V90-3,000	3,000	90.0	70.0	EMD	Mode 0	11,204.7	0
174 D	Yes	VESTAS	V90-3,000	3,000	90.0	70.0	EMD	Mode 0	11,057.1	0
175 D	Yes	VESTAS	V90-3,000	3,000	90.0	70.0	EMD	Mode 0	11,245.9	0
176 D	Yes	VESTAS	V90-3,000	3,000	90.0	70.0	EMD	Mode 0	11,020.2	0
177 D	Yes	VESTAS	V90-3,000	3,000	90.0	70.0	EMD	Mode 0	11,043.2	0
178 D	Yes	VESTAS	V90-3,000	3,000	90.0	70.0	EMD	Mode 0	11,348.5	0
179 D	Yes	VESTAS	V90-3,000	3,000	90.0	70.0	EMD	Mode 0	11,166.1	0

To be continued on next page...

PARK - Reference WTGs

Calculation: HKW MER 16MW incl HKN&HKZ

...continued from previous page

Links	Valid	WTG type Manufact.	Type-generator	Power, rated	Rotor diameter	Hub height	Power curve		Calculated prod. without new WTGs [MWh/y]	Goodness Factor [%]
							Creator	Name		
180 D	Yes	VESTAS	V90-3,000	3,000	90.0	70.0	EMD	Mode 0	11,576.2	0
181 D	Yes	VESTAS	V90-3,000	3,000	90.0	70.0	EMD	Mode 0	11,217.1	0
182 D	Yes	VESTAS	V90-3,000	3,000	90.0	70.0	EMD	Mode 0	11,345.3	0
183 D	Yes	VESTAS	V90-3,000	3,000	90.0	70.0	EMD	Mode 0	11,203.2	0
184 D	Yes	VESTAS	V90-3,000	3,000	90.0	70.0	EMD	Mode 0	11,301.2	0
185 D	Yes	VESTAS	V90-3,000	3,000	90.0	70.0	EMD	Mode 0	11,166.4	0
186 D	Yes	VESTAS	V90-3,000	3,000	90.0	70.0	EMD	Mode 0	11,209.8	0
187 D	Yes	VESTAS	V90-3,000	3,000	90.0	70.0	EMD	Mode 0	11,314.0	0
188 F	Yes	VESTAS	V112 offshore-3,000	3,000	112.0	81.0	EMD	Level 0 - Estimated - Mode 0 - 08-2011	14,569.3	0
189 F	Yes	VESTAS	V112 offshore-3,000	3,000	112.0	81.0	EMD	Level 0 - Estimated - Mode 0 - 08-2011	14,146.7	0
190 F	Yes	VESTAS	V112 offshore-3,000	3,000	112.0	81.0	EMD	Level 0 - Estimated - Mode 0 - 08-2011	14,069.4	0
191 F	Yes	VESTAS	V112 offshore-3,000	3,000	112.0	81.0	EMD	Level 0 - Estimated - Mode 0 - 08-2011	14,168.1	0
192 F	Yes	VESTAS	V112 offshore-3,000	3,000	112.0	81.0	EMD	Level 0 - Estimated - Mode 0 - 08-2011	13,735.4	0
193 F	Yes	VESTAS	V112 offshore-3,000	3,000	112.0	81.0	EMD	Level 0 - Estimated - Mode 0 - 08-2011	14,291.2	0
194 F	Yes	VESTAS	V112 offshore-3,000	3,000	112.0	81.0	EMD	Level 0 - Estimated - Mode 0 - 08-2011	13,663.2	0
195 F	Yes	VESTAS	V112 offshore-3,000	3,000	112.0	81.0	EMD	Level 0 - Estimated - Mode 0 - 08-2011	13,757.9	0
196 F	Yes	VESTAS	V112 offshore-3,000	3,000	112.0	81.0	EMD	Level 0 - Estimated - Mode 0 - 08-2011	13,929.8	0
197 F	Yes	VESTAS	V112 offshore-3,000	3,000	112.0	81.0	EMD	Level 0 - Estimated - Mode 0 - 08-2011	13,565.5	0
198 F	Yes	VESTAS	V112 offshore-3,000	3,000	112.0	81.0	EMD	Level 0 - Estimated - Mode 0 - 08-2011	13,459.9	0
199 F	Yes	VESTAS	V112 offshore-3,000	3,000	112.0	81.0	EMD	Level 0 - Estimated - Mode 0 - 08-2011	14,108.4	0
200 F	Yes	VESTAS	V112 offshore-3,000	3,000	112.0	81.0	EMD	Level 0 - Estimated - Mode 0 - 08-2011	13,462.0	0
201 F	Yes	VESTAS	V112 offshore-3,000	3,000	112.0	81.0	EMD	Level 0 - Estimated - Mode 0 - 08-2011	13,612.2	0
202 F	Yes	VESTAS	V112 offshore-3,000	3,000	112.0	81.0	EMD	Level 0 - Estimated - Mode 0 - 08-2011	13,724.5	0
203 F	Yes	VESTAS	V112 offshore-3,000	3,000	112.0	81.0	EMD	Level 0 - Estimated - Mode 0 - 08-2011	13,419.1	0
204 F	Yes	VESTAS	V112 offshore-3,000	3,000	112.0	81.0	EMD	Level 0 - Estimated - Mode 0 - 08-2011	13,325.2	0
205 F	Yes	VESTAS	V112 offshore-3,000	3,000	112.0	81.0	EMD	Level 0 - Estimated - Mode 0 - 08-2011	14,069.5	0
206 F	Yes	VESTAS	V112 offshore-3,000	3,000	112.0	81.0	EMD	Level 0 - Estimated - Mode 0 - 08-2011	13,347.7	0
207 F	Yes	VESTAS	V112 offshore-3,000	3,000	112.0	81.0	EMD	Level 0 - Estimated - Mode 0 - 08-2011	13,580.6	0
208 F	Yes	VESTAS	V112 offshore-3,000	3,000	112.0	81.0	EMD	Level 0 - Estimated - Mode 0 - 08-2011	13,648.5	0
209 F	Yes	VESTAS	V112 offshore-3,000	3,000	112.0	81.0	EMD	Level 0 - Estimated - Mode 0 - 08-2011	13,398.2	0
210 F	Yes	VESTAS	V112 offshore-3,000	3,000	112.0	81.0	EMD	Level 0 - Estimated - Mode 0 - 08-2011	13,337.6	0
211 F	Yes	VESTAS	V112 offshore-3,000	3,000	112.0	81.0	EMD	Level 0 - Estimated - Mode 0 - 08-2011	14,079.7	0
212 F	Yes	VESTAS	V112 offshore-3,000	3,000	112.0	81.0	EMD	Level 0 - Estimated - Mode 0 - 08-2011	13,367.6	0
213 F	Yes	VESTAS	V112 offshore-3,000	3,000	112.0	81.0	EMD	Level 0 - Estimated - Mode 0 - 08-2011	13,617.9	0
214 F	Yes	VESTAS	V112 offshore-3,000	3,000	112.0	81.0	EMD	Level 0 - Estimated - Mode 0 - 08-2011	13,577.1	0
215 F	Yes	VESTAS	V112 offshore-3,000	3,000	112.0	81.0	EMD	Level 0 - Estimated - Mode 0 - 08-2011	13,459.9	0
216 F	Yes	VESTAS	V112 offshore-3,000	3,000	112.0	81.0	EMD	Level 0 - Estimated - Mode 0 - 08-2011	13,391.1	0
217 F	Yes	VESTAS	V112 offshore-3,000	3,000	112.0	81.0	EMD	Level 0 - Estimated - Mode 0 - 08-2011	13,458.5	0
218 F	Yes	VESTAS	V112 offshore-3,000	3,000	112.0	81.0	EMD	Level 0 - Estimated - Mode 0 - 08-2011	14,165.6	0
219 F	Yes	VESTAS	V112 offshore-3,000	3,000	112.0	81.0	EMD	Level 0 - Estimated - Mode 0 - 08-2011	13,759.7	0
220 F	Yes	VESTAS	V112 offshore-3,000	3,000	112.0	81.0	EMD	Level 0 - Estimated - Mode 0 - 08-2011	13,688.1	0
221 F	Yes	VESTAS	V112 offshore-3,000	3,000	112.0	81.0	EMD	Level 0 - Estimated - Mode 0 - 08-2011	13,642.0	0
222 F	Yes	VESTAS	V112 offshore-3,000	3,000	112.0	81.0	EMD	Level 0 - Estimated - Mode 0 - 08-2011	13,588.4	0
223 F	Yes	VESTAS	V112 offshore-3,000	3,000	112.0	81.0	EMD	Level 0 - Estimated - Mode 0 - 08-2011	13,637.5	0
224 F	Yes	VESTAS	V112 offshore-3,000	3,000	112.0	81.0	EMD	Level 0 - Estimated - Mode 0 - 08-2011	14,410.9	0
225 F	Yes	VESTAS	V112 offshore-3,000	3,000	112.0	81.0	EMD	Level 0 - Estimated - Mode 0 - 08-2011	14,086.4	0
226 F	Yes	VESTAS	V112 offshore-3,000	3,000	112.0	81.0	EMD	Level 0 - Estimated - Mode 0 - 08-2011	13,885.7	0
227 F	Yes	VESTAS	V112 offshore-3,000	3,000	112.0	81.0	EMD	Level 0 - Estimated - Mode 0 - 08-2011	14,038.4	0
228 F	Yes	VESTAS	V112 offshore-3,000	3,000	112.0	81.0	EMD	Level 0 - Estimated - Mode 0 - 08-2011	14,004.5	0
229 F	Yes	VESTAS	V112 offshore-3,000	3,000	112.0	81.0	EMD	Level 0 - Estimated - Mode 0 - 08-2011	14,062.6	0
230 F	Yes	VESTAS	V112 offshore-3,000	3,000	112.0	81.0	EMD	Level 0 - Estimated - Mode 0 - 08-2011	14,318.0	0
231 F	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	52,087.1	0
232 F	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	52,705.0	0
233 F	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	53,107.1	0
234 F	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	53,959.9	0
235 F	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	52,873.4	0
236 F	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	52,552.5	0
237 F	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	52,555.0	0
238 F	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	52,701.3	0
239 F	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	51,954.5	0
240 F	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	51,715.8	0
241 F	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	51,860.3	0
242 F	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	52,370.9	0
243 F	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	53,521.1	0
244 F	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	52,088.9	0
245 F	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	51,614.4	0
246 F	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	51,512.9	0
247 F	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	51,674.1	0
248 F	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	52,588.2	0

To be continued on next page...

PARK - Reference WTGs

Calculation: HKW MER 16MW incl HKN&HKZ

...continued from previous page

Links	WTG type		Type-generator	Power, rated	Rotor diameter	Hub height	Power curve		Calculated prod. without new WTGs [MWh/y]	Goodness Factor [%]
	Valid	Manufact.					Creator	Name		
249 F	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	51,766.7	0
250 F	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	51,487.8	0
251 F	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	51,565.0	0
252 F	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	51,947.6	0
253 F	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	53,778.9	0
254 F	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	52,330.6	0
255 F	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	51,866.4	0
256 F	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	51,983.3	0
257 F	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	52,159.5	0
258 F	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	53,292.5	0
259 F	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	52,554.4	0
260 F	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	53,684.4	0
261 F	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	52,692.5	0
262 F	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	51,622.8	0
263 F	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	51,428.5	0
264 F	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	53,297.7	0
265 F	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	52,938.7	0
266 F	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	52,790.1	0
267 F	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	52,759.4	0
268 F	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	52,811.9	0
269 F	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	53,001.3	0
270 F	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	51,884.0	0
271 F	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	51,340.6	0
272 F	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	51,176.7	0
273 F	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	51,202.4	0
274 F	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	51,364.0	0
275 F	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	51,735.3	0
276 F	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	51,160.2	0
277 F	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	50,656.6	0
278 F	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	50,530.6	0
279 F	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	50,587.4	0
280 F	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	50,864.8	0
281 F	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	51,311.6	0
282 F	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	50,618.6	0
283 F	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	50,260.0	0
284 F	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	50,246.8	0
285 F	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	50,395.1	0
286 F	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	51,002.4	0
287 F	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	50,726.1	0
288 F	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	50,325.4	0
289 F	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	50,167.7	0
290 F	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	50,244.6	0
291 F	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	50,579.3	0
292 F	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	51,193.9	0
293 F	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	50,704.1	0
294 F	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	50,454.8	0
295 F	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	50,497.0	0
296 F	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	50,677.9	0
297 F	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	51,219.3	0
298 F	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	53,694.3	0
299 F	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	52,019.0	0
300 F	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	51,157.5	0
301 F	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	50,826.1	0
302 F	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	51,028.1	0
303 F	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	52,639.0	0
304 F	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	51,518.5	0
305 F	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	50,791.5	0
306 F	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	50,644.9	0
307 F	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	50,767.5	0
308 F	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	53,438.2	0
309 F	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	52,045.3	0
310 F	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	51,377.9	0
311 F	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	50,872.2	0
312 F	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	50,783.8	0
313 F	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	52,409.8	0
314 F	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	51,604.3	0
315 F	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	51,407.5	0
316 F	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	51,503.2	0
317 F	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	53,622.5	0

To be continued on next page...

PARK - Reference WTGs

Calculation: HKW MER 16MW incl HKN&HKZ

...continued from previous page

Links	WTG type		Type-generator	Power, rated	Rotor diameter	Hub height	Power curve		Calculated prod. without new WTGs	Goodness Factor
	Valid	Manufact.					Creator	Name		
				[kW]	[m]	[m]			[MWh/y]	[%]
318 F	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	51,941.3	0
319 F	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	51,445.2	0
320 F	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	51,603.2	0
321 F	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	52,646.9	0
322 F	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	53,110.2	0
323 F	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	51,661.8	0
324 F	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	51,738.7	0
325 F	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	52,163.7	0
326 F	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	52,922.4	0
327 F	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	54,161.4	0
328 F	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	52,866.1	0
329 F	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	52,141.0	0
330 F	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	52,845.8	0
331 F	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	51,361.3	0
332 F	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	51,141.6	0
333 F	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	51,317.9	0
334 F	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	52,246.5	0
335 F	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	52,265.5	0
336 F	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	51,572.4	0
337 F	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	51,239.9	0
338 F	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	51,168.0	0
339 F	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	51,180.4	0
340 F	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	51,358.9	0
341 F	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	51,855.8	0
342 F	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	51,676.2	0
343 F	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	51,397.9	0
344 F	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	51,298.9	0
345 F	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	51,285.3	0
346 F	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	51,471.7	0
347 F	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	52,018.4	0
348 F	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	52,895.0	0
349 F	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	52,193.9	0
350 F	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	51,738.6	0
351 F	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	51,529.9	0
352 F	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	51,501.2	0
353 F	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	51,753.1	0
354 F	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	52,664.4	0
355 F	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	51,815.4	0
356 F	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	51,643.2	0
357 F	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	52,067.4	0
358 F	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	52,416.4	0
359 F	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	52,569.7	0
360 F	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	52,689.3	0
361 F	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	52,818.0	0
362 F	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	53,374.0	0
363 F	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	53,241.1	0
364 F	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	52,908.2	0
365 F	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	52,441.2	0
366 F	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	52,576.0	0
367 F	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	54,009.7	0
368 F	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	53,898.6	0
369 F	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	54,063.3	0
370 F	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	52,179.0	0
371 F	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	52,505.1	0
372 F	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	52,027.2	0
373 F	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	52,734.0	0
374 E	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	54,886.7	0
375 E	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	54,351.4	0
376 E	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	53,618.2	0
377 E	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	53,610.7	0
378 E	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	53,822.0	0
379 E	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	53,306.4	0
380 E	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	53,642.6	0
381 E	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	53,381.3	0
382 D	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	53,188.6	0
383 D	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	53,280.7	0
384 E	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	53,579.2	0
385 E	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	53,300.8	0
386 D	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	52,473.1	0

To be continued on next page...

PARK - Reference WTGs

Calculation: HKW MER 16MW incl HKN&HKZ

...continued from previous page

Links	WTG type		Type-generator	Power, rated	Rotor diameter	Hub height	Power curve		Calculated prod. without new WTGs [MWh/y]	Goodness Factor [%]
	Valid	Manufact.					Creator	Name		
387 D	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	52,218.6	0
388 D	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	52,420.2	0
389 E	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	53,505.8	0
390 E	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	53,009.5	0
391 E	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	53,136.4	0
392 D	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	52,494.8	0
393 D	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	51,794.0	0
394 D	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	51,558.3	0
395 D	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	51,689.2	0
396 D	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	52,216.4	0
397 E	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	53,207.1	0
398 E	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	53,029.7	0
399 E	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	53,370.9	0
400 D	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	52,381.7	0
401 D	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	51,738.6	0
402 D	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	51,392.8	0
403 D	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	51,421.3	0
404 D	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	51,719.7	0
405 D	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	52,473.8	0
406 E	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	53,470.3	0
407 E	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	53,275.2	0
408 D	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	51,721.4	0
409 D	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	51,396.0	0
410 D	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	51,473.2	0
411 D	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	51,713.0	0
412 D	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	52,266.2	0
413 D	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	53,264.8	0
414 E	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	53,284.3	0
415 E	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	52,723.3	0
416 E	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	52,570.4	0
417 D	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	51,771.7	0
418 D	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	51,962.5	0
419 D	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	52,577.5	0
420 E	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	53,296.3	0
421 E	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	53,332.9	0
422 E	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	53,378.9	0
423 E	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	53,478.1	0
424 E	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	53,629.6	0
425 E	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	53,891.9	0
426 D	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	53,538.3	0
427 E	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	53,818.9	0
428 E	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	53,665.7	0
429 E	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	53,383.0	0
430 E	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	53,400.8	0
431 E	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	54,379.6	0
432 E	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	53,889.1	0
433 E	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	53,341.2	0
434 E	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	53,658.9	0
435 E	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	54,424.7	0
436 E	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	54,164.8	0
437 E	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	54,483.3	0
438 E	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	54,646.6	0
439 E	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	54,735.4	0
440 D	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	53,422.0	0
441 D	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	53,303.9	0
442 D	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	52,973.7	0
443 E	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	53,937.0	0
444 E	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	54,033.4	0
445 E	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	54,941.3	0
446 E	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	53,710.5	0
447 D	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	53,266.0	0
448 E	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	54,446.1	0
449 E	No	PONDERA VESTAS	V164-10.0MW-10,000	10,000	164.0	125.0	USER	V164 10 MW - HKN P-V curve	54,433.6	0

Project:

RVO Offshore wind farms

Licensed user:

Pondera Consult B.V.
 Welbergweg 49
 NL-7556 PE Hengelo
 0031742489940



Calculated:

16/05/2019 11:32/3.2.712

PARK - Reference WTGs

Calculation: HKW MER 16MW incl HKN&HKZ

WTG siting

UTM (north)-ETRS89 Zone: 31

Easting Northing Z Row data/Description

Production source Statistical basis for normalized production: [Months]

			[m]		
95	582,037	5,825,515	0.0	WMPA 60	
96	581,541	5,825,752	0.0	WMPA 59	
97	581,045	5,825,990	0.0	WMPA 58	
98	580,549	5,826,228	0.0	WMPA 57	
99	582,496	5,825,818	0.0	WMPA 54	
100	582,988	5,825,571	0.0	WMPA 55	
101	582,004	5,826,064	0.0	WMPA 53	
102	583,480	5,825,325	0.0	WMPA 56	
103	581,513	5,826,310	0.0	WMPA 52	
104	581,021	5,826,556	0.0	WMPA 51	
105	582,970	5,826,130	0.0	WMPA 46	
106	582,483	5,826,385	0.0	WMPA 45	
107	580,529	5,826,802	0.0	WMPA 50	
108	583,457	5,825,875	0.0	WMPA 47	
109	581,995	5,826,640	0.0	WMPA 44	
110	583,944	5,825,620	0.0	WMPA 48	
111	581,508	5,826,895	0.0	WMPA 43	
112	584,432	5,825,365	0.0	WMPA 49	
113	581,021	5,827,150	0.0	WMPA 42	
114	582,972	5,826,707	0.0	WMPA 36	
115	583,454	5,826,443	0.0	WMPA 37	
116	582,490	5,826,971	0.0	WMPA 35	
117	583,937	5,826,179	0.0	WMPA 38	
118	580,533	5,827,405	0.0	WMPA 41	
119	582,007	5,827,235	0.0	WMPA 34	
120	584,419	5,825,915	0.0	WMPA 39	
121	581,525	5,827,499	0.0	WMPA 33	
122	584,902	5,825,651	0.0	WMPA 40	
123	583,457	5,827,020	0.0	WMPA 28	
124	581,043	5,827,763	0.0	WMPA 32	
125	583,934	5,826,747	0.0	WMPA 29	
126	582,980	5,827,293	0.0	WMPA 27	
127	584,412	5,826,473	0.0	WMPA 30	
128	582,502	5,827,566	0.0	WMPA 26	
129	584,889	5,826,200	0.0	WMPA 31	
130	582,026	5,827,839	0.0	WMPA 25	
131	581,547	5,828,111	0.0	WMPA 24	
132	583,948	5,827,323	0.0	WMPA 19	
133	583,476	5,827,606	0.0	WMPA 18	
134	584,420	5,827,041	0.0	WMPA 20	
135	583,004	5,827,888	0.0	WMPA 17	
136	584,892	5,826,759	0.0	WMPA 21	
137	581,070	5,828,385	0.0	WMPA 23	
138	582,531	5,828,170	0.0	WMPA 16	
139	585,364	5,826,477	0.0	WMPA 22	
140	582,059	5,828,452	0.0	WMPA 15	
141	584,439	5,827,608	0.0	WMPA 11	
142	583,972	5,827,900	0.0	WMPA 10	
143	581,587	5,828,734	0.0	WMPA 14	
144	583,505	5,828,191	0.0	WMPA 9	
145	584,906	5,827,318	0.0	WMPA 12	
146	583,039	5,828,481	0.0	WMPA 8	
147	585,373	5,827,027	0.0	WMPA 13	
148	582,572	5,828,772	0.0	WMPA 7	
149	582,105	5,829,063	0.0	WMPA 6	
150	584,457	5,828,159	0.0	WMPA 5	
151	583,996	5,828,458	0.0	WMPA 4	
152	583,534	5,828,757	0.0	WMPA 3	
153	583,073	5,829,056	0.0	WMPA 2	
154	584,027	5,829,008	0.0	WMPA 1	
155	592,510	5,831,701	0.0	Offshore Windpark Egmond aan Zee / 12	
156	592,935	5,831,215	0.0	Offshore Windpark Egmond aan Zee / 11	

To be continued on next page...

PARK - Reference WTGs

Calculation: HKW MER 16MW incl HKN&HKZ

...continued from previous page

UTM (north)-ETRS89 Zone: 31

Easting Northing Z Row data/Description

Production source Statistical basis for normalized production: [Months]

			[m]					
157	593,367	5,830,738	0.0	Offshore Windpark Egmond aan Zee / 10				
158	593,785	5,830,248	0.0	Offshore Windpark Egmond aan Zee / 9				
159	594,210	5,829,765	0.0	Offshore Windpark Egmond aan Zee / 8				
160	594,635	5,829,282	0.0	Offshore Windpark Egmond aan Zee / 7				
161	595,066	5,828,790	0.0	Offshore Windpark Egmond aan Zee / 6				
162	595,491	5,828,306	0.0	Offshore Windpark Egmond aan Zee / 5				
163	595,915	5,827,823	0.0	Offshore Windpark Egmond aan Zee / 4				
164	594,536	5,830,909	0.0	Offshore Windpark Egmond aan Zee / 21				
165	596,341	5,827,337	0.0	Offshore Windpark Egmond aan Zee / 3				
166	594,961	5,830,426	0.0	Offshore Windpark Egmond aan Zee / 20				
167	595,386	5,829,939	0.0	Offshore Windpark Egmond aan Zee / 19				
168	596,758	5,826,863	0.0	Offshore Windpark Egmond aan Zee / 2				
169	595,811	5,829,456	0.0	Offshore Windpark Egmond aan Zee / 18				
170	596,235	5,828,973	0.0	Offshore Windpark Egmond aan Zee / 17				
171	597,270	5,826,468	0.0	Offshore Windpark Egmond aan Zee / 1				
172	596,916	5,828,199	0.0	Offshore Windpark Egmond aan Zee / 16				
173	595,287	5,831,569	0.0	Offshore Windpark Egmond aan Zee / 29				
174	595,712	5,831,083	0.0	Offshore Windpark Egmond aan Zee / 28				
175	597,340	5,827,716	0.0	Offshore Windpark Egmond aan Zee / 15				
176	596,137	5,830,600	0.0	Offshore Windpark Egmond aan Zee / 27				
177	596,562	5,830,117	0.0	Offshore Windpark Egmond aan Zee / 26				
178	597,766	5,827,233	0.0	Offshore Windpark Egmond aan Zee / 14				
179	597,040	5,829,573	0.0	Offshore Windpark Egmond aan Zee / 25				
180	598,190	5,826,750	0.0	Offshore Windpark Egmond aan Zee / 13				
181	597,696	5,828,826	0.0	Offshore Windpark Egmond aan Zee / 24				
182	596,039	5,832,227	0.0	Offshore Windpark Egmond aan Zee / 36				
183	596,464	5,831,744	0.0	Offshore Windpark Egmond aan Zee / 35				
184	598,120	5,828,337	0.0	Offshore Windpark Egmond aan Zee / 23				
185	596,888	5,831,261	0.0	Offshore Windpark Egmond aan Zee / 34				
186	597,313	5,830,778	0.0	Offshore Windpark Egmond aan Zee / 33				
187	597,798	5,830,225	0.0	Offshore Windpark Egmond aan Zee / 32				
188	581,938	5,809,670	0.0	VESTAS V112 offshore 3000 112.0 !O! hub: 81.0 m (TOT: 137.0 m) (94)				
189	580,605	5,809,303	0.0	VESTAS V112 offshore 3000 112.0 !O! hub: 81.0 m (TOT: 137.0 m) (95)				
190	579,652	5,809,041	0.0	VESTAS V112 offshore 3000 112.0 !O! hub: 81.0 m (TOT: 137.0 m) (96)				
191	581,625	5,808,865	0.0	VESTAS V112 offshore 3000 112.0 !O! hub: 81.0 m (TOT: 137.0 m) (97)				
192	580,154	5,808,809	0.0	VESTAS V112 offshore 3000 112.0 !O! hub: 81.0 m (TOT: 137.0 m) (98)				
193	578,496	5,808,723	0.0	VESTAS V112 offshore 3000 112.0 !O! hub: 81.0 m (TOT: 137.0 m) (99)				
194	580,657	5,808,508	0.0	VESTAS V112 offshore 3000 112.0 !O! hub: 81.0 m (TOT: 137.0 m) (100)				
195	578,974	5,808,485	0.0	VESTAS V112 offshore 3000 112.0 !O! hub: 81.0 m (TOT: 137.0 m) (101)				
196	581,251	5,808,288	0.0	VESTAS V112 offshore 3000 112.0 !O! hub: 81.0 m (TOT: 137.0 m) (102)				
197	579,448	5,808,239	0.0	VESTAS V112 offshore 3000 112.0 !O! hub: 81.0 m (TOT: 137.0 m) (103)				
198	579,929	5,808,008	0.0	VESTAS V112 offshore 3000 112.0 !O! hub: 81.0 m (TOT: 137.0 m) (104)				
199	578,087	5,808,012	0.0	VESTAS V112 offshore 3000 112.0 !O! hub: 81.0 m (TOT: 137.0 m) (105)				
200	580,412	5,807,760	0.0	VESTAS V112 offshore 3000 112.0 !O! hub: 81.0 m (TOT: 137.0 m) (106)				
201	578,577	5,807,774	0.0	VESTAS V112 offshore 3000 112.0 !O! hub: 81.0 m (TOT: 137.0 m) (107)				
202	580,882	5,807,505	0.0	VESTAS V112 offshore 3000 112.0 !O! hub: 81.0 m (TOT: 137.0 m) (108)				
203	579,071	5,807,520	0.0	VESTAS V112 offshore 3000 112.0 !O! hub: 81.0 m (TOT: 137.0 m) (109)				
204	579,568	5,807,277	0.0	VESTAS V112 offshore 3000 112.0 !O! hub: 81.0 m (TOT: 137.0 m) (110)				
205	577,660	5,807,334	0.0	VESTAS V112 offshore 3000 112.0 !O! hub: 81.0 m (TOT: 137.0 m) (111)				
206	580,042	5,807,014	0.0	VESTAS V112 offshore 3000 112.0 !O! hub: 81.0 m (TOT: 137.0 m) (112)				
207	578,169	5,807,067	0.0	VESTAS V112 offshore 3000 112.0 !O! hub: 81.0 m (TOT: 137.0 m) (113)				
208	580,537	5,806,707	0.0	VESTAS V112 offshore 3000 112.0 !O! hub: 81.0 m (TOT: 137.0 m) (114)				
209	578,674	5,806,818	0.0	VESTAS V112 offshore 3000 112.0 !O! hub: 81.0 m (TOT: 137.0 m) (115)				
210	579,182	5,806,551	0.0	VESTAS V112 offshore 3000 112.0 !O! hub: 81.0 m (TOT: 137.0 m) (116)				
211	577,306	5,806,630	0.0	VESTAS V112 offshore 3000 112.0 !O! hub: 81.0 m (TOT: 137.0 m) (117)				
212	579,693	5,806,276	0.0	VESTAS V112 offshore 3000 112.0 !O! hub: 81.0 m (TOT: 137.0 m) (118)				
213	577,809	5,806,387	0.0	VESTAS V112 offshore 3000 112.0 !O! hub: 81.0 m (TOT: 137.0 m) (119)				
214	580,188	5,806,021	0.0	VESTAS V112 offshore 3000 112.0 !O! hub: 81.0 m (TOT: 137.0 m) (120)				
215	578,316	5,806,128	0.0	VESTAS V112 offshore 3000 112.0 !O! hub: 81.0 m (TOT: 137.0 m) (121)				
216	578,848	5,805,870	0.0	VESTAS V112 offshore 3000 112.0 !O! hub: 81.0 m (TOT: 137.0 m) (122)				
217	579,380	5,805,570	0.0	VESTAS V112 offshore 3000 112.0 !O! hub: 81.0 m (TOT: 137.0 m) (123)				
218	576,916	5,805,900	0.0	VESTAS V112 offshore 3000 112.0 !O! hub: 81.0 m (TOT: 137.0 m) (124)				

To be continued on next page...

PARK - Reference WTGs

Calculation: HKW MER 16MW incl HKN&HKZ

...continued from previous page

UTM (north)-ETRS89 Zone: 31

Easting Northing Z Row data/Description

Production
source
Statistical basis
for normalized
production:
[Months]

			[m]	
219	577,439	5,805,661	0.0	VESTAS V112 offshore 3000 112.0 !O! hub: 81.0 m (TOT: 137.0 m) (125)
220	579,904	5,805,320	0.0	VESTAS V112 offshore 3000 112.0 !O! hub: 81.0 m (TOT: 137.0 m) (126)
221	577,963	5,805,386	0.0	VESTAS V112 offshore 3000 112.0 !O! hub: 81.0 m (TOT: 137.0 m) (127)
222	578,511	5,805,087	0.0	VESTAS V112 offshore 3000 112.0 !O! hub: 81.0 m (TOT: 137.0 m) (128)
223	579,035	5,804,820	0.0	VESTAS V112 offshore 3000 112.0 !O! hub: 81.0 m (TOT: 137.0 m) (129)
224	576,540	5,805,102	0.0	VESTAS V112 offshore 3000 112.0 !O! hub: 81.0 m (TOT: 137.0 m) (130)
225	577,094	5,804,911	0.0	VESTAS V112 offshore 3000 112.0 !O! hub: 81.0 m (TOT: 137.0 m) (131)
226	579,583	5,804,546	0.0	VESTAS V112 offshore 3000 112.0 !O! hub: 81.0 m (TOT: 137.0 m) (132)
227	577,634	5,804,603	0.0	VESTAS V112 offshore 3000 112.0 !O! hub: 81.0 m (TOT: 137.0 m) (133)
228	578,191	5,804,321	0.0	VESTAS V112 offshore 3000 112.0 !O! hub: 81.0 m (TOT: 137.0 m) (134)
229	578,715	5,804,038	0.0	VESTAS V112 offshore 3000 112.0 !O! hub: 81.0 m (TOT: 137.0 m) (135)
230	579,289	5,803,644	0.0	VESTAS V112 offshore 3000 112.0 !O! hub: 81.0 m (TOT: 137.0 m) (136)
231	573,220	5,802,271	0.0	PONDERA VESTAS V164-10.0MW 10000 164.0 !O! hub: 125.0 m (TOT: 207.0 m) (1276)
232	574,531	5,802,197	0.0	PONDERA VESTAS V164-10.0MW 10000 164.0 !O! hub: 125.0 m (TOT: 207.0 m) (1277)
233	575,939	5,801,904	0.0	PONDERA VESTAS V164-10.0MW 10000 164.0 !O! hub: 125.0 m (TOT: 207.0 m) (1278)
234	564,980	5,804,195	0.0	PONDERA VESTAS V164-10.0MW 10000 164.0 !O! hub: 125.0 m (TOT: 207.0 m) (1279)
235	566,755	5,804,176	0.0	PONDERA VESTAS V164-10.0MW 10000 164.0 !O! hub: 125.0 m (TOT: 207.0 m) (1280)
236	568,529	5,804,158	0.0	PONDERA VESTAS V164-10.0MW 10000 164.0 !O! hub: 125.0 m (TOT: 207.0 m) (1281)
237	570,304	5,804,140	0.0	PONDERA VESTAS V164-10.0MW 10000 164.0 !O! hub: 125.0 m (TOT: 207.0 m) (1282)
238	565,599	5,803,336	0.0	PONDERA VESTAS V164-10.0MW 10000 164.0 !O! hub: 125.0 m (TOT: 207.0 m) (1283)
239	567,374	5,803,317	0.0	PONDERA VESTAS V164-10.0MW 10000 164.0 !O! hub: 125.0 m (TOT: 207.0 m) (1284)
240	569,148	5,803,299	0.0	PONDERA VESTAS V164-10.0MW 10000 164.0 !O! hub: 125.0 m (TOT: 207.0 m) (1285)
241	570,923	5,803,281	0.0	PONDERA VESTAS V164-10.0MW 10000 164.0 !O! hub: 125.0 m (TOT: 207.0 m) (1286)
242	572,697	5,803,264	0.0	PONDERA VESTAS V164-10.0MW 10000 164.0 !O! hub: 125.0 m (TOT: 207.0 m) (1287)
243	564,445	5,802,495	0.0	PONDERA VESTAS V164-10.0MW 10000 164.0 !O! hub: 125.0 m (TOT: 207.0 m) (1288)
244	566,219	5,802,476	0.0	PONDERA VESTAS V164-10.0MW 10000 164.0 !O! hub: 125.0 m (TOT: 207.0 m) (1289)
245	567,994	5,802,457	0.0	PONDERA VESTAS V164-10.0MW 10000 164.0 !O! hub: 125.0 m (TOT: 207.0 m) (1290)
246	569,769	5,802,439	0.0	PONDERA VESTAS V164-10.0MW 10000 164.0 !O! hub: 125.0 m (TOT: 207.0 m) (1291)
247	571,543	5,802,422	0.0	PONDERA VESTAS V164-10.0MW 10000 164.0 !O! hub: 125.0 m (TOT: 207.0 m) (1292)
248	565,064	5,801,635	0.0	PONDERA VESTAS V164-10.0MW 10000 164.0 !O! hub: 125.0 m (TOT: 207.0 m) (1293)
249	566,838	5,801,616	0.0	PONDERA VESTAS V164-10.0MW 10000 164.0 !O! hub: 125.0 m (TOT: 207.0 m) (1294)
250	568,613	5,801,598	0.0	PONDERA VESTAS V164-10.0MW 10000 164.0 !O! hub: 125.0 m (TOT: 207.0 m) (1295)
251	570,388	5,801,580	0.0	PONDERA VESTAS V164-10.0MW 10000 164.0 !O! hub: 125.0 m (TOT: 207.0 m) (1296)
252	572,162	5,801,563	0.0	PONDERA VESTAS V164-10.0MW 10000 164.0 !O! hub: 125.0 m (TOT: 207.0 m) (1297)
253	563,910	5,800,795	0.0	PONDERA VESTAS V164-10.0MW 10000 164.0 !O! hub: 125.0 m (TOT: 207.0 m) (1298)
254	565,684	5,800,776	0.0	PONDERA VESTAS V164-10.0MW 10000 164.0 !O! hub: 125.0 m (TOT: 207.0 m) (1299)
255	567,459	5,800,757	0.0	PONDERA VESTAS V164-10.0MW 10000 164.0 !O! hub: 125.0 m (TOT: 207.0 m) (1300)
256	569,233	5,800,739	0.0	PONDERA VESTAS V164-10.0MW 10000 164.0 !O! hub: 125.0 m (TOT: 207.0 m) (1301)
257	571,008	5,800,721	0.0	PONDERA VESTAS V164-10.0MW 10000 164.0 !O! hub: 125.0 m (TOT: 207.0 m) (1302)
258	564,528	5,799,935	0.0	PONDERA VESTAS V164-10.0MW 10000 164.0 !O! hub: 125.0 m (TOT: 207.0 m) (1303)
259	566,303	5,799,916	0.0	PONDERA VESTAS V164-10.0MW 10000 164.0 !O! hub: 125.0 m (TOT: 207.0 m) (1304)
260	563,306	5,796,102	0.0	PONDERA VESTAS V164-10.0MW 10000 164.0 !O! hub: 125.0 m (TOT: 207.0 m) (1305)
261	564,547	5,796,713	0.0	PONDERA VESTAS V164-10.0MW 10000 164.0 !O! hub: 125.0 m (TOT: 207.0 m) (1306)
262	565,906	5,796,392	0.0	PONDERA VESTAS V164-10.0MW 10000 164.0 !O! hub: 125.0 m (TOT: 207.0 m) (1307)
263	568,451	5,796,861	0.0	PONDERA VESTAS V164-10.0MW 10000 164.0 !O! hub: 125.0 m (TOT: 207.0 m) (1308)
264	564,590	5,789,985	0.0	PONDERA VESTAS V164-10.0MW 10000 164.0 !O! hub: 125.0 m (TOT: 207.0 m) (1309)
265	564,392	5,790,980	0.0	PONDERA VESTAS V164-10.0MW 10000 164.0 !O! hub: 125.0 m (TOT: 207.0 m) (1310)
266	564,194	5,791,975	0.0	PONDERA VESTAS V164-10.0MW 10000 164.0 !O! hub: 125.0 m (TOT: 207.0 m) (1311)
267	563,996	5,792,970	0.0	PONDERA VESTAS V164-10.0MW 10000 164.0 !O! hub: 125.0 m (TOT: 207.0 m) (1312)
268	563,798	5,793,965	0.0	PONDERA VESTAS V164-10.0MW 10000 164.0 !O! hub: 125.0 m (TOT: 207.0 m) (1313)
269	563,600	5,794,960	0.0	PONDERA VESTAS V164-10.0MW 10000 164.0 !O! hub: 125.0 m (TOT: 207.0 m) (1314)
270	565,770	5,790,735	0.0	PONDERA VESTAS V164-10.0MW 10000 164.0 !O! hub: 125.0 m (TOT: 207.0 m) (1315)
271	565,571	5,791,731	0.0	PONDERA VESTAS V164-10.0MW 10000 164.0 !O! hub: 125.0 m (TOT: 207.0 m) (1316)
272	565,373	5,792,726	0.0	PONDERA VESTAS V164-10.0MW 10000 164.0 !O! hub: 125.0 m (TOT: 207.0 m) (1317)
273	565,175	5,793,721	0.0	PONDERA VESTAS V164-10.0MW 10000 164.0 !O! hub: 125.0 m (TOT: 207.0 m) (1318)
274	564,976	5,794,716	0.0	PONDERA VESTAS V164-10.0MW 10000 164.0 !O! hub: 125.0 m (TOT: 207.0 m) (1319)
275	564,778	5,795,711	0.0	PONDERA VESTAS V164-10.0MW 10000 164.0 !O! hub: 125.0 m (TOT: 207.0 m) (1320)
276	566,949	5,791,486	0.0	PONDERA VESTAS V164-10.0MW 10000 164.0 !O! hub: 125.0 m (TOT: 207.0 m) (1321)
277	566,751	5,792,481	0.0	PONDERA VESTAS V164-10.0MW 10000 164.0 !O! hub: 125.0 m (TOT: 207.0 m) (1322)
278	566,552	5,793,476	0.0	PONDERA VESTAS V164-10.0MW 10000 164.0 !O! hub: 125.0 m (TOT: 207.0 m) (1323)
279	566,353	5,794,471	0.0	PONDERA VESTAS V164-10.0MW 10000 164.0 !O! hub: 125.0 m (TOT: 207.0 m) (1324)
280	566,155	5,795,466	0.0	PONDERA VESTAS V164-10.0MW 10000 164.0 !O! hub: 125.0 m (TOT: 207.0 m) (1325)

To be continued on next page...

PARK - Reference WTGs

Calculation: HKW MER 16MW incl HKN&HKZ

...continued from previous page

UTM (north)-ETRS89 Zone: 31

Easting Northing Z Row data/Description

Production
source
Statistical basis
for normalized
production:
[Months]

		[m]						
281	568,327	5,791,242	0.0	PONDERA VESTAS V164-10.0MW	10000	164.0	!O!	hub: 125.0 m (TOT: 207.0 m) (1326)
282	568,128	5,792,237	0.0	PONDERA VESTAS V164-10.0MW	10000	164.0	!O!	hub: 125.0 m (TOT: 207.0 m) (1327)
283	567,929	5,793,232	0.0	PONDERA VESTAS V164-10.0MW	10000	164.0	!O!	hub: 125.0 m (TOT: 207.0 m) (1328)
284	567,731	5,794,227	0.0	PONDERA VESTAS V164-10.0MW	10000	164.0	!O!	hub: 125.0 m (TOT: 207.0 m) (1329)
285	567,532	5,795,222	0.0	PONDERA VESTAS V164-10.0MW	10000	164.0	!O!	hub: 125.0 m (TOT: 207.0 m) (1330)
286	567,333	5,796,217	0.0	PONDERA VESTAS V164-10.0MW	10000	164.0	!O!	hub: 125.0 m (TOT: 207.0 m) (1331)
287	569,506	5,791,993	0.0	PONDERA VESTAS V164-10.0MW	10000	164.0	!O!	hub: 125.0 m (TOT: 207.0 m) (1332)
288	569,307	5,792,988	0.0	PONDERA VESTAS V164-10.0MW	10000	164.0	!O!	hub: 125.0 m (TOT: 207.0 m) (1333)
289	569,108	5,793,983	0.0	PONDERA VESTAS V164-10.0MW	10000	164.0	!O!	hub: 125.0 m (TOT: 207.0 m) (1334)
290	568,909	5,794,978	0.0	PONDERA VESTAS V164-10.0MW	10000	164.0	!O!	hub: 125.0 m (TOT: 207.0 m) (1335)
291	568,710	5,795,973	0.0	PONDERA VESTAS V164-10.0MW	10000	164.0	!O!	hub: 125.0 m (TOT: 207.0 m) (1336)
292	570,884	5,791,749	0.0	PONDERA VESTAS V164-10.0MW	10000	164.0	!O!	hub: 125.0 m (TOT: 207.0 m) (1337)
293	570,685	5,792,744	0.0	PONDERA VESTAS V164-10.0MW	10000	164.0	!O!	hub: 125.0 m (TOT: 207.0 m) (1338)
294	570,486	5,793,738	0.0	PONDERA VESTAS V164-10.0MW	10000	164.0	!O!	hub: 125.0 m (TOT: 207.0 m) (1339)
295	570,286	5,794,733	0.0	PONDERA VESTAS V164-10.0MW	10000	164.0	!O!	hub: 125.0 m (TOT: 207.0 m) (1340)
296	570,087	5,795,728	0.0	PONDERA VESTAS V164-10.0MW	10000	164.0	!O!	hub: 125.0 m (TOT: 207.0 m) (1341)
297	569,888	5,796,723	0.0	PONDERA VESTAS V164-10.0MW	10000	164.0	!O!	hub: 125.0 m (TOT: 207.0 m) (1342)
298	564,771	5,788,336	0.0	PONDERA VESTAS V164-10.0MW	10000	164.0	!O!	hub: 125.0 m (TOT: 207.0 m) (1343)
299	567,523	5,789,081	0.0	PONDERA VESTAS V164-10.0MW	10000	164.0	!O!	hub: 125.0 m (TOT: 207.0 m) (1344)
300	568,898	5,789,454	0.0	PONDERA VESTAS V164-10.0MW	10000	164.0	!O!	hub: 125.0 m (TOT: 207.0 m) (1345)
301	570,274	5,789,828	0.0	PONDERA VESTAS V164-10.0MW	10000	164.0	!O!	hub: 125.0 m (TOT: 207.0 m) (1346)
302	571,649	5,790,202	0.0	PONDERA VESTAS V164-10.0MW	10000	164.0	!O!	hub: 125.0 m (TOT: 207.0 m) (1347)
303	565,696	5,787,610	0.0	PONDERA VESTAS V164-10.0MW	10000	164.0	!O!	hub: 125.0 m (TOT: 207.0 m) (1348)
304	568,448	5,788,355	0.0	PONDERA VESTAS V164-10.0MW	10000	164.0	!O!	hub: 125.0 m (TOT: 207.0 m) (1349)
305	569,823	5,788,728	0.0	PONDERA VESTAS V164-10.0MW	10000	164.0	!O!	hub: 125.0 m (TOT: 207.0 m) (1350)
306	571,198	5,789,102	0.0	PONDERA VESTAS V164-10.0MW	10000	164.0	!O!	hub: 125.0 m (TOT: 207.0 m) (1351)
307	572,574	5,789,476	0.0	PONDERA VESTAS V164-10.0MW	10000	164.0	!O!	hub: 125.0 m (TOT: 207.0 m) (1352)
308	565,246	5,786,511	0.0	PONDERA VESTAS V164-10.0MW	10000	164.0	!O!	hub: 125.0 m (TOT: 207.0 m) (1353)
309	566,621	5,786,883	0.0	PONDERA VESTAS V164-10.0MW	10000	164.0	!O!	hub: 125.0 m (TOT: 207.0 m) (1354)
310	569,372	5,787,629	0.0	PONDERA VESTAS V164-10.0MW	10000	164.0	!O!	hub: 125.0 m (TOT: 207.0 m) (1355)
311	570,748	5,788,003	0.0	PONDERA VESTAS V164-10.0MW	10000	164.0	!O!	hub: 125.0 m (TOT: 207.0 m) (1356)
312	572,123	5,788,377	0.0	PONDERA VESTAS V164-10.0MW	10000	164.0	!O!	hub: 125.0 m (TOT: 207.0 m) (1357)
313	566,171	5,785,784	0.0	PONDERA VESTAS V164-10.0MW	10000	164.0	!O!	hub: 125.0 m (TOT: 207.0 m) (1358)
314	567,546	5,786,157	0.0	PONDERA VESTAS V164-10.0MW	10000	164.0	!O!	hub: 125.0 m (TOT: 207.0 m) (1359)
315	571,673	5,787,277	0.0	PONDERA VESTAS V164-10.0MW	10000	164.0	!O!	hub: 125.0 m (TOT: 207.0 m) (1360)
316	573,048	5,787,651	0.0	PONDERA VESTAS V164-10.0MW	10000	164.0	!O!	hub: 125.0 m (TOT: 207.0 m) (1361)
317	565,720	5,784,685	0.0	PONDERA VESTAS V164-10.0MW	10000	164.0	!O!	hub: 125.0 m (TOT: 207.0 m) (1362)
318	567,096	5,785,058	0.0	PONDERA VESTAS V164-10.0MW	10000	164.0	!O!	hub: 125.0 m (TOT: 207.0 m) (1363)
319	568,471	5,785,431	0.0	PONDERA VESTAS V164-10.0MW	10000	164.0	!O!	hub: 125.0 m (TOT: 207.0 m) (1364)
320	569,847	5,785,804	0.0	PONDERA VESTAS V164-10.0MW	10000	164.0	!O!	hub: 125.0 m (TOT: 207.0 m) (1365)
321	572,597	5,786,552	0.0	PONDERA VESTAS V164-10.0MW	10000	164.0	!O!	hub: 125.0 m (TOT: 207.0 m) (1366)
322	566,645	5,783,959	0.0	PONDERA VESTAS V164-10.0MW	10000	164.0	!O!	hub: 125.0 m (TOT: 207.0 m) (1367)
323	568,021	5,784,331	0.0	PONDERA VESTAS V164-10.0MW	10000	164.0	!O!	hub: 125.0 m (TOT: 207.0 m) (1368)
324	569,396	5,784,705	0.0	PONDERA VESTAS V164-10.0MW	10000	164.0	!O!	hub: 125.0 m (TOT: 207.0 m) (1369)
325	570,772	5,785,078	0.0	PONDERA VESTAS V164-10.0MW	10000	164.0	!O!	hub: 125.0 m (TOT: 207.0 m) (1370)
326	567,513	5,783,401	0.0	PONDERA VESTAS V164-10.0MW	10000	164.0	!O!	hub: 125.0 m (TOT: 207.0 m) (1371)
327	567,843	5,782,096	0.0	PONDERA VESTAS V164-10.0MW	10000	164.0	!O!	hub: 125.0 m (TOT: 207.0 m) (1372)
328	568,335	5,782,779	0.0	PONDERA VESTAS V164-10.0MW	10000	164.0	!O!	hub: 125.0 m (TOT: 207.0 m) (1373)
329	568,844	5,783,619	0.0	PONDERA VESTAS V164-10.0MW	10000	164.0	!O!	hub: 125.0 m (TOT: 207.0 m) (1374)
330	570,098	5,783,905	0.0	PONDERA VESTAS V164-10.0MW	10000	164.0	!O!	hub: 125.0 m (TOT: 207.0 m) (1375)
331	570,463	5,786,987	0.0	PONDERA VESTAS V164-10.0MW	10000	164.0	!O!	hub: 125.0 m (TOT: 207.0 m) (1376)
332	573,418	5,788,676	0.0	PONDERA VESTAS V164-10.0MW	10000	164.0	!O!	hub: 125.0 m (TOT: 207.0 m) (1377)
333	573,742	5,789,596	0.0	PONDERA VESTAS V164-10.0MW	10000	164.0	!O!	hub: 125.0 m (TOT: 207.0 m) (1378)
334	574,171	5,788,036	0.0	PONDERA VESTAS V164-10.0MW	10000	164.0	!O!	hub: 125.0 m (TOT: 207.0 m) (1379)
335	574,816	5,788,859	0.0	PONDERA VESTAS V164-10.0MW	10000	164.0	!O!	hub: 125.0 m (TOT: 207.0 m) (1380)
336	572,953	5,791,985	0.0	PONDERA VESTAS V164-10.0MW	10000	164.0	!O!	hub: 125.0 m (TOT: 207.0 m) (1381)
337	572,815	5,793,009	0.0	PONDERA VESTAS V164-10.0MW	10000	164.0	!O!	hub: 125.0 m (TOT: 207.0 m) (1382)
338	572,678	5,794,033	0.0	PONDERA VESTAS V164-10.0MW	10000	164.0	!O!	hub: 125.0 m (TOT: 207.0 m) (1383)
339	572,540	5,795,057	0.0	PONDERA VESTAS V164-10.0MW	10000	164.0	!O!	hub: 125.0 m (TOT: 207.0 m) (1384)
340	572,403	5,796,081	0.0	PONDERA VESTAS V164-10.0MW	10000	164.0	!O!	hub: 125.0 m (TOT: 207.0 m) (1385)
341	572,265	5,797,105	0.0	PONDERA VESTAS V164-10.0MW	10000	164.0	!O!	hub: 125.0 m (TOT: 207.0 m) (1386)
342	574,779	5,792,275	0.0	PONDERA VESTAS V164-10.0MW	10000	164.0	!O!	hub: 125.0 m (TOT: 207.0 m) (1387)

To be continued on next page...

PARK - Reference WTGs

Calculation: HKW MER 16MW incl HKN&HKZ

...continued from previous page

UTM (north)-ETRS89 Zone: 31

Easting Northing Z Row data/Description

Production source Statistical basis for normalized production: [Months]

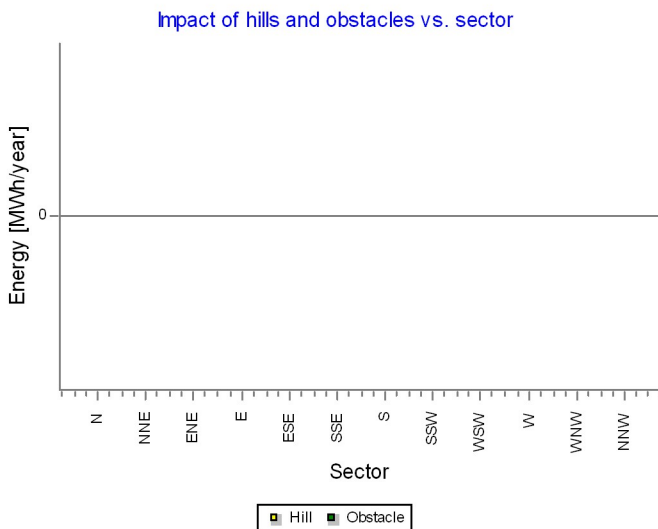
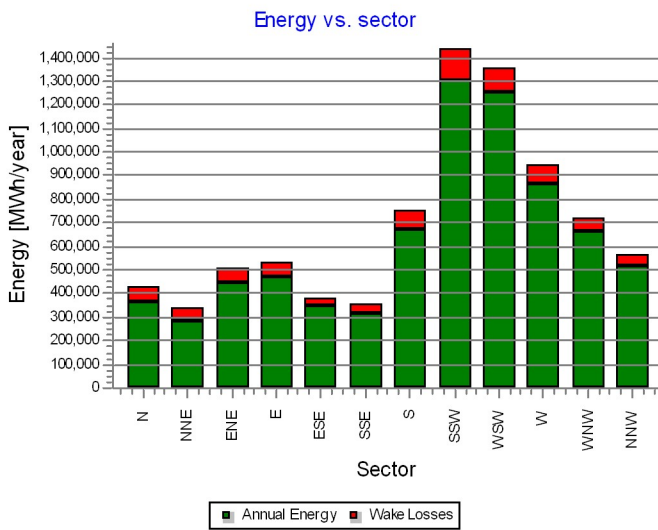
		[m]							
343	574,641	5,793,299	0.0	PONDERA VESTAS V164-10.0MW	10000	164.0	!O!	hub: 125.0 m (TOT: 207.0 m)	(1388)
344	574,503	5,794,323	0.0	PONDERA VESTAS V164-10.0MW	10000	164.0	!O!	hub: 125.0 m (TOT: 207.0 m)	(1389)
345	574,365	5,795,347	0.0	PONDERA VESTAS V164-10.0MW	10000	164.0	!O!	hub: 125.0 m (TOT: 207.0 m)	(1390)
346	574,227	5,796,371	0.0	PONDERA VESTAS V164-10.0MW	10000	164.0	!O!	hub: 125.0 m (TOT: 207.0 m)	(1391)
347	574,090	5,797,395	0.0	PONDERA VESTAS V164-10.0MW	10000	164.0	!O!	hub: 125.0 m (TOT: 207.0 m)	(1392)
348	576,744	5,791,541	0.0	PONDERA VESTAS V164-10.0MW	10000	164.0	!O!	hub: 125.0 m (TOT: 207.0 m)	(1393)
349	576,605	5,792,565	0.0	PONDERA VESTAS V164-10.0MW	10000	164.0	!O!	hub: 125.0 m (TOT: 207.0 m)	(1394)
350	576,467	5,793,589	0.0	PONDERA VESTAS V164-10.0MW	10000	164.0	!O!	hub: 125.0 m (TOT: 207.0 m)	(1395)
351	576,328	5,794,613	0.0	PONDERA VESTAS V164-10.0MW	10000	164.0	!O!	hub: 125.0 m (TOT: 207.0 m)	(1396)
352	576,190	5,795,637	0.0	PONDERA VESTAS V164-10.0MW	10000	164.0	!O!	hub: 125.0 m (TOT: 207.0 m)	(1397)
353	576,052	5,796,660	0.0	PONDERA VESTAS V164-10.0MW	10000	164.0	!O!	hub: 125.0 m (TOT: 207.0 m)	(1398)
354	578,292	5,793,879	0.0	PONDERA VESTAS V164-10.0MW	10000	164.0	!O!	hub: 125.0 m (TOT: 207.0 m)	(1399)
355	578,153	5,794,903	0.0	PONDERA VESTAS V164-10.0MW	10000	164.0	!O!	hub: 125.0 m (TOT: 207.0 m)	(1400)
356	578,015	5,795,926	0.0	PONDERA VESTAS V164-10.0MW	10000	164.0	!O!	hub: 125.0 m (TOT: 207.0 m)	(1401)
357	577,876	5,796,950	0.0	PONDERA VESTAS V164-10.0MW	10000	164.0	!O!	hub: 125.0 m (TOT: 207.0 m)	(1402)
358	576,220	5,798,604	0.0	PONDERA VESTAS V164-10.0MW	10000	164.0	!O!	hub: 125.0 m (TOT: 207.0 m)	(1403)
359	576,221	5,799,504	0.0	PONDERA VESTAS V164-10.0MW	10000	164.0	!O!	hub: 125.0 m (TOT: 207.0 m)	(1404)
360	578,659	5,799,014	0.0	PONDERA VESTAS V164-10.0MW	10000	164.0	!O!	hub: 125.0 m (TOT: 207.0 m)	(1405)
361	578,660	5,799,914	0.0	PONDERA VESTAS V164-10.0MW	10000	164.0	!O!	hub: 125.0 m (TOT: 207.0 m)	(1406)
362	581,098	5,798,523	0.0	PONDERA VESTAS V164-10.0MW	10000	164.0	!O!	hub: 125.0 m (TOT: 207.0 m)	(1407)
363	581,098	5,799,424	0.0	PONDERA VESTAS V164-10.0MW	10000	164.0	!O!	hub: 125.0 m (TOT: 207.0 m)	(1408)
364	580,646	5,803,664	0.0	PONDERA VESTAS V164-10.0MW	10000	164.0	!O!	hub: 125.0 m (TOT: 207.0 m)	(1409)
365	581,314	5,805,227	0.0	PONDERA VESTAS V164-10.0MW	10000	164.0	!O!	hub: 125.0 m (TOT: 207.0 m)	(1410)
366	581,981	5,806,790	0.0	PONDERA VESTAS V164-10.0MW	10000	164.0	!O!	hub: 125.0 m (TOT: 207.0 m)	(1411)
367	583,606	5,804,256	0.0	PONDERA VESTAS V164-10.0MW	10000	164.0	!O!	hub: 125.0 m (TOT: 207.0 m)	(1412)
368	584,343	5,807,061	0.0	PONDERA VESTAS V164-10.0MW	10000	164.0	!O!	hub: 125.0 m (TOT: 207.0 m)	(1413)
369	584,712	5,808,463	0.0	PONDERA VESTAS V164-10.0MW	10000	164.0	!O!	hub: 125.0 m (TOT: 207.0 m)	(1414)
370	575,031	5,791,196	0.0	PONDERA VESTAS V164-10.0MW	10000	164.0	!O!	hub: 125.0 m (TOT: 207.0 m)	(1415)
371	579,227	5,795,022	0.0	PONDERA VESTAS V164-10.0MW	10000	164.0	!O!	hub: 125.0 m (TOT: 207.0 m)	(1416)
372	579,230	5,796,000	0.0	PONDERA VESTAS V164-10.0MW	10000	164.0	!O!	hub: 125.0 m (TOT: 207.0 m)	(1417)
373	580,081	5,796,709	0.0	PONDERA VESTAS V164-10.0MW	10000	164.0	!O!	hub: 125.0 m (TOT: 207.0 m)	(1418)
374	577,510	5,831,183	0.0	PONDERA VESTAS V164-10.0MW	10000	164.0	!O!	hub: 125.0 m (TOT: 207.0 m)	(1419)
375	578,783	5,830,842	0.0	PONDERA VESTAS V164-10.0MW	10000	164.0	!O!	hub: 125.0 m (TOT: 207.0 m)	(1420)
376	581,651	5,831,440	0.0	PONDERA VESTAS V164-10.0MW	10000	164.0	!O!	hub: 125.0 m (TOT: 207.0 m)	(1421)
377	582,616	5,835,281	0.0	PONDERA VESTAS V164-10.0MW	10000	164.0	!O!	hub: 125.0 m (TOT: 207.0 m)	(1422)
378	583,903	5,840,401	0.0	PONDERA VESTAS V164-10.0MW	10000	164.0	!O!	hub: 125.0 m (TOT: 207.0 m)	(1423)
379	584,517	5,832,038	0.0	PONDERA VESTAS V164-10.0MW	10000	164.0	!O!	hub: 125.0 m (TOT: 207.0 m)	(1424)
380	585,160	5,834,599	0.0	PONDERA VESTAS V164-10.0MW	10000	164.0	!O!	hub: 125.0 m (TOT: 207.0 m)	(1425)
381	585,790	5,831,697	0.0	PONDERA VESTAS V164-10.0MW	10000	164.0	!O!	hub: 125.0 m (TOT: 207.0 m)	(1426)
382	590,570	5,830,924	0.0	PONDERA VESTAS V164-10.0MW	10000	164.0	!O!	hub: 125.0 m (TOT: 207.0 m)	(1427)
383	590,080	5,826,466	0.0	PONDERA VESTAS V164-10.0MW	10000	164.0	!O!	hub: 125.0 m (TOT: 207.0 m)	(1428)
384	588,648	5,826,832	0.0	PONDERA VESTAS V164-10.0MW	10000	164.0	!O!	hub: 125.0 m (TOT: 207.0 m)	(1429)
385	588,967	5,828,113	0.0	PONDERA VESTAS V164-10.0MW	10000	164.0	!O!	hub: 125.0 m (TOT: 207.0 m)	(1430)
386	590,895	5,841,260	0.0	PONDERA VESTAS V164-10.0MW	10000	164.0	!O!	hub: 125.0 m (TOT: 207.0 m)	(1431)
387	591,214	5,842,541	0.0	PONDERA VESTAS V164-10.0MW	10000	164.0	!O!	hub: 125.0 m (TOT: 207.0 m)	(1432)
388	591,533	5,843,822	0.0	PONDERA VESTAS V164-10.0MW	10000	164.0	!O!	hub: 125.0 m (TOT: 207.0 m)	(1433)
389	587,374	5,827,174	0.0	PONDERA VESTAS V164-10.0MW	10000	164.0	!O!	hub: 125.0 m (TOT: 207.0 m)	(1434)
390	587,694	5,828,454	0.0	PONDERA VESTAS V164-10.0MW	10000	164.0	!O!	hub: 125.0 m (TOT: 207.0 m)	(1435)
391	588,014	5,829,735	0.0	PONDERA VESTAS V164-10.0MW	10000	164.0	!O!	hub: 125.0 m (TOT: 207.0 m)	(1436)
392	589,305	5,840,320	0.0	PONDERA VESTAS V164-10.0MW	10000	164.0	!O!	hub: 125.0 m (TOT: 207.0 m)	(1437)
393	589,624	5,841,601	0.0	PONDERA VESTAS V164-10.0MW	10000	164.0	!O!	hub: 125.0 m (TOT: 207.0 m)	(1438)
394	589,943	5,842,882	0.0	PONDERA VESTAS V164-10.0MW	10000	164.0	!O!	hub: 125.0 m (TOT: 207.0 m)	(1439)
395	590,262	5,844,162	0.0	PONDERA VESTAS V164-10.0MW	10000	164.0	!O!	hub: 125.0 m (TOT: 207.0 m)	(1440)
396	590,582	5,845,443	0.0	PONDERA VESTAS V164-10.0MW	10000	164.0	!O!	hub: 125.0 m (TOT: 207.0 m)	(1441)
397	586,421	5,828,795	0.0	PONDERA VESTAS V164-10.0MW	10000	164.0	!O!	hub: 125.0 m (TOT: 207.0 m)	(1442)
398	586,715	5,829,983	0.0	PONDERA VESTAS V164-10.0MW	10000	164.0	!O!	hub: 125.0 m (TOT: 207.0 m)	(1443)
399	587,061	5,831,357	0.0	PONDERA VESTAS V164-10.0MW	10000	164.0	!O!	hub: 125.0 m (TOT: 207.0 m)	(1444)
400	588,035	5,840,660	0.0	PONDERA VESTAS V164-10.0MW	10000	164.0	!O!	hub: 125.0 m (TOT: 207.0 m)	(1445)
401	588,355	5,841,941	0.0	PONDERA VESTAS V164-10.0MW	10000	164.0	!O!	hub: 125.0 m (TOT: 207.0 m)	(1446)
402	588,674	5,843,222	0.0	PONDERA VESTAS V164-10.0MW	10000	164.0	!O!	hub: 125.0 m (TOT: 207.0 m)	(1447)
403	588,993	5,844,503	0.0	PONDERA VESTAS V164-10.0MW	10000	164.0	!O!	hub: 125.0 m (TOT: 207.0 m)	(1448)
404	589,313	5,845,783	0.0	PONDERA VESTAS V164-10.0MW	10000	164.0	!O!	hub: 125.0 m (TOT: 207.0 m)	(1449)

To be continued on next page...

PARK - Production Analysis

Calculation: HKW MER 16MW incl HKN&HKZWTG: All new WTGs, Air density 1.225 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
Roughness based energy	[MWh]	428,013.2	341,213.3	507,899.9	528,732.6	382,838.2	353,929.2	749,750.6	1,436,494.5	1,356,246.6	948,111.4	714,644.2	565,276.8	8,313,178.5
-Decrease due to wake losses	[MWh]	64,313.2	58,004.1	64,739.6	61,864.2	35,336.4	35,324.2	78,883.9	137,725.7	106,908.1	87,256.2	54,348.3	49,689.9	834,394.2
Resulting energy	[MWh]	363,699.8	283,208.9	443,159.8	466,868.7	347,502.1	318,604.7	670,867.1	1,298,768.1	1,249,338.8	860,855.5	660,296.5	515,586.7	7,478,752.5
Specific energy	[kWh/m ²]													1,301
Specific energy	[kWh/kW]													4,973
Decrease due to wake losses	[%]	15.0	17.0	12.7	11.7	9.2	10.0	10.5	9.6	7.9	9.2	7.6	8.8	10.04
Utilization	[%]	15.5	16.3	15.9	14.6	16.4	15.1	11.1	9.9	10.6	11.4	13.1	13.6	12.1
Operational	[Hours/year]	546	437	570	575	432	409	736	1,268	1,206	938	775	635	8,526
Full Load Equivalent	[Hours/year]	242	188	295	310	231	212	446	864	831	572	439	343	4,973





PARK - Power Curve Analysis

Calculation: HKW MER 16MW incl HKN&HKZWTG: 1 - Pondera RD279HH165 16000 279.0 !O!, Hub height: 164.5 m

Name: Theoretical PV curve at 16MW
Source: Pondera

Source/Date	Created by	Created	Edited	Stop wind speed [m/s]	Power control	CT curve type	Generator type	Specific power kW/m ²
25/04/2019	USER	25/04/2019	25/04/2019	25.0	Pitch	Standard pitch	Variable	0.26

NB: Theoretical power curve
Date: 25-04-2016
Author: WPU

HP curve comparison - Note: For standard air density

Vmean	[m/s]	5	6	7	8	9	10
HP value Pitch, variable speed (2013)	[MWh]	30,176	44,919	58,724	70,718	80,648	88,464
Pondera RD279HH165 16000 279.0 !O! Theoretical PV curve at 16MW	[MWh]	24,652	38,289	51,771	63,925	74,223	82,442
Check value	[%]	22	17	13	11	9	7

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/m²) 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 windPRO manual chapter 3.5.2.

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

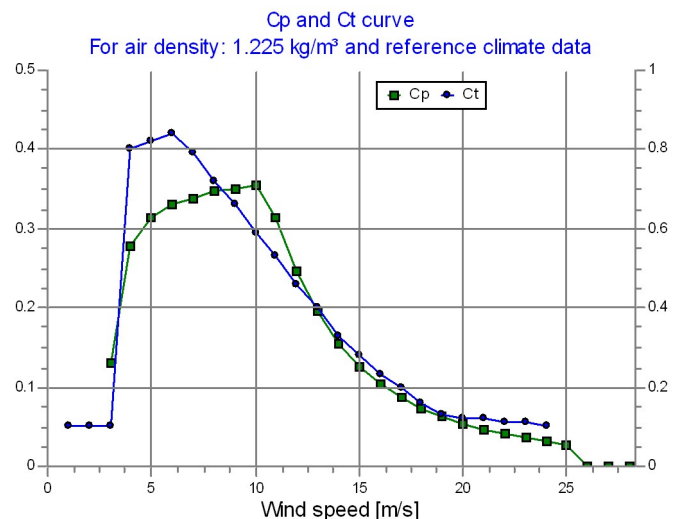
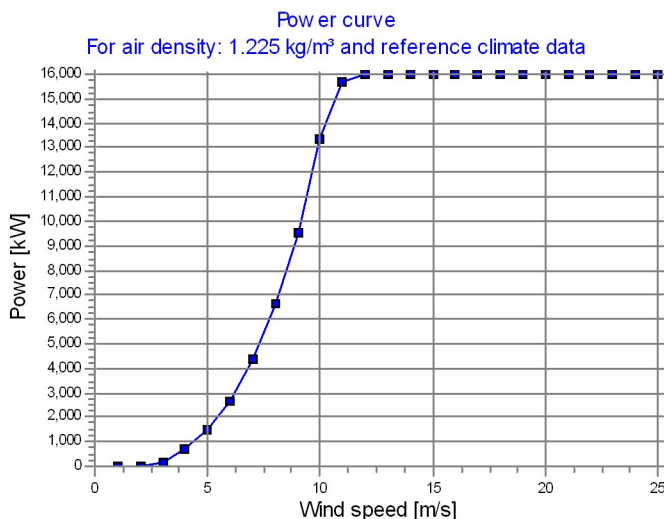
Original data, Air density: 1.225 kg/m³

Wind speed [m/s]	Power [kW]	Cp	Wind speed [m/s]	Ct curve
3.0	133.0	0.13	1.0	0.10
4.0	667.0	0.28	2.0	0.10
5.0	1,467.0	0.31	3.0	0.10
6.0	2,667.0	0.33	4.0	0.80
7.0	4,333.0	0.34	5.0	0.82
8.0	6,667.0	0.35	6.0	0.84
9.0	9,533.0	0.35	7.0	0.79
10.0	13,333.0	0.36	8.0	0.72
11.0	15,667.0	0.31	9.0	0.66
12.0	16,000.0	0.25	10.0	0.59
13.0	16,000.0	0.19	11.0	0.53
14.0	16,000.0	0.16	12.0	0.46
15.0	16,000.0	0.13	13.0	0.40
16.0	16,000.0	0.10	14.0	0.33
17.0	16,000.0	0.09	15.0	0.28
18.0	16,000.0	0.07	16.0	0.23
19.0	16,000.0	0.06	17.0	0.20
20.0	16,000.0	0.05	18.0	0.16
21.0	16,000.0	0.05	19.0	0.13
22.0	16,000.0	0.04	20.0	0.12
23.0	16,000.0	0.04	21.0	0.12
24.0	16,000.0	0.03	22.0	0.11
25.0	16,000.0	0.03	23.0	0.11
26.0	16,000.0	0.00	24.0	0.10
27.0	16,000.0	0.00		
28.0	16,000.0	0.00		

Power, Efficiency and energy vs. wind speed

Data used in calculation, Air density: 1.225 kg/m³ New windPRO method (adjusted IEC method, improved to match turbine control) <RECOMMENDED>

Wind speed [m/s]	Power [kW]	Cp	Interval [m/s]	Energy [MWh]	Acc. Energy [MWh]	Relative [%]
1.0	0.0	0.00	0.50-1.50	0.0	0.0	0.0
2.0	0.0	0.00	1.50-2.50	0.0	0.0	0.0
3.0	133.0	0.13	2.50-3.50	65.1	65.1	0.1
4.0	667.0	0.28	3.50-4.50	288.4	353.5	0.4
5.0	1,467.0	0.31	4.50-5.50	737.6	1,091.1	1.4
6.0	2,667.0	0.33	5.50-6.50	1,492.1	2,583.2	3.2
7.0	4,333.0	0.34	6.50-7.50	2,624.3	5,207.5	6.5
8.0	6,667.0	0.35	7.50-8.50	4,144.6	9,352.0	11.7
9.0	9,533.0	0.35	8.50-9.50	6,005.5	15,357.5	19.2
10.0	13,333.0	0.36	9.50-10.50	7,794.5	23,152.0	28.9
11.0	15,667.0	0.31	10.50-11.50	8,668.2	31,820.2	39.7
12.0	16,000.0	0.25	11.50-12.50	8,411.7	40,231.9	50.3
13.0	16,000.0	0.19	12.50-13.50	7,605.5	47,837.4	59.8
14.0	16,000.0	0.16	13.50-14.50	6,667.1	54,504.5	68.1
15.0	16,000.0	0.13	14.50-15.50	5,703.1	60,207.6	75.2
16.0	16,000.0	0.10	15.50-16.50	4,764.2	64,971.8	81.2
17.0	16,000.0	0.09	16.50-17.50	3,889.1	68,860.9	86.0
18.0	16,000.0	0.07	17.50-18.50	3,103.7	71,964.6	89.9
19.0	16,000.0	0.06	18.50-19.50	2,422.2	74,386.9	92.9
20.0	16,000.0	0.05	19.50-20.50	1,849.0	76,235.9	95.2
21.0	16,000.0	0.05	20.50-21.50	1,380.7	77,616.5	97.0
22.0	16,000.0	0.04	21.50-22.50	1,008.4	78,624.9	98.2
23.0	16,000.0	0.04	22.50-23.50	720.3	79,345.3	99.1
24.0	16,000.0	0.03	23.50-24.50	503.1	79,848.3	99.7
25.0	16,000.0	0.03	24.50-25.50	205.3	80,053.6	100.0



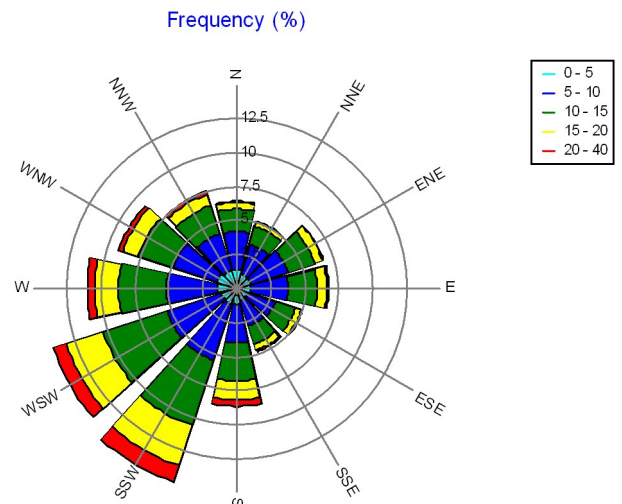
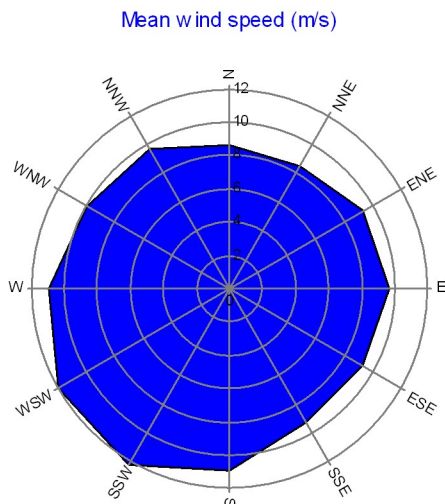
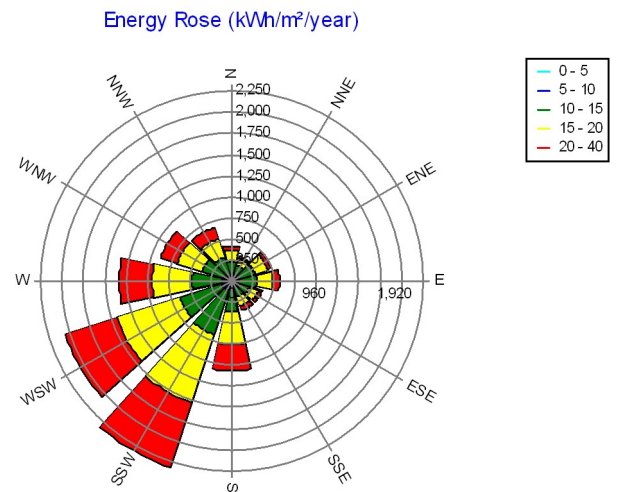
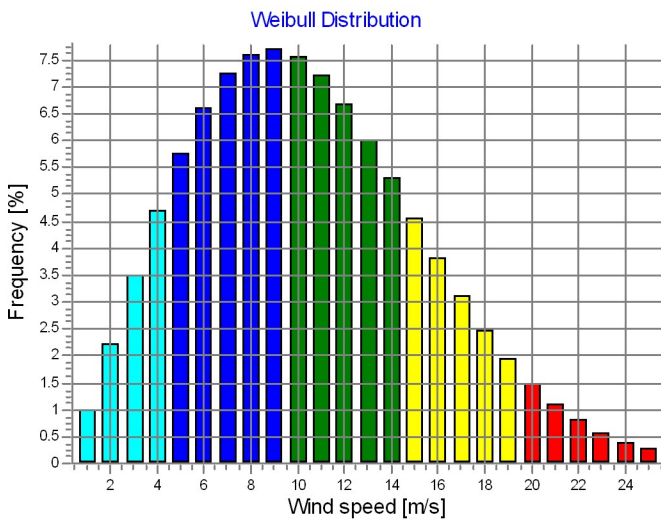
PARK - Wind Data Analysis

Calculation: HKW MER 16MW incl HKN&HKZWind data: A - HKW-03; Hub height: 164.5

Site coordinates
UTM (north)-ETRS89 Zone: 31
East: 548,060 North: 5,829,150
Wind statistics
Ijmuiden Mast (Regression MCP using EmdConvwx_N52.850_E003.440 (1)) -

Weibull Data

Sector	A- parameter [m/s]	Wind speed [m/s]	k- parameter	Frequency [%]
Current site	10.00	9.74	8.63	6.4
0 N	10.00	9.74	8.63	6.4
1 NNE	9.63	8.53	2.158	5.1
2 ENE	10.54	9.34	2.338	6.7
3 E	10.94	9.69	2.268	6.7
4 ESE	10.52	9.32	2.307	5.1
5 SSE	10.48	9.28	2.150	4.8
6 S	12.40	10.99	2.209	8.6
7 SSW	13.76	12.20	2.443	14.9
8 WSW	13.47	11.95	2.467	14.1
9 W	12.29	10.89	2.201	11.0
10 WNW	11.26	9.98	2.092	9.1
11 NNW	10.90	9.66	2.064	7.4
All	11.81	10.46	2.178	100.0



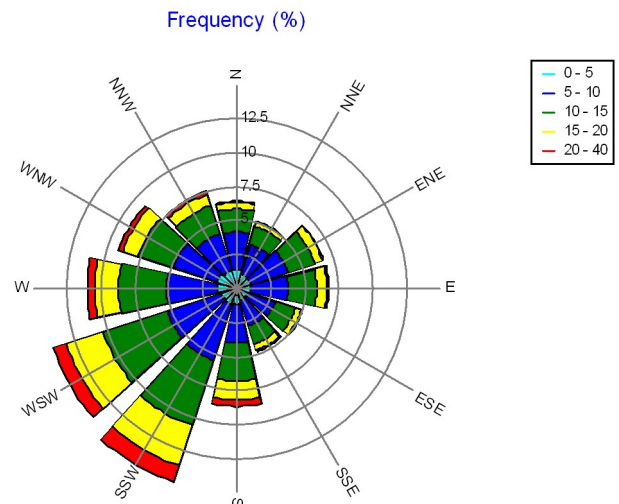
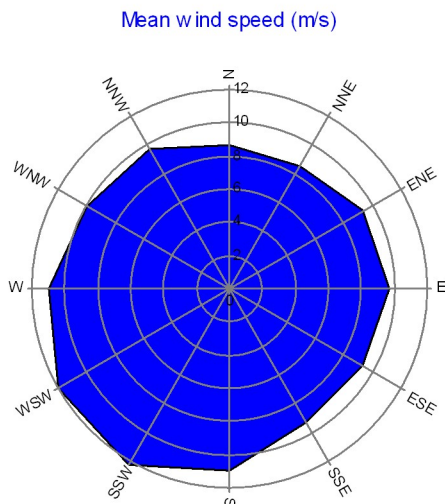
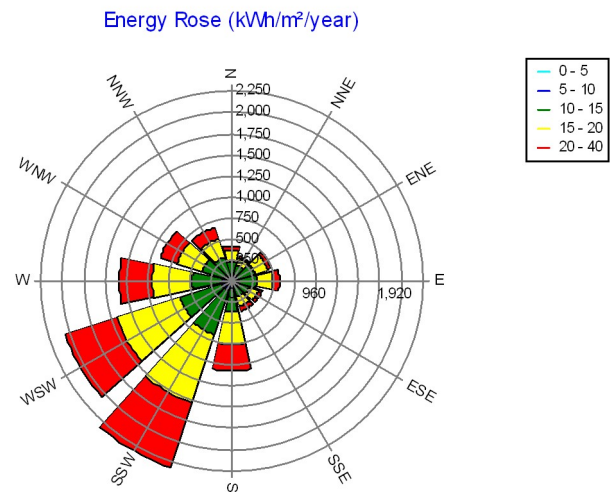
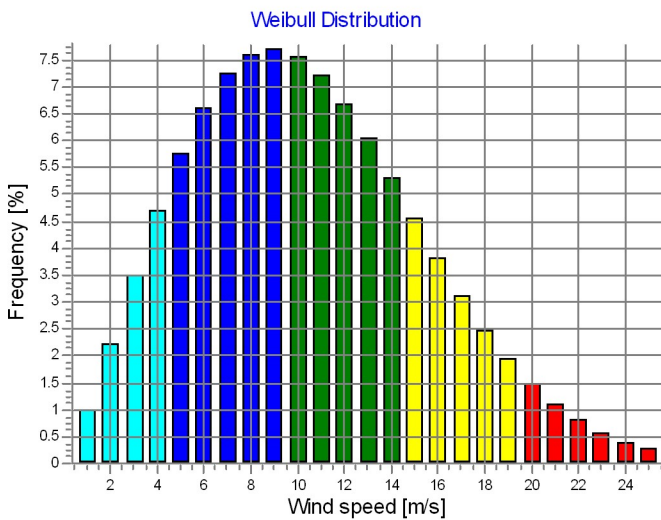
PARK - Wind Data Analysis

Calculation: HKW MER 16MW incl HKN&HKZWind data: A - HKW-03; Hub height: 165.0

Site coordinates
UTM (north)-ETRS89 Zone: 31
East: 548,060 North: 5,829,150
Wind statistics
Ijmuiden Mast (Regression MCP using EmdConvwx_N52.850_E003.440 (1)) -

Weibull Data

Sector	A- parameter [m/s]	Current site Wind speed [m/s]	k- parameter	Frequency [%]
0 N	100.00	9.74	8.63	6.4
1 NNE	9.63	8.53	2.154	5.1
2 ENE	10.54	9.34	2.338	6.7
3 E	10.94	9.69	2.268	6.7
4 ESE	10.53	9.32	2.307	5.1
5 SSE	10.49	9.29	2.146	4.8
6 S	12.41	10.99	2.209	8.6
7 SSW	13.76	12.20	2.443	14.9
8 WSW	13.48	11.96	2.467	14.1
9 W	12.30	10.89	2.201	11.0
10 WNW	11.27	9.98	2.092	9.1
11 NNW	10.91	9.66	2.064	7.4
All	11.82	10.46	2.178	100.0



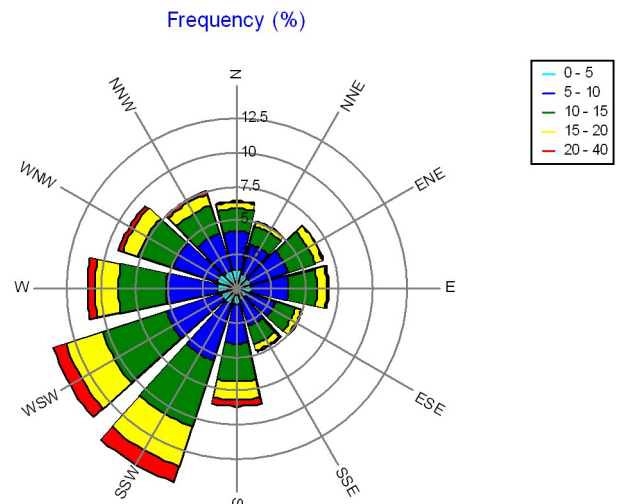
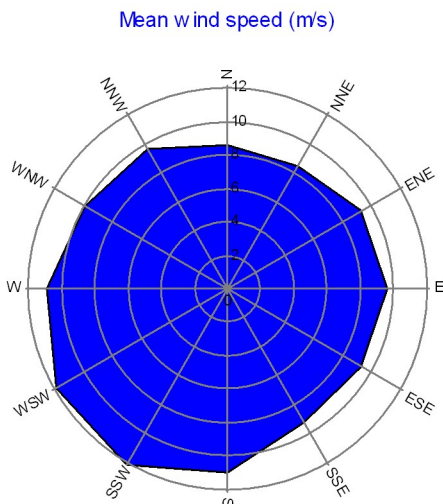
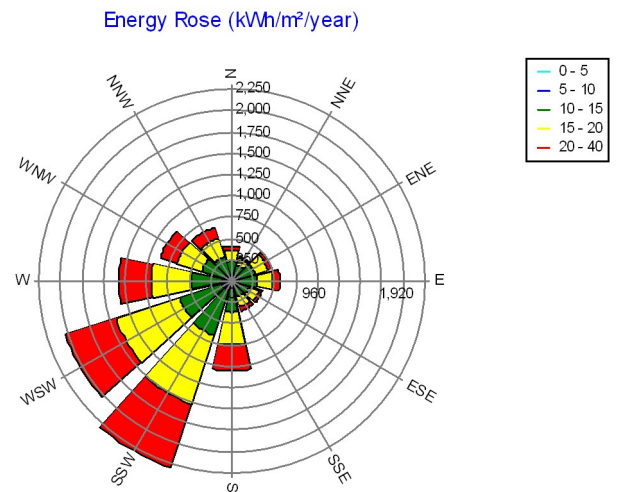
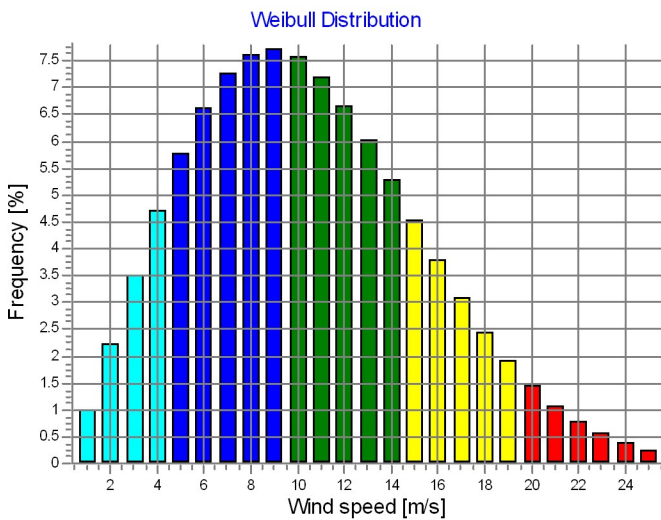
PARK - Wind Data Analysis

Calculation: HKW MER 16MW incl HKN&HKZWind data: B - HKW-04; Hub height: 164.5

Site coordinates
UTM (north)-ETRS89 Zone: 31
East: 558,112 North: 5,839,246
Wind statistics
Ijmuiden Mast (Regression MCP using EmdConvwx_N52.850_E003.440 (1)) -

Weibull Data

Sector	A- parameter [m/s]	Current site Wind speed [m/s]	k- parameter	Frequency [%]
0 Synth	100.00	9.72	8.61	6.4
1 NNE	9.61	8.51	2.158	5.1
2 ENE	10.51	9.32	2.338	6.7
3 E	10.91	9.67	2.268	6.7
4 ESE	10.50	9.30	2.307	5.1
5 SSE	10.46	9.26	2.150	4.8
6 S	12.36	10.95	2.209	8.6
7 SSW	13.70	12.15	2.443	14.9
8 WSW	13.42	11.91	2.467	14.1
9 W	12.26	10.85	2.201	11.0
10 WNW	11.23	9.95	2.092	9.1
11 NNW	10.87	9.63	2.064	7.4
All	11.78	10.43	2.178	100.0



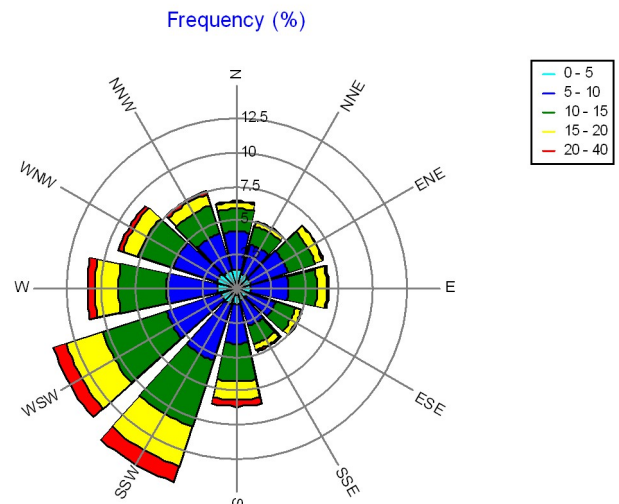
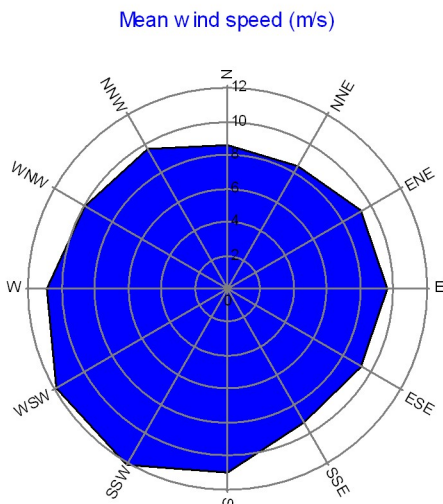
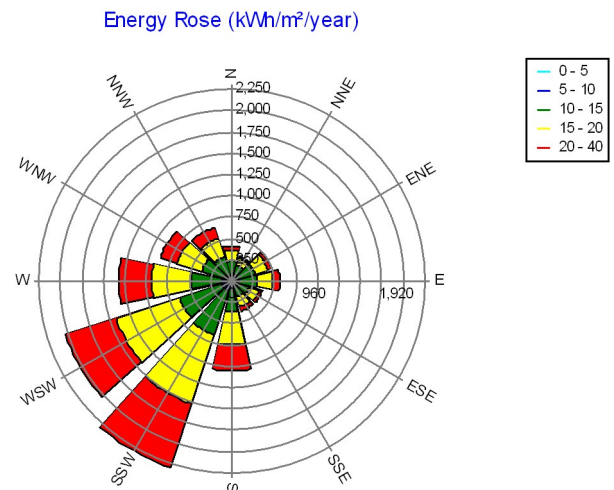
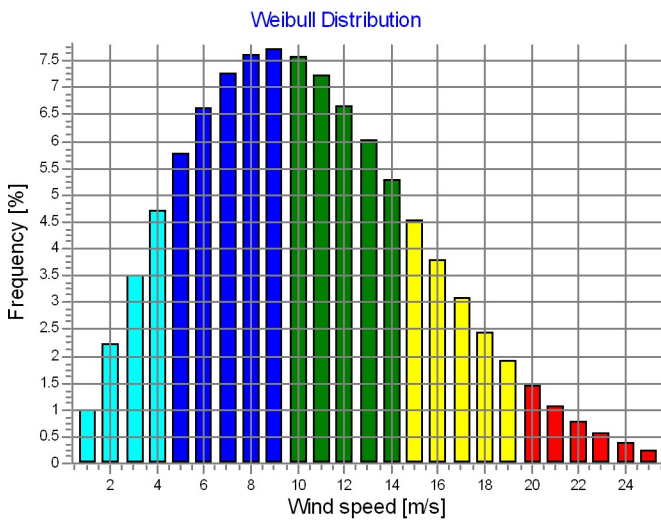
PARK - Wind Data Analysis

Calculation: HKW MER 16MW incl HKN&HKZWind data: B - HKW-04; Hub height: 165.0

Site coordinates
UTM (north)-ETRS89 Zone: 31
East: 558,112 North: 5,839,246
Wind statistics
Ijmuiden Mast (Regression MCP using EmdConvwx_N52.850_E003.440 (1)) -

Weibull Data

Sector	A- parameter [m/s]	Current site Wind speed [m/s]	k- parameter	Frequency [%]
0 Synth	100.00	9.73	8.61	6.4
1 NNE	9.61	8.51	2.154	5.1
2 ENE	10.52	9.32	2.338	6.7
3 E	10.92	9.67	2.268	6.7
4 ESE	10.50	9.30	2.307	5.1
5 SSE	10.46	9.27	2.146	4.8
6 S	12.37	10.95	2.209	8.6
7 SSW	13.71	12.16	2.443	14.9
8 WSW	13.43	11.91	2.467	14.1
9 W	12.26	10.86	2.201	11.0
10 WNW	11.24	9.95	2.092	9.1
11 NNW	10.88	9.64	2.064	7.4
All	11.78	10.43	2.178	100.0



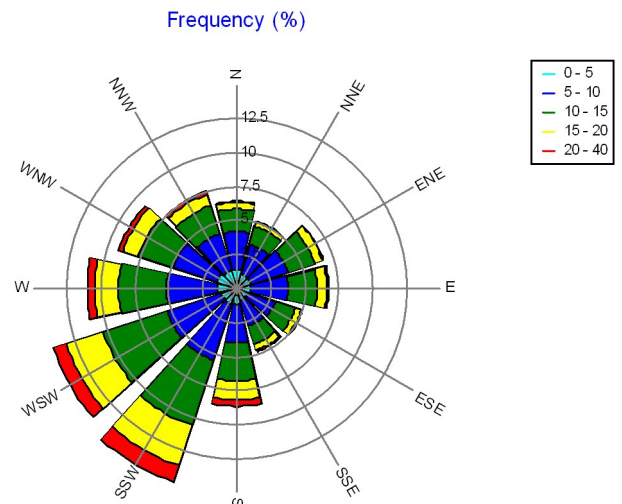
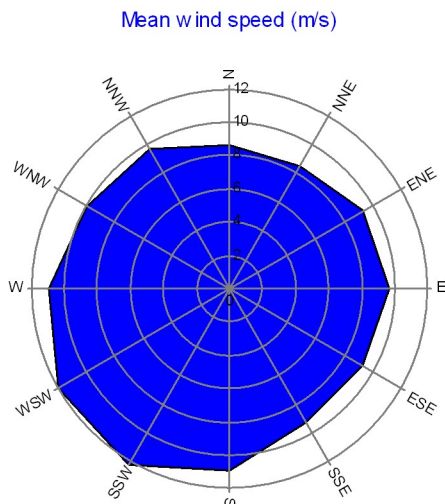
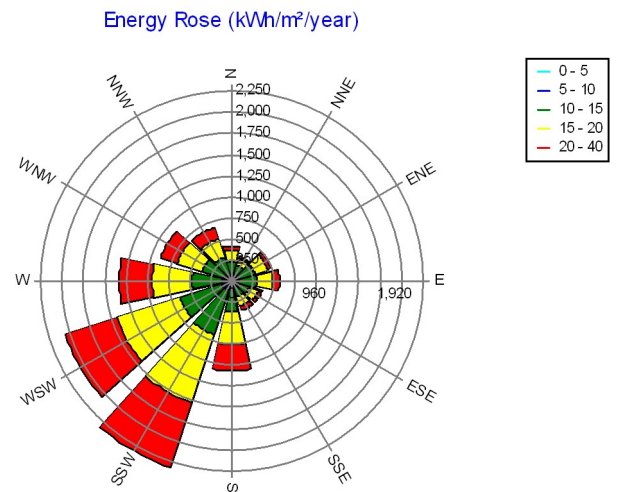
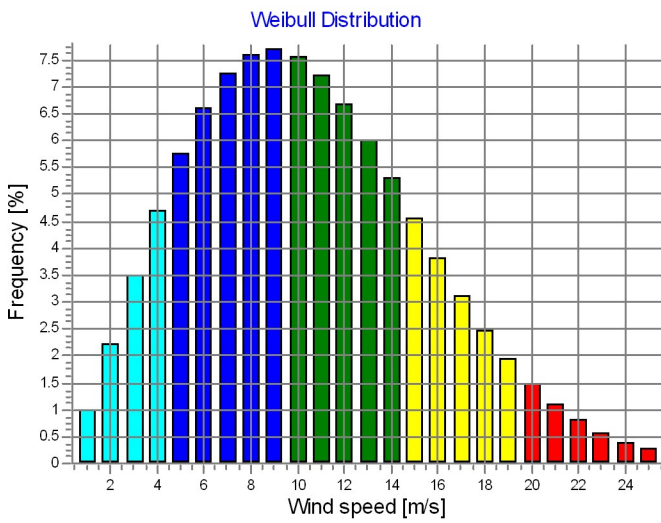
PARK - Wind Data Analysis

Calculation: HKW MER 16MW incl HKN&HKZWind data: C - HKW-05; Hub height: 164.5

Site coordinates
UTM (north)-ETRS89 Zone: 31
East: 558,004 North: 5,849,256
Wind statistics
Ijmuiden Mast (Regression MCP using EmdConvwx_N52.850_E003.440 (1)) -

Weibull Data

Sector	A- parameter [m/s]	Wind speed [m/s]	k- parameter	Frequency [%]
0 N	100.00	9.74	8.63	6.4
1 NNE	9.63	8.53	2.158	5.1
2 ENE	10.54	9.34	2.338	6.7
3 E	10.94	9.69	2.268	6.7
4 ESE	10.52	9.32	2.307	5.1
5 SSE	10.48	9.28	2.150	4.8
6 S	12.40	10.99	2.209	8.6
7 SSW	13.76	12.20	2.443	14.9
8 WSW	13.47	11.95	2.467	14.1
9 W	12.29	10.89	2.201	11.0
10 WNW	11.26	9.98	2.092	9.1
11 NNW	10.90	9.66	2.064	7.4
All	11.81	10.46	2.178	100.0



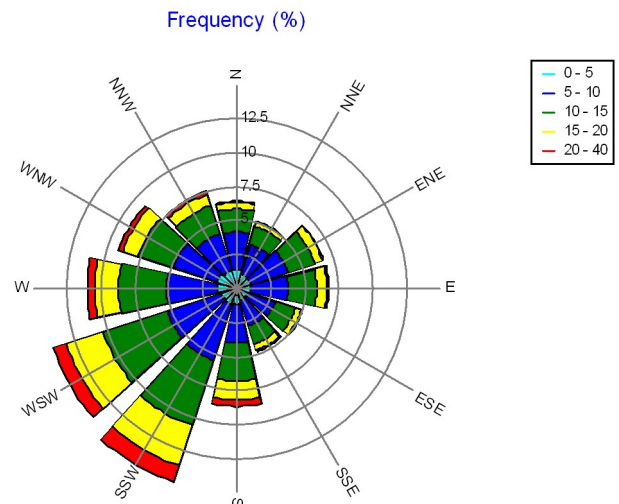
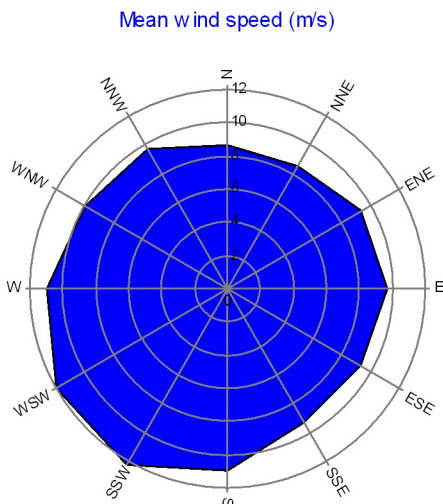
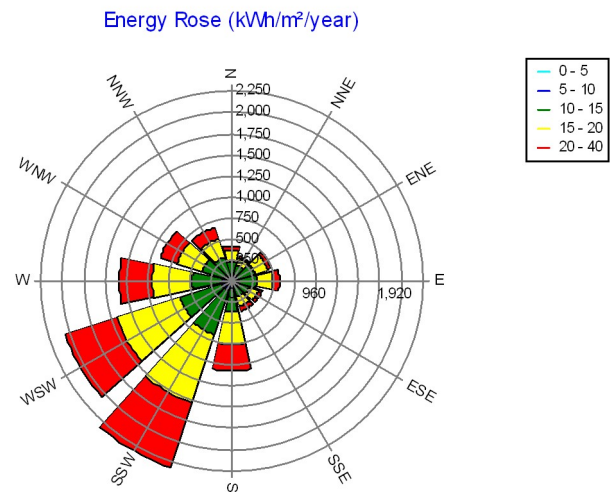
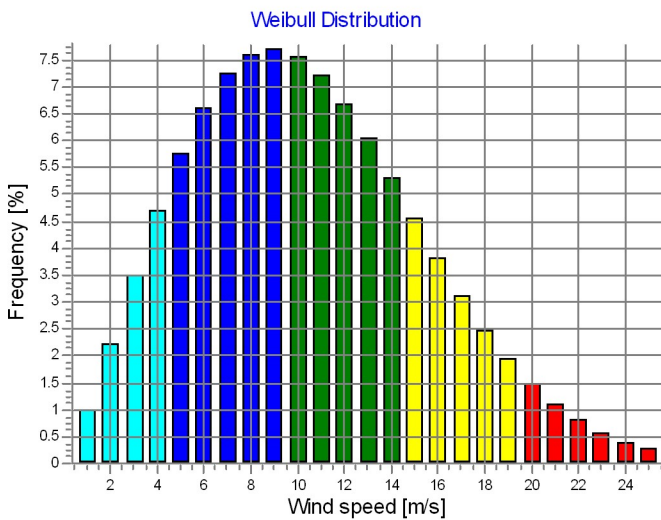
PARK - Wind Data Analysis

Calculation: HKW MER 16MW incl HKN&HKZWind data: C - HKW-05; Hub height: 165.0

Site coordinates
UTM (north)-ETRS89 Zone: 31
East: 558,004 North: 5,849,256
Wind statistics
Ijmuiden Mast (Regression MCP using EmdConvwx_N52.850_E003.440 (1)) -

Weibull Data

Sector	A- parameter [m/s]	Wind speed [m/s]	k- parameter	Frequency [%]
0 Synth	100.00	9.74	8.63	6.4
1 NNE	9.63	8.53	2.154	5.1
2 ENE	10.54	9.34	2.338	6.7
3 E	10.94	9.69	2.268	6.7
4 ESE	10.53	9.32	2.307	5.1
5 SSE	10.49	9.29	2.146	4.8
6 S	12.41	10.99	2.209	8.6
7 SSW	13.76	12.20	2.443	14.9
8 WSW	13.48	11.96	2.467	14.1
9 W	12.30	10.89	2.201	11.0
10 WNW	11.27	9.98	2.092	9.1
11 NNW	10.91	9.66	2.064	7.4
All	11.82	10.46	2.178	100.0



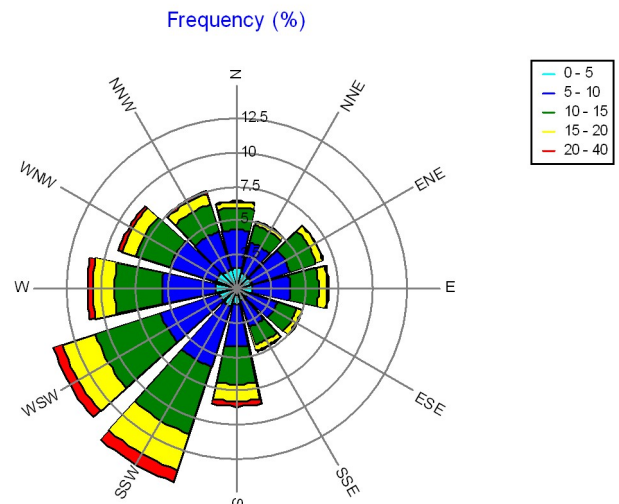
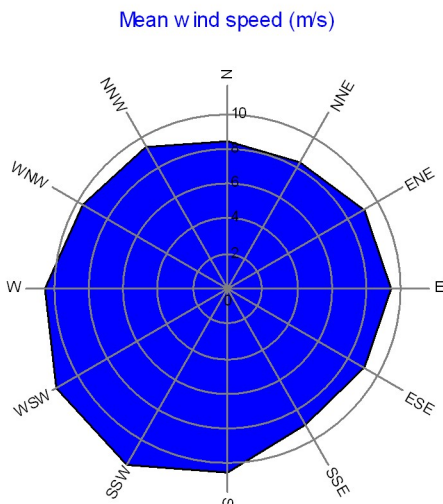
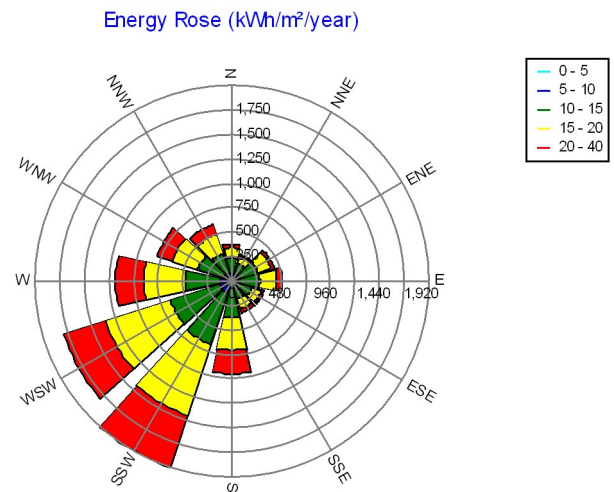
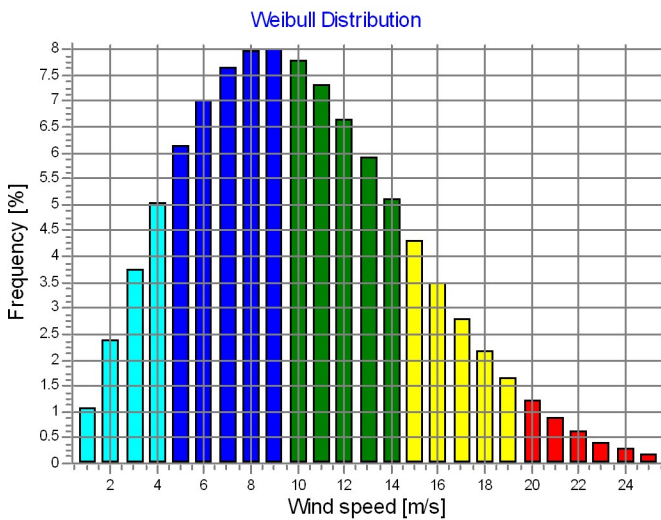
PARK - Wind Data Analysis

Calculation: HKW MER 16MW incl HKN&HKZWind data: D - OWEZ; Hub height: 165.0

Site coordinates
UTM (north)-ETRS89 Zone: 31
East: 596,112 North: 5,829,642
Wind statistics
Ijmuiden Mast (Regression MCP using EmdConvwx_N52.850_E003.440 (1)) -

Weibull Data

Sector	A- parameter [m/s]	Current site Wind speed [m/s]	k- parameter	Frequency [%]
0 N	100.00	9.49	8.41	6.4
1 NNE		9.39	8.32	5.1
2 ENE		10.25	9.08	6.7
3 E		10.61	9.40	6.7
4 ESE		10.23	9.07	5.1
5 SSE		10.19	9.02	4.8
6 S		11.91	10.55	8.6
7 SSW		13.09	11.61	14.9
8 WSW		12.86	11.40	14.1
9 W		11.82	10.46	11.0
10 WNW		10.89	9.64	9.1
11 NNW		10.56	9.35	7.4
All		11.37	10.07	100.0



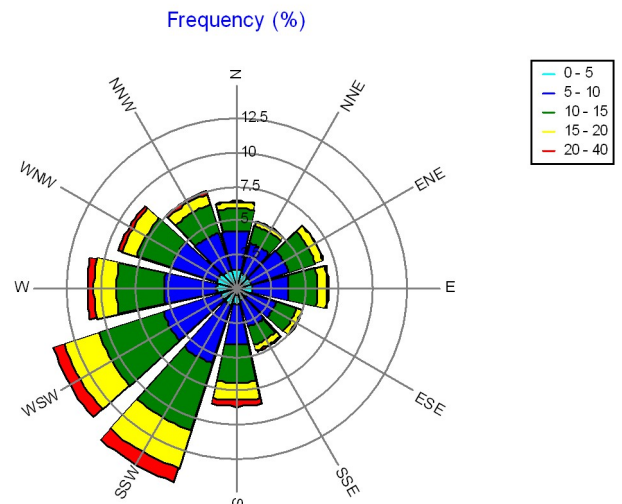
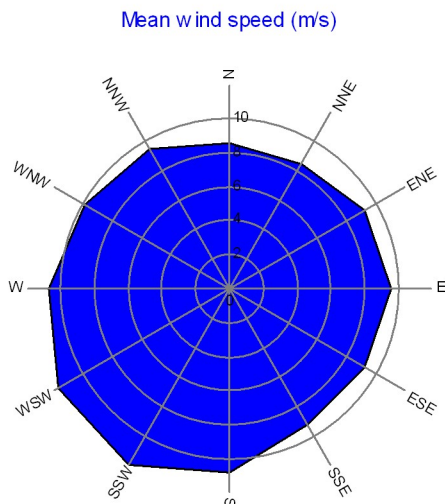
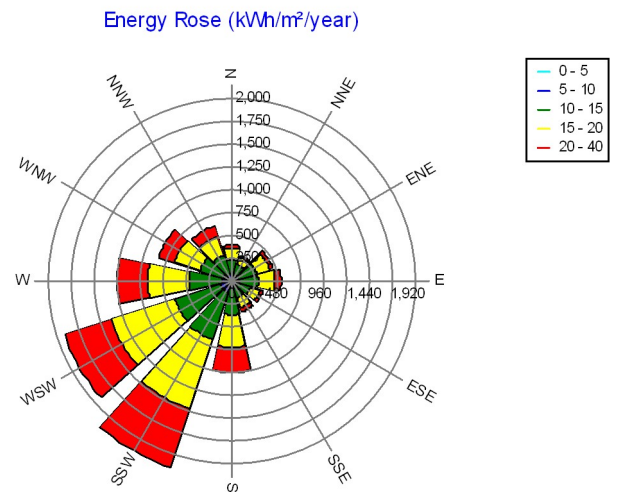
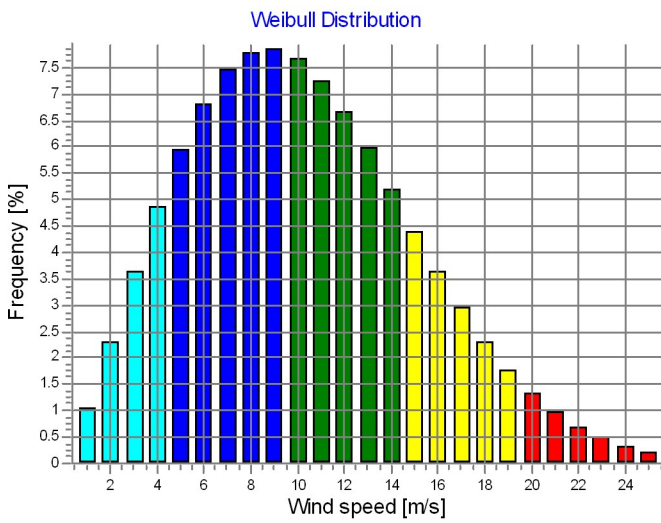
PARK - Wind Data Analysis

Calculation: HKW MER 16MW incl HKN&HKZWind data: E - Prinses Amalia; Hub height: 165.0

Site coordinates
UTM (north)-ETRS89 Zone: 31
East: 582,817 North: 5,827,056
Wind statistics
Ijmuiden Mast (Regression MCP using EmdConvwx_N52.850_E003.440 (1)) -

Weibull Data

Sector	A- parameter [m/s]	Wind speed [m/s]	k- parameter	Frequency [%]
0 N	100.00	9.61	8.52	6.4
1 NNE	9.61	9.74	2.064	6.4
2 ENE	10.39	9.21	2.338	6.7
3 E	10.77	9.54	2.268	6.7
4 ESE	10.37	9.19	2.307	5.1
5 SSE	10.33	9.15	2.146	4.8
6 S	12.15	10.76	2.209	8.6
7 SSW	13.41	11.89	2.443	14.9
8 WSW	13.15	11.66	2.467	14.1
9 W	12.05	10.67	2.201	11.0
10 WNW	11.07	9.81	2.092	9.1
11 NNW	10.73	9.50	2.064	7.4
All	11.58	10.26	2.182	100.0



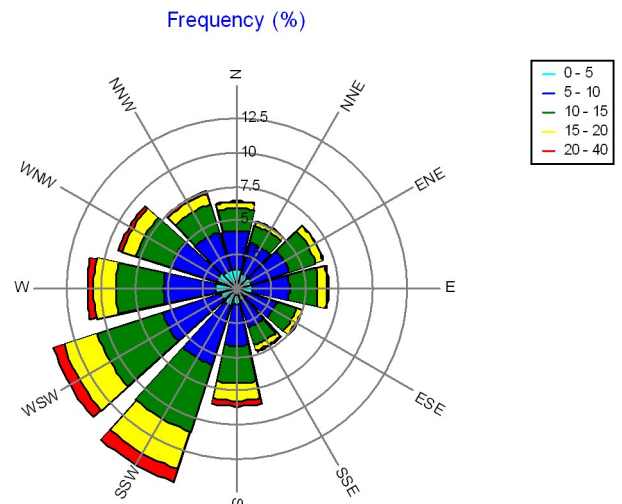
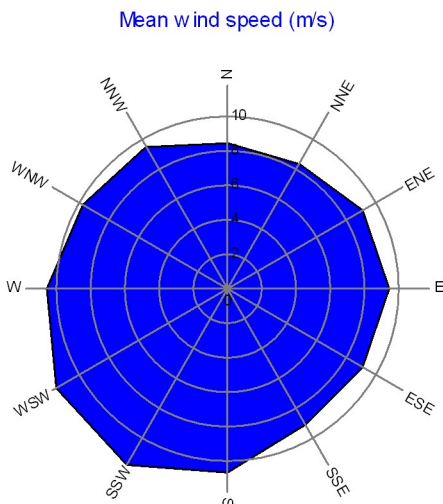
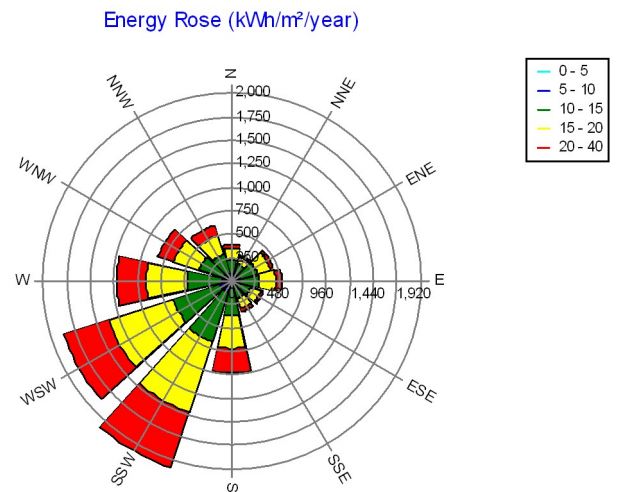
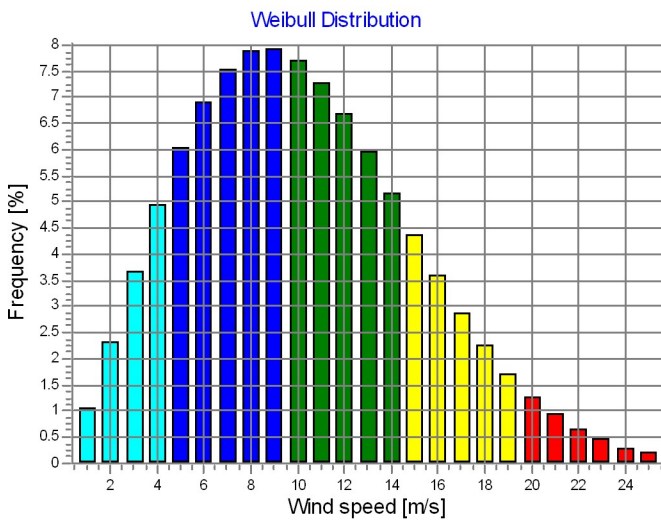
PARK - Wind Data Analysis

Calculation: HKW MER 16MW incl HKN&HKZWind data: F - Luchterduinen; Hub height: 165.0

Site coordinates
UTM (north)-ETRS89 Zone: 31
East: 578,881 North: 5,806,416
Wind statistics
IJmuiden Mast (Regression MCP using EmdConvwx_N52.850_E003.440 (1)) -

Weibull Data

Sector	A- parameter [m/s]	Current site Wind speed [m/s]	k- parameter	Frequency [%]
0 N	100.00	9.58	0.966	6.4
1 NNE	9.46	8.38	2.154	5.1
2 ENE	10.33	9.15	2.338	6.7
3 E	10.70	9.48	2.268	6.7
4 ESE	10.31	9.14	2.307	5.1
5 SSE	10.27	9.09	2.146	4.8
6 S	12.05	10.67	2.209	8.6
7 SSW	13.27	11.77	2.443	14.9
8 WSW	13.03	11.55	2.467	14.1
9 W	11.95	10.58	2.201	11.0
10 WNW	10.99	9.74	2.092	9.1
11 NNW	10.66	9.44	2.064	7.4
All	11.49	10.18	2.186	100.0



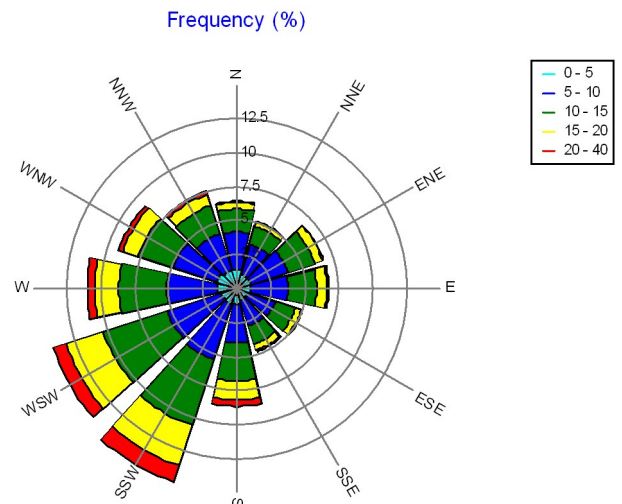
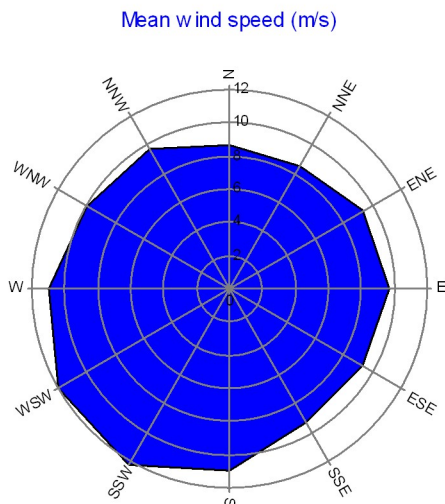
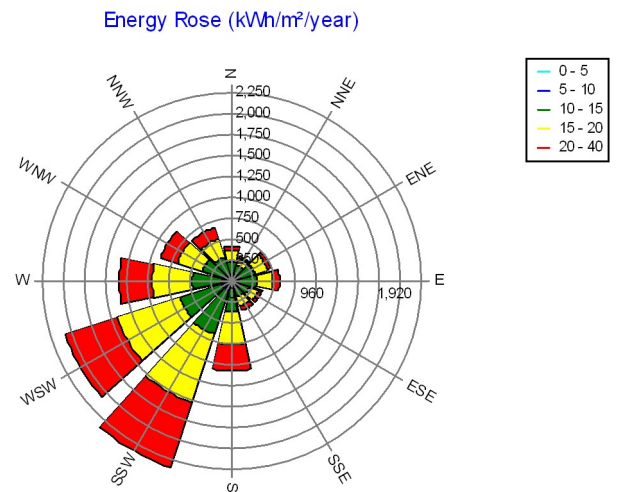
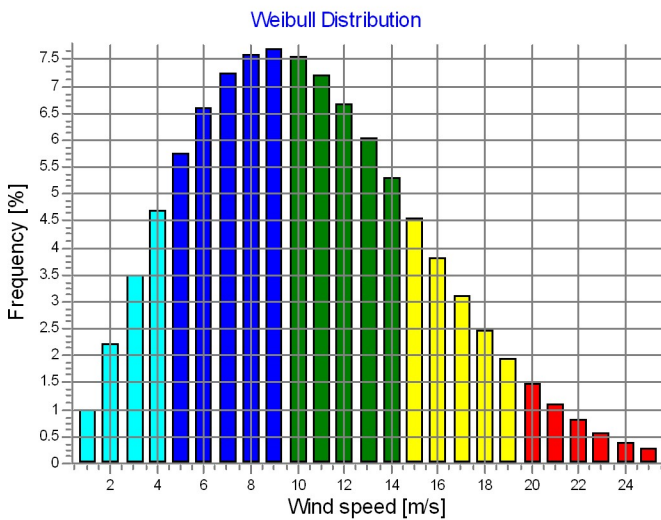
PARK - Wind Data Analysis

Calculation: HKW MER 16MW incl HKN&HKZWind data: G - HKW-02; Hub height: 164.5

Site coordinates
UTM (north)-ETRS89 Zone: 31
East: 543,967 North: 5,835,763
Wind statistics
Ijmuiden Mast (Regression MCP using EmdConvwx_N52.850_E003.440 (1)) -

Weibull Data

Sector	A- parameter [m/s]	Wind speed [m/s]	k- parameter	Frequency [%]
0 Synth	100.00	9.75	8.63	6.4
1 NNE	9.63	8.53	2.158	5.1
2 ENE	10.54	9.34	2.338	6.7
3 E	10.95	9.70	2.268	6.7
4 ESE	10.53	9.33	2.307	5.1
5 SSE	10.49	9.29	2.150	4.8
6 S	12.42	11.00	2.209	8.6
7 SSW	13.78	12.22	2.443	14.9
8 WSW	13.49	11.97	2.467	14.1
9 W	12.31	10.90	2.201	11.0
10 WNW	11.27	9.98	2.092	9.1
11 NNW	10.91	9.67	2.064	7.4
All	11.82	10.47	2.178	100.0



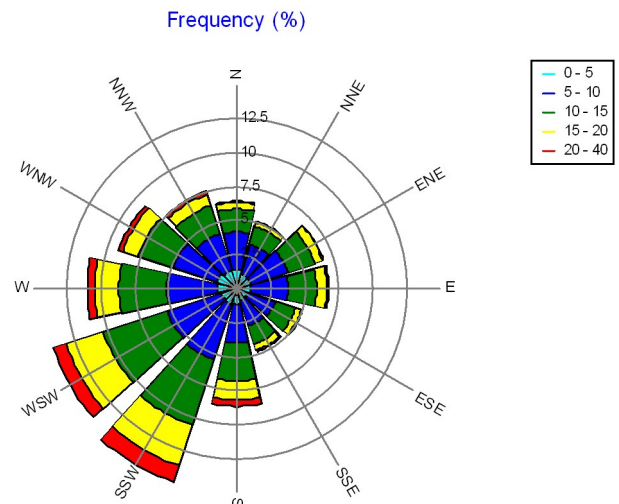
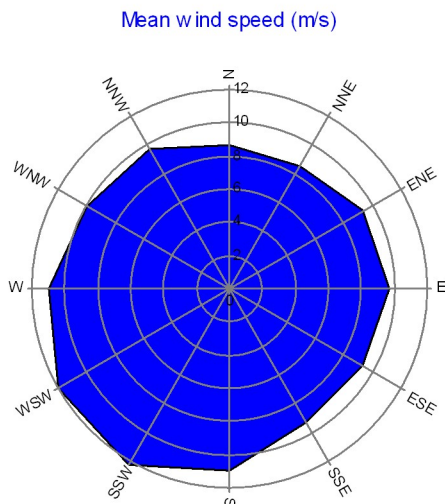
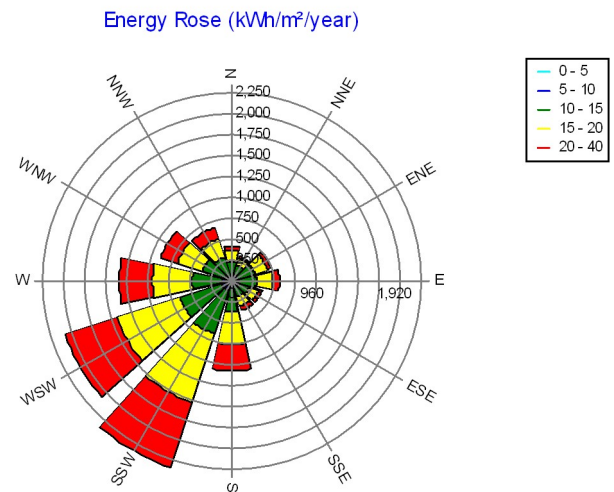
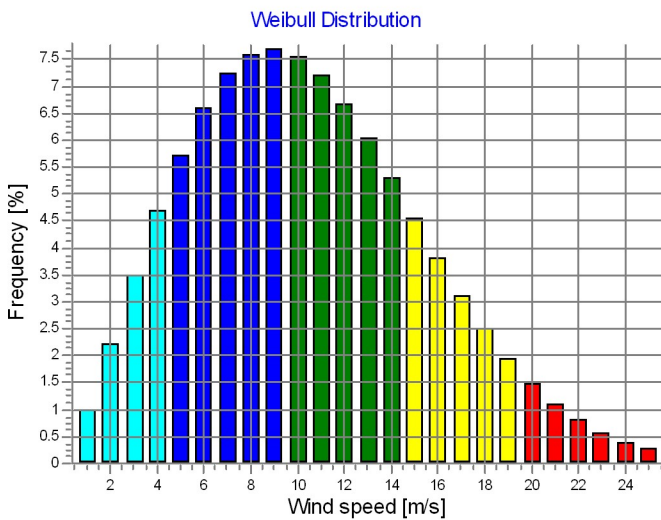
PARK - Wind Data Analysis

Calculation: HKW MER 16MW incl HKN&HKZWind data: G - HKW-02; Hub height: 165.0

Site coordinates
UTM (north)-ETRS89 Zone: 31
East: 543,967 North: 5,835,763
Wind statistics
Ijmuiden Mast (Regression MCP using EmdConvwx_N52.850_E003.440 (1)) -

Weibull Data

Sector	A- parameter [m/s]	Wind speed [m/s]	k- parameter	Frequency [%]
0 N	100.00	9.75	8.64	6.4
1 NNE	9.64	8.54	2.154	5.1
2 ENE	10.55	9.35	2.338	6.7
3 E	10.95	9.70	2.268	6.7
4 ESE	10.53	9.33	2.307	5.1
5 SSE	10.49	9.29	2.146	4.8
6 S	12.42	11.00	2.209	8.6
7 SSW	13.78	12.22	2.443	14.9
8 WSW	13.50	11.97	2.467	14.1
9 W	12.31	10.90	2.201	11.0
10 WNW	11.28	9.99	2.092	9.1
11 NNW	10.92	9.67	2.064	7.4
All	11.83	10.47	2.178	100.0



PARK - Park power curve

Calculation: HKW MER 16MW incl HKN&HKZ

Wind speed [m/s]	Power													
	Free WTGs [kW]	Park WTGs [kW]	N [kW]	NNE [kW]	ENE [kW]	E [kW]	ESE [kW]	SSE [kW]	S [kW]	SSW [kW]	WSW [kW]	W [kW]	WNW [kW]	NNW [kW]
0.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3.5	37,600	28,874	28,073	27,510	28,723	28,734	30,746	29,895	28,096	27,327	28,879	28,931	31,020	30,102
4.5	100,298	68,008	65,962	62,578	66,556	67,655	75,261	71,498	65,921	62,112	67,180	68,645	76,298	72,644
5.5	194,298	132,178	127,415	121,218	129,278	131,669	146,809	139,682	127,322	120,235	130,786	133,444	148,854	141,977
6.5	329,000	226,534	218,367	207,769	222,043	225,582	251,012	239,614	218,240	205,683	224,540	228,972	254,439	243,648
7.5	517,000	363,625	351,159	333,779	356,503	362,273	401,602	384,858	350,925	330,284	360,634	367,565	406,948	391,243
8.5	761,400	553,332	534,483	511,363	544,179	551,793	606,592	585,120	534,484	505,445	550,209	558,745	613,508	593,243
9.5	1,074,702	804,687	778,117	749,055	794,261	802,253	874,037	847,762	778,228	740,698	802,088	811,885	883,526	858,918
10.5	1,363,000	1,095,573	1,061,521	1,034,652	1,088,772	1,094,339	1,171,093	1,148,494	1,062,894	1,025,045	1,096,753	1,101,662	1,177,223	1,156,272
11.5	1,488,349	1,335,892	1,301,865	1,293,613	1,344,234	1,333,417	1,382,429	1,378,096	1,302,747	1,291,238	1,345,518	1,336,009	1,383,642	1,380,942
12.5	1,504,000	1,456,689	1,432,604	1,436,840	1,471,012	1,455,654	1,468,525	1,477,802	1,431,535	1,441,920	1,469,107	1,455,554	1,468,758	1,479,458
13.5	1,504,000	1,493,708	1,482,012	1,487,496	1,500,668	1,494,176	1,495,222	1,501,067	1,480,023	1,491,031	1,500,321	1,493,931	1,495,315	1,501,953
14.5	1,504,000	1,502,390	1,499,135	1,501,803	1,503,898	1,502,645	1,502,833	1,503,892	1,497,943	1,502,566	1,503,896	1,502,493	1,502,874	1,503,980
15.5	1,504,000	1,503,890	1,503,626	1,503,923	1,504,000	1,503,937	1,503,959	1,504,000	1,503,366	1,503,968	1,504,000	1,503,918	1,503,962	1,504,000
16.5	1,504,000	1,503,996	1,504,000	1,504,000	1,504,000	1,504,000	1,504,000	1,504,000	1,503,997	1,504,000	1,504,000	1,504,000	1,504,000	1,504,000
17.5	1,504,000	1,503,997	1,504,000	1,504,000	1,504,000	1,504,000	1,504,000	1,504,000	1,504,000	1,504,000	1,504,000	1,504,000	1,504,000	1,504,000
18.5	1,504,000	1,503,997	1,504,000	1,504,000	1,504,000	1,504,000	1,504,000	1,504,000	1,504,000	1,504,000	1,504,000	1,504,000	1,504,000	1,504,000
19.5	1,504,000	1,503,997	1,504,000	1,504,000	1,504,000	1,504,000	1,504,000	1,504,000	1,504,000	1,504,000	1,504,000	1,504,000	1,504,000	1,504,000
20.5	1,504,000	1,503,997	1,504,000	1,504,000	1,504,000	1,504,000	1,504,000	1,504,000	1,504,000	1,504,000	1,504,000	1,504,000	1,504,000	1,504,000
21.5	1,504,000	1,503,997	1,504,000	1,504,000	1,504,000	1,504,000	1,504,000	1,504,000	1,504,000	1,504,000	1,504,000	1,504,000	1,504,000	1,504,000
22.5	1,504,000	1,503,997	1,504,000	1,504,000	1,504,000	1,504,000	1,504,000	1,504,000	1,504,000	1,504,000	1,504,000	1,504,000	1,504,000	1,504,000
23.5	1,504,000	1,503,997	1,504,000	1,504,000	1,504,000	1,504,000	1,504,000	1,504,000	1,504,000	1,504,000	1,504,000	1,504,000	1,504,000	1,504,000
24.5	1,504,000	1,503,997	1,504,000	1,504,000	1,504,000	1,504,000	1,504,000	1,504,000	1,504,000	1,504,000	1,504,000	1,504,000	1,504,000	1,504,000
25.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
26.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
28.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Description:

The park power curve is similar to a WTG power curve, meaning that when a given wind speed appears in front of the park with same speed in the entire wind farm area (before influence from the park), the output from the park can be found in the park power curve. Another way to say this: The park power curve includes wake losses, but do NOT include terrain given variations in the wind speed over the park area.

Measuring a park power curve is not as simple as measuring a WTG power curve due to the fact that the park power curve depends on the wind direction and that the same wind speed normally will not appear for the entire park area at the same time (only in very flat non-complex terrain). The idea with this version of the park power curve is not to use it for validation based on measurements. This would require at least 2 measurement masts at two sides of the park, unless only a few direction sectors should be tested, AND non complex terrain (normally only useable off shore). Another park power curve version for complex terrain is available in windPRO.

The park power curve can be used for:

- Forecast systems, based on more rough (approximated) wind data, the park power curve would be an efficient way to make the connection from wind speed (and direction) to power.
- Construction of duration curves, telling how often a given power output will appear, the park power curve can be used together with the average wind distribution for the Wind farm area in hub height. The average wind distribution can eventually be obtained based on the Weibull parameters for each WTG position. These are found at print menu: >Result to file< in the >Park result< which can be saved to file or copied to clipboard and pasted in Excel.
- Calculation of wind energy index based on the PARK production (see below).
- Estimation of the expected PARK production for an existing wind farm based on wind measurements at minimum 2 measurement masts at two sides of wind farm. The masts must be used for obtaining the free wind speed. The free wind speed is used in the simulation of expected energy production with the PARK power curve. This procedure will only work suitable in non complex terrains. For complex terrain another park power curve calculation is available in windPRO (PPV-model).

Note:

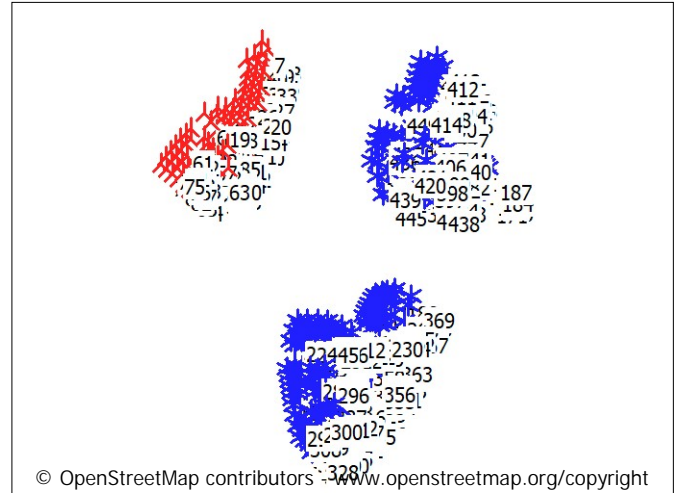
From the >Result to file< the >Wind Speeds Inside Wind farm< is also available. These can (e.g. via Excel) be used for extracting the wake induced reductions in measured wind speed.

PARK - WTG distances

Calculation: HKW MER 16MW incl HKN&HKZ

WTG distances

	Z	Nearest WTG	Z	Horizontal distance	Distance in rotor diameters (max)	Distance in rotor diameters (min)
	[m]		[m]	[m]		
1	0.0	8	0.0	1,381	5.0	5.0
2	0.0	94	0.0	1,428	5.1	5.1
3	0.0	13	0.0	1,591	5.7	5.7
4	0.0	12	0.0	1,230	4.4	4.4
5	0.0	19	0.0	1,537	5.5	5.5
6	0.0	5	0.0	1,793	6.4	6.4
7	0.0	38	0.0	1,853	6.6	6.6
8	0.0	11	0.0	1,322	4.7	4.7
9	0.0	8	0.0	1,325	4.7	4.7
10	0.0	11	0.0	1,325	4.7	4.7
11	0.0	8	0.0	1,322	4.7	4.7
12	0.0	4	0.0	1,230	4.4	4.4
13	0.0	18	0.0	1,322	4.7	4.7
14	0.0	42	0.0	1,316	4.7	4.7
15	0.0	43	0.0	1,316	4.7	4.7
16	0.0	44	0.0	1,316	4.7	4.7
17	0.0	45	0.0	1,316	4.7	4.7
18	0.0	46	0.0	1,316	4.7	4.7
19	0.0	47	0.0	1,316	4.7	4.7
20	0.0	24	0.0	1,323	4.7	4.7
21	0.0	25	0.0	1,322	4.7	4.7
22	0.0	26	0.0	1,322	4.7	4.7
23	0.0	22	0.0	1,325	4.7	4.7
24	0.0	20	0.0	1,323	4.7	4.7
25	0.0	28	0.0	1,322	4.7	4.7
26	0.0	29	0.0	1,322	4.7	4.7
27	0.0	24	0.0	1,323	4.7	4.7
28	0.0	31	0.0	1,322	4.7	4.7
29	0.0	32	0.0	1,322	4.7	4.7
30	0.0	27	0.0	1,323	4.7	4.7
31	0.0	34	0.0	1,322	4.7	4.7
32	0.0	35	0.0	1,322	4.7	4.7
33	0.0	36	0.0	1,323	4.7	4.7
34	0.0	37	0.0	1,322	4.7	4.7
35	0.0	32	0.0	1,322	4.7	4.7
36	0.0	33	0.0	1,323	4.7	4.7
37	0.0	34	0.0	1,322	4.7	4.7
38	0.0	39	0.0	1,325	4.7	4.7
39	0.0	38	0.0	1,325	4.7	4.7
40	0.0	39	0.0	1,325	4.7	4.7
41	0.0	40	0.0	1,325	4.7	4.7
42	0.0	14	0.0	1,316	4.7	4.7
43	0.0	15	0.0	1,316	4.7	4.7
44	0.0	16	0.0	1,316	4.7	4.7
45	0.0	17	0.0	1,316	4.7	4.7
46	0.0	18	0.0	1,316	4.7	4.7
47	0.0	19	0.0	1,316	4.7	4.7
48	0.0	55	0.0	1,314	4.7	4.7
49	0.0	58	0.0	1,334	4.8	4.8
50	0.0	90	0.0	2,013	7.2	7.2
51	0.0	85	0.0	1,302	4.7	4.7
52	0.0	51	0.0	1,314	4.7	4.7
53	0.0	86	0.0	1,306	4.7	4.7
54	0.0	53	0.0	1,314	4.7	4.7
55	0.0	61	0.0	1,299	4.7	4.7
56	0.0	62	0.0	1,166	4.2	4.2
57	0.0	93	0.0	1,313	4.7	4.7
58	0.0	94	0.0	1,313	4.7	4.7
59	0.0	87	0.0	1,309	4.7	4.7
60	0.0	64	0.0	1,276	4.6	4.6
61	0.0	55	0.0	1,299	4.7	4.7
62	0.0	56	0.0	1,166	4.2	4.2
63	0.0	88	0.0	1,141	4.1	4.1



Scale 1:1,250,000
★ New WTG ★ Existing WTG

To be continued on next page...

PARK - WTG distances

Calculation: HKW MER 16MW incl HKN&HKZ

...continued from previous page

	Z	Nearest	Z	Horizontal	Distance in	Distance in
	[m]	WTG	[m]	distance	rotor	rotor
				[m]	diameters	diameters
					(max)	(min)
64	0.0	60	0.0	1,276	4.6	4.6
65	0.0	64	0.0	1,314	4.7	4.7
66	0.0	70	0.0	1,302	4.7	4.7
67	0.0	71	0.0	1,303	4.7	4.7
68	0.0	72	0.0	1,303	4.7	4.7
69	0.0	73	0.0	1,303	4.7	4.7
70	0.0	66	0.0	1,302	4.7	4.7
71	0.0	67	0.0	1,303	4.7	4.7
72	0.0	68	0.0	1,303	4.7	4.7
73	0.0	69	0.0	1,303	4.7	4.7
74	0.0	70	0.0	1,304	4.7	4.7
75	0.0	71	0.0	1,304	4.7	4.7
76	0.0	72	0.0	1,305	4.7	4.7
77	0.0	73	0.0	1,305	4.7	4.7
78	0.0	77	0.0	1,314	4.7	4.7
79	0.0	80	0.0	1,314	4.7	4.7
80	0.0	81	0.0	1,314	4.7	4.7
81	0.0	80	0.0	1,314	4.7	4.7
82	0.0	81	0.0	1,314	4.7	4.7
83	0.0	82	0.0	1,314	4.7	4.7
84	0.0	83	0.0	1,314	4.7	4.7
85	0.0	51	0.0	1,302	4.7	4.7
86	0.0	53	0.0	1,306	4.7	4.7
87	0.0	59	0.0	1,309	4.7	4.7
88	0.0	63	0.0	1,141	4.1	4.1
89	0.0	90	0.0	1,314	4.7	4.7
90	0.0	91	0.0	1,314	4.7	4.7
91	0.0	90	0.0	1,314	4.7	4.7
92	0.0	93	0.0	1,314	4.7	4.7
93	0.0	57	0.0	1,313	4.7	4.7
94	0.0	58	0.0	1,313	4.7	4.7
95	0.0	96	0.0	550	6.9	6.9
96	0.0	95	0.0	550	6.9	6.9
97	0.0	98	0.0	550	6.9	6.9
98	0.0	97	0.0	550	6.9	6.9
99	0.0	95	0.0	550	6.9	6.9
100	0.0	102	0.0	550	6.9	6.9
101	0.0	103	0.0	549	6.9	6.9
102	0.0	110	0.0	550	6.9	6.9
103	0.0	101	0.0	549	6.9	6.9
104	0.0	107	0.0	550	6.9	6.9
105	0.0	108	0.0	550	6.9	6.9
106	0.0	105	0.0	550	6.9	6.9
107	0.0	104	0.0	550	6.9	6.9
108	0.0	105	0.0	550	6.9	6.9
109	0.0	111	0.0	550	6.9	6.9
110	0.0	108	0.0	550	6.9	6.9
111	0.0	109	0.0	550	6.9	6.9
112	0.0	120	0.0	550	6.9	6.9
113	0.0	111	0.0	550	6.9	6.9
114	0.0	115	0.0	550	6.9	6.9
115	0.0	114	0.0	550	6.9	6.9
116	0.0	114	0.0	550	6.9	6.9
117	0.0	120	0.0	550	6.9	6.9
118	0.0	113	0.0	551	6.9	6.9
119	0.0	121	0.0	550	6.9	6.9
120	0.0	117	0.0	550	6.9	6.9
121	0.0	119	0.0	550	6.9	6.9
122	0.0	129	0.0	549	6.9	6.9
123	0.0	125	0.0	550	6.9	6.9
124	0.0	121	0.0	550	6.9	6.9
125	0.0	123	0.0	550	6.9	6.9
126	0.0	123	0.0	550	6.9	6.9

To be continued on next page...

PARK - WTG distances

Calculation: HKW MER 16MW incl HKN&HKZ

...continued from previous page

	Z	Nearest WTG	Z	Horizontal distance	Distance in rotor diameters (max)	Distance in rotor diameters (min)
	[m]		[m]	[m]		
127	0.0	129	0.0	550	6.9	6.9
128	0.0	130	0.0	549	6.9	6.9
129	0.0	122	0.0	549	6.9	6.9
130	0.0	128	0.0	549	6.9	6.9
131	0.0	137	0.0	550	6.9	6.9
132	0.0	134	0.0	550	6.9	6.9
133	0.0	135	0.0	550	6.9	6.9
134	0.0	136	0.0	550	6.9	6.9
135	0.0	133	0.0	550	6.9	6.9
136	0.0	134	0.0	550	6.9	6.9
137	0.0	131	0.0	550	6.9	6.9
138	0.0	140	0.0	550	6.9	6.9
139	0.0	136	0.0	550	6.9	6.9
140	0.0	143	0.0	550	6.9	6.9
141	0.0	145	0.0	550	6.9	6.9
142	0.0	150	0.0	550	6.9	6.9
143	0.0	140	0.0	550	6.9	6.9
144	0.0	146	0.0	549	6.9	6.9
145	0.0	141	0.0	550	6.9	6.9
146	0.0	144	0.0	549	6.9	6.9
147	0.0	139	0.0	550	6.9	6.9
148	0.0	149	0.0	550	6.9	6.9
149	0.0	148	0.0	550	6.9	6.9
150	0.0	151	0.0	549	6.9	6.9
151	0.0	150	0.0	549	6.9	6.9
152	0.0	153	0.0	549	6.9	6.9
153	0.0	152	0.0	549	6.9	6.9
154	0.0	151	0.0	552	6.9	6.9
155	0.0	156	0.0	646	7.2	7.2
156	0.0	157	0.0	644	7.2	7.2
157	0.0	158	0.0	644	7.2	7.2
158	0.0	157	0.0	644	7.2	7.2
159	0.0	158	0.0	644	7.2	7.2
160	0.0	159	0.0	644	7.2	7.2
161	0.0	162	0.0	644	7.2	7.2
162	0.0	163	0.0	643	7.1	7.1
163	0.0	162	0.0	643	7.1	7.1
164	0.0	166	0.0	644	7.2	7.2
165	0.0	168	0.0	632	7.0	7.0
166	0.0	164	0.0	644	7.2	7.2
167	0.0	169	0.0	644	7.2	7.2
168	0.0	165	0.0	632	7.0	7.0
169	0.0	170	0.0	642	7.1	7.1
170	0.0	169	0.0	642	7.1	7.1
171	0.0	168	0.0	646	7.2	7.2
172	0.0	175	0.0	643	7.1	7.1
173	0.0	174	0.0	646	7.2	7.2
174	0.0	176	0.0	644	7.2	7.2
175	0.0	172	0.0	643	7.1	7.1
176	0.0	174	0.0	644	7.2	7.2
177	0.0	176	0.0	644	7.2	7.2
178	0.0	180	0.0	643	7.1	7.1
179	0.0	177	0.0	724	8.0	8.0
180	0.0	178	0.0	643	7.1	7.1
181	0.0	184	0.0	647	7.2	7.2
182	0.0	183	0.0	644	7.2	7.2
183	0.0	185	0.0	642	7.1	7.1
184	0.0	181	0.0	647	7.2	7.2
185	0.0	183	0.0	642	7.1	7.1
186	0.0	185	0.0	644	7.2	7.2
187	0.0	186	0.0	736	8.2	8.2
188	0.0	191	0.0	863	7.7	7.7
189	0.0	192	0.0	668	6.0	6.0

To be continued on next page...

PARK - WTG distances

Calculation: HKW MER 16MW incl HKN&HKZ

...continued from previous page

	Z	Nearest	Z	Horizontal	Distance in	Distance in
	[m]	WTG	[m]	distance	rotor	rotor
				[m]	diameters	diameters
					(max)	(min)
190	0.0	192	0.0	553	4.9	4.9
191	0.0	196	0.0	688	6.1	6.1
192	0.0	190	0.0	553	4.9	4.9
193	0.0	195	0.0	534	4.8	4.8
194	0.0	192	0.0	586	5.2	5.2
195	0.0	197	0.0	533	4.8	4.8
196	0.0	194	0.0	633	5.7	5.7
197	0.0	195	0.0	533	4.8	4.8
198	0.0	197	0.0	534	4.8	4.8
199	0.0	201	0.0	544	4.9	4.9
200	0.0	202	0.0	535	4.8	4.8
201	0.0	199	0.0	544	4.9	4.9
202	0.0	200	0.0	535	4.8	4.8
203	0.0	204	0.0	553	4.9	4.9
204	0.0	206	0.0	543	4.8	4.8
205	0.0	207	0.0	575	5.1	5.1
206	0.0	204	0.0	543	4.8	4.8
207	0.0	209	0.0	563	5.0	5.0
208	0.0	206	0.0	582	5.2	5.2
209	0.0	207	0.0	563	5.0	5.0
210	0.0	209	0.0	573	5.1	5.1
211	0.0	213	0.0	558	5.0	5.0
212	0.0	214	0.0	557	5.0	5.0
213	0.0	211	0.0	558	5.0	5.0
214	0.0	212	0.0	557	5.0	5.0
215	0.0	213	0.0	570	5.1	5.1
216	0.0	215	0.0	591	5.3	5.3
217	0.0	220	0.0	580	5.2	5.2
218	0.0	219	0.0	575	5.1	5.1
219	0.0	218	0.0	575	5.1	5.1
220	0.0	217	0.0	580	5.2	5.2
221	0.0	219	0.0	592	5.3	5.3
222	0.0	223	0.0	588	5.2	5.2
223	0.0	222	0.0	588	5.2	5.2
224	0.0	225	0.0	586	5.2	5.2
225	0.0	224	0.0	586	5.2	5.2
226	0.0	223	0.0	613	5.5	5.5
227	0.0	225	0.0	622	5.6	5.6
228	0.0	229	0.0	596	5.3	5.3
229	0.0	228	0.0	596	5.3	5.3
230	0.0	229	0.0	696	6.2	6.2
231	0.0	242	0.0	1,122	6.8	6.8
232	0.0	231	0.0	1,313	8.0	8.0
233	0.0	232	0.0	1,438	8.8	8.8
234	0.0	238	0.0	1,059	6.5	6.5
235	0.0	239	0.0	1,059	6.5	6.5
236	0.0	240	0.0	1,059	6.5	6.5
237	0.0	241	0.0	1,059	6.5	6.5
238	0.0	234	0.0	1,059	6.5	6.5
239	0.0	235	0.0	1,059	6.5	6.5
240	0.0	236	0.0	1,059	6.5	6.5
241	0.0	237	0.0	1,059	6.5	6.5
242	0.0	231	0.0	1,122	6.8	6.8
243	0.0	248	0.0	1,060	6.5	6.5
244	0.0	249	0.0	1,060	6.5	6.5
245	0.0	250	0.0	1,059	6.5	6.5
246	0.0	251	0.0	1,059	6.5	6.5
247	0.0	252	0.0	1,059	6.5	6.5
248	0.0	254	0.0	1,059	6.5	6.5
249	0.0	244	0.0	1,060	6.5	6.5
250	0.0	245	0.0	1,059	6.5	6.5
251	0.0	246	0.0	1,059	6.5	6.5
252	0.0	247	0.0	1,059	6.5	6.5

To be continued on next page...

PARK - WTG distances

Calculation: HKW MER 16MW incl HKN&HKZ

...continued from previous page

	Z	Nearest	Z	Horizontal	Distance in	Distance in
	[m]	WTG	[m]	distance	rotor	rotor
				[m]	diameters	diameters
					(max)	(min)
253	0.0	258	0.0	1,059	6.5	6.5
254	0.0	248	0.0	1,059	6.5	6.5
255	0.0	249	0.0	1,060	6.5	6.5
256	0.0	250	0.0	1,059	6.5	6.5
257	0.0	251	0.0	1,059	6.5	6.5
258	0.0	253	0.0	1,059	6.5	6.5
259	0.0	254	0.0	1,060	6.5	6.5
260	0.0	269	0.0	1,179	7.2	7.2
261	0.0	275	0.0	1,028	6.3	6.3
262	0.0	280	0.0	959	5.8	5.8
263	0.0	291	0.0	925	5.6	5.6
264	0.0	265	0.0	1,015	6.2	6.2
265	0.0	266	0.0	1,015	6.2	6.2
266	0.0	267	0.0	1,015	6.2	6.2
267	0.0	268	0.0	1,015	6.2	6.2
268	0.0	269	0.0	1,015	6.2	6.2
269	0.0	268	0.0	1,015	6.2	6.2
270	0.0	271	0.0	1,016	6.2	6.2
271	0.0	272	0.0	1,015	6.2	6.2
272	0.0	273	0.0	1,015	6.2	6.2
273	0.0	272	0.0	1,015	6.2	6.2
274	0.0	275	0.0	1,015	6.2	6.2
275	0.0	274	0.0	1,015	6.2	6.2
276	0.0	277	0.0	1,015	6.2	6.2
277	0.0	276	0.0	1,015	6.2	6.2
278	0.0	279	0.0	1,015	6.2	6.2
279	0.0	280	0.0	1,015	6.2	6.2
280	0.0	262	0.0	959	5.8	5.8
281	0.0	282	0.0	1,015	6.2	6.2
282	0.0	283	0.0	1,015	6.2	6.2
283	0.0	284	0.0	1,015	6.2	6.2
284	0.0	283	0.0	1,015	6.2	6.2
285	0.0	286	0.0	1,015	6.2	6.2
286	0.0	285	0.0	1,015	6.2	6.2
287	0.0	288	0.0	1,015	6.2	6.2
288	0.0	289	0.0	1,015	6.2	6.2
289	0.0	290	0.0	1,015	6.2	6.2
290	0.0	291	0.0	1,015	6.2	6.2
291	0.0	263	0.0	925	5.6	5.6
292	0.0	293	0.0	1,015	6.2	6.2
293	0.0	294	0.0	1,014	6.2	6.2
294	0.0	293	0.0	1,014	6.2	6.2
295	0.0	296	0.0	1,015	6.2	6.2
296	0.0	297	0.0	1,015	6.2	6.2
297	0.0	296	0.0	1,015	6.2	6.2
298	0.0	303	0.0	1,176	7.2	7.2
299	0.0	304	0.0	1,176	7.2	7.2
300	0.0	305	0.0	1,176	7.2	7.2
301	0.0	306	0.0	1,175	7.2	7.2
302	0.0	307	0.0	1,176	7.2	7.2
303	0.0	298	0.0	1,176	7.2	7.2
304	0.0	310	0.0	1,175	7.2	7.2
305	0.0	311	0.0	1,175	7.2	7.2
306	0.0	301	0.0	1,175	7.2	7.2
307	0.0	332	0.0	1,163	7.1	7.1
308	0.0	313	0.0	1,177	7.2	7.2
309	0.0	314	0.0	1,176	7.2	7.2
310	0.0	304	0.0	1,175	7.2	7.2
311	0.0	331	0.0	1,055	6.4	6.4
312	0.0	306	0.0	1,175	7.2	7.2
313	0.0	318	0.0	1,176	7.2	7.2
314	0.0	309	0.0	1,176	7.2	7.2
315	0.0	321	0.0	1,174	7.2	7.2

To be continued on next page...

PARK - WTG distances

Calculation: HKW MER 16MW incl HKN&HKZ

...continued from previous page

	Z	Nearest	Z	Horizontal	Distance in	Distance in
	[m]	WTG	[m]	distance	rotor	rotor
				[m]	diameters	diameters
					(max)	(min)
316	0.0	332	0.0	1,090	6.6	6.6
317	0.0	322	0.0	1,176	7.2	7.2
318	0.0	313	0.0	1,176	7.2	7.2
319	0.0	314	0.0	1,176	7.2	7.2
320	0.0	325	0.0	1,176	7.2	7.2
321	0.0	315	0.0	1,174	7.2	7.2
322	0.0	326	0.0	1,032	6.3	6.3
323	0.0	326	0.0	1,060	6.5	6.5
324	0.0	330	0.0	1,064	6.5	6.5
325	0.0	320	0.0	1,176	7.2	7.2
326	0.0	328	0.0	1,031	6.3	6.3
327	0.0	328	0.0	842	5.1	5.1
328	0.0	327	0.0	842	5.1	5.1
329	0.0	328	0.0	982	6.0	6.0
330	0.0	324	0.0	1,064	6.5	6.5
331	0.0	311	0.0	1,055	6.4	6.4
332	0.0	333	0.0	975	5.9	5.9
333	0.0	332	0.0	975	5.9	5.9
334	0.0	332	0.0	988	6.0	6.0
335	0.0	334	0.0	1,046	6.4	6.4
336	0.0	337	0.0	1,033	6.3	6.3
337	0.0	338	0.0	1,033	6.3	6.3
338	0.0	337	0.0	1,033	6.3	6.3
339	0.0	340	0.0	1,033	6.3	6.3
340	0.0	339	0.0	1,033	6.3	6.3
341	0.0	340	0.0	1,033	6.3	6.3
342	0.0	343	0.0	1,033	6.3	6.3
343	0.0	344	0.0	1,033	6.3	6.3
344	0.0	345	0.0	1,033	6.3	6.3
345	0.0	346	0.0	1,033	6.3	6.3
346	0.0	347	0.0	1,033	6.3	6.3
347	0.0	346	0.0	1,033	6.3	6.3
348	0.0	349	0.0	1,033	6.3	6.3
349	0.0	350	0.0	1,033	6.3	6.3
350	0.0	349	0.0	1,033	6.3	6.3
351	0.0	352	0.0	1,033	6.3	6.3
352	0.0	353	0.0	1,032	6.3	6.3
353	0.0	352	0.0	1,032	6.3	6.3
354	0.0	355	0.0	1,033	6.3	6.3
355	0.0	356	0.0	1,032	6.3	6.3
356	0.0	355	0.0	1,032	6.3	6.3
357	0.0	356	0.0	1,033	6.3	6.3
358	0.0	359	0.0	900	5.5	5.5
359	0.0	358	0.0	900	5.5	5.5
360	0.0	361	0.0	900	5.5	5.5
361	0.0	360	0.0	900	5.5	5.5
362	0.0	363	0.0	901	5.5	5.5
363	0.0	362	0.0	901	5.5	5.5
364	0.0	230	0.0	1,357	12.1	8.3
365	0.0	214	0.0	1,377	12.3	8.4
366	0.0	202	0.0	1,311	11.7	8.0
367	0.0	365	0.0	2,489	15.2	15.2
368	0.0	369	0.0	1,450	8.8	8.8
369	0.0	368	0.0	1,450	8.8	8.8
370	0.0	342	0.0	1,108	6.8	6.8
371	0.0	372	0.0	978	6.0	6.0
372	0.0	371	0.0	978	6.0	6.0
373	0.0	372	0.0	1,108	6.8	6.8
374	0.0	375	0.0	1,318	8.0	8.0
375	0.0	374	0.0	1,318	8.0	8.0
376	0.0	420	0.0	1,318	8.0	8.0
377	0.0	430	0.0	1,317	8.0	8.0
378	0.0	427	0.0	1,315	8.0	8.0

To be continued on next page...

PARK - WTG distances

Calculation: HKW MER 16MW incl HKN&HKZ

...continued from previous page

	Z	Nearest WTG	Z	Horizontal distance	Distance in rotor diameters (max)	Distance in rotor diameters (min)
	[m]		[m]	[m]		
379	0.0	381	0.0	1,317	8.0	8.0
380	0.0	406	0.0	1,317	8.0	8.0
381	0.0	399	0.0	1,316	8.0	8.0
382	0.0	155	0.0	2,090	23.2	12.7
383	0.0	384	0.0	1,478	9.0	9.0
384	0.0	389	0.0	1,318	8.0	8.0
385	0.0	390	0.0	1,318	8.0	8.0
386	0.0	393	0.0	1,316	8.0	8.0
387	0.0	394	0.0	1,315	8.0	8.0
388	0.0	395	0.0	1,315	8.0	8.0
389	0.0	384	0.0	1,318	8.0	8.0
390	0.0	397	0.0	1,318	8.0	8.0
391	0.0	390	0.0	1,320	8.0	8.0
392	0.0	400	0.0	1,315	8.0	8.0
393	0.0	401	0.0	1,315	8.0	8.0
394	0.0	402	0.0	1,314	8.0	8.0
395	0.0	403	0.0	1,314	8.0	8.0
396	0.0	404	0.0	1,314	8.0	8.0
397	0.0	398	0.0	1,223	7.5	7.5
398	0.0	397	0.0	1,223	7.5	7.5
399	0.0	381	0.0	1,316	8.0	8.0
400	0.0	392	0.0	1,315	8.0	8.0
401	0.0	408	0.0	1,313	8.0	8.0
402	0.0	409	0.0	1,313	8.0	8.0
403	0.0	410	0.0	1,313	8.0	8.0
404	0.0	411	0.0	1,312	8.0	8.0
405	0.0	412	0.0	1,312	8.0	8.0
406	0.0	407	0.0	1,195	7.3	7.3
407	0.0	406	0.0	1,195	7.3	7.3
408	0.0	401	0.0	1,313	8.0	8.0
409	0.0	402	0.0	1,313	8.0	8.0
410	0.0	403	0.0	1,313	8.0	8.0
411	0.0	404	0.0	1,312	8.0	8.0
412	0.0	405	0.0	1,312	8.0	8.0
413	0.0	412	0.0	1,320	8.0	8.0
414	0.0	415	0.0	1,280	7.8	7.8
415	0.0	422	0.0	1,202	7.3	7.3
416	0.0	423	0.0	1,313	8.0	8.0
417	0.0	424	0.0	1,313	8.0	8.0
418	0.0	425	0.0	1,312	8.0	8.0
419	0.0	426	0.0	1,312	8.0	8.0
420	0.0	376	0.0	1,318	8.0	8.0
421	0.0	379	0.0	1,318	8.0	8.0
422	0.0	415	0.0	1,202	7.3	7.3
423	0.0	422	0.0	1,266	7.7	7.7
424	0.0	417	0.0	1,313	8.0	8.0
425	0.0	418	0.0	1,312	8.0	8.0
426	0.0	419	0.0	1,312	8.0	8.0
427	0.0	449	0.0	1,315	8.0	8.0
428	0.0	431	0.0	1,288	7.9	7.9
429	0.0	433	0.0	1,318	8.0	8.0
430	0.0	434	0.0	1,317	8.0	8.0
431	0.0	428	0.0	1,288	7.9	7.9
432	0.0	435	0.0	1,317	8.0	8.0
433	0.0	436	0.0	1,317	8.0	8.0
434	0.0	437	0.0	1,317	8.0	8.0
435	0.0	432	0.0	1,317	8.0	8.0
436	0.0	433	0.0	1,317	8.0	8.0
437	0.0	434	0.0	1,317	8.0	8.0
438	0.0	448	0.0	2,021	12.3	12.3
439	0.0	444	0.0	2,088	12.7	12.7
440	0.0	441	0.0	1,925	11.7	11.7
441	0.0	440	0.0	1,925	11.7	11.7

To be continued on next page...

PARK - WTG distances

Calculation: HKW MER 16MW incl HKN&HKZ

...continued from previous page

	Z	Nearest	Z	Horizontal	Distance in	Distance in
		WTG		distance	rotor	rotor
	[m]		[m]	[m]	diameters	diameters
					(max)	(min)
442	0.0	407	0.0	1,907	11.6	11.6
443	0.0	446	0.0	1,543	9.4	9.4
444	0.0	137	0.0	1,182	14.8	7.2
445	0.0	98	0.0	1,173	14.7	7.2
446	0.0	407	0.0	1,514	9.2	9.2
447	0.0	392	0.0	1,801	11.0	11.0
448	0.0	438	0.0	2,021	12.3	12.3
449	0.0	431	0.0	1,298	7.9	7.9
Min	0.0		0.0	533	4.1	4.1
Max	0.0		0.0	2,489	23.2	15.2

Project:
RVO Offshore wind farms

Licensed user:
Pondera Consult B.V.
Welbergweg 49
NL-7556 PE Hengelo
0031742489940



Calculated:
16/05/2019 11:32/3.2.712

PARK - Wind statistics info

Calculation: HKW MER 16MW incl HKN&HKZ

Main data for wind statistic

File	\\pd-fs01.pondera.local\projecten\Extern\2017\717029 Expert support RVO offshore WF Zones\TO\WPK\Jmuiden Mast (Regression MCP using EmdConwx_N52.850_E003.440 (1)) - E Synth 100.00 m-Corr0,994.wws
Name	Jmuiden Mast (Regression MCP using EmdConwx_N52.850_E003.440 (1)) - E Synth 100.00 m-Corr0,994
Country	Netherlands
Source	User
Mast coordinates	UTM (north)-ETRS89 Zone: 31 East: 529,340 North: 5,855,469
Created	23/05/2018
Edited	23/05/2018
Sectors	12
WASP version	WASP 11 Version 11.06.0028
Coordinate system	UTM (north)-WGS84 Zone: 31
Displacement height	None

Additional info for wind statistic

Source data	Jmuiden Mast (Regression MCP using EmdConwx_N52.850_E003.440 (1))
Data from	27/02/1993
Data to	28/02/2018
Measurement length	300.0 Months
Recovery rate	100.0 %
Effective measurement length	300.0 Months

Note

To get the most correct calculation results, wind statistics shall be calculated with the SAME model and model parameters, as currently chosen in calculation. For WASP versions before 10.0, the model is unchanged, but thereafter more model changes affecting the wind statistic is seen. Likewise WASP CFD should always use WASP CFD calculated wind statistics.

Project:
RVO Offshore wind farms

Licensed user:
Pondera Consult B.V.
Welbergweg 49
NL-7556 PE Hengelo
0031742489940



Calculated:
16/05/2019 11:32/3.2.712

PARK - Wind statistics info

Calculation: HKW MER 16MW incl HKN&HKZ

Main data for wind statistic

File	\\pd-fs01.pondera.local\projecten\Extern\2017\717029 Expert support RVO offshore WF Zones\TO\WPK\Jmuiden Mast (Regression MCP using EmdConwx_N52.850_E003.440 (1)) - E Synth 100.00 m-Corr0,991.wws
Name	Jmuiden Mast (Regression MCP using EmdConwx_N52.850_E003.440 (1)) - E Synth 100.00 m-Corr0,991
Country	Netherlands
Source	User
Mast coordinates	UTM (north)-ETRS89 Zone: 31 East: 529,340 North: 5,855,469
Created	23/05/2018
Edited	23/05/2018
Sectors	12
WASP version	WASP 11 Version 11.06.0028
Coordinate system	UTM (north)-WGS84 Zone: 31
Displacement height	None

Additional info for wind statistic

Source data	Jmuiden Mast (Regression MCP using EmdConwx_N52.850_E003.440 (1))
Data from	27/02/1993
Data to	28/02/2018
Measurement length	300.0 Months
Recovery rate	100.0 %
Effective measurement length	300.0 Months

Note

To get the most correct calculation results, wind statistics shall be calculated with the SAME model and model parameters, as currently chosen in calculation. For WASP versions before 10.0, the model is unchanged, but thereafter more model changes affecting the wind statistic is seen. Likewise WASP CFD should always use WASP CFD calculated wind statistics.

Project:

RVO Offshore wind farms

Licensed user:

Pondera Consult B.V.
Welbergweg 49
NL-7556 PE Hengelo
0031742489940



Calculated:

16/05/2019 11:32/3.2.712

PARK - Wind statistics info

Calculation: HKW MER 16MW incl HKN&HKZ

Main data for wind statistic

File	\\pd-fs01.pondera.local\projecten\Extern\2017\717029 Expert support RVO offshore WF Zones\TO\WPK\Jmuiden Mast (Regression MCP using EmdConwx_N52.850_E003.440 (1)) - E Synth 100.00 m-Corr0,994.wws
Name	Jmuiden Mast (Regression MCP using EmdConwx_N52.850_E003.440 (1)) - E Synth 100.00 m-Corr0,994
Country	Netherlands
Source	User
Mast coordinates	UTM (north)-ETRS89 Zone: 31 East: 529,340 North: 5,855,469
Created	23/05/2018
Edited	23/05/2018
Sectors	12
WASP version	WASP 11 Version 11.06.0028
Coordinate system	UTM (north)-WGS84 Zone: 31
Displacement height	None

Additional info for wind statistic

Source data	Jmuiden Mast (Regression MCP using EmdConwx_N52.850_E003.440 (1))
Data from	27/02/1993
Data to	28/02/2018
Measurement length	300.0 Months
Recovery rate	100.0 %
Effective measurement length	300.0 Months

Note

To get the most correct calculation results, wind statistics shall be calculated with the SAME model and model parameters, as currently chosen in calculation. For WASP versions before 10.0, the model is unchanged, but thereafter more model changes affecting the wind statistic is seen. Likewise WASP CFD should always use WASP CFD calculated wind statistics.

Project:
RVO Offshore wind farms

Licensed user:
Pondera Consult B.V.
Welbergweg 49
NL-7556 PE Hengelo
0031742489940



Calculated:
16/05/2019 11:32/3.2.712

PARK - Wind statistics info

Calculation: HKW MER 16MW incl HKN&HKZ

Main data for wind statistic

File	\\pd-fs01.pondera.local\projecten\Extern\2017\717029 Expert support RVO offshore WF Zones\TO\WPI\Jmuiden Mast (Regression MCP using EmdConwx_N52.850_E003.440 (1)) - E Synth 100.00 m-Corr0,955.wws
Name	Jmuiden Mast (Regression MCP using EmdConwx_N52.850_E003.440 (1)) - E Synth 100.00 m-Corr0,955
Country	Netherlands
Source	User
Mast coordinates	UTM (north)-ETRS89 Zone: 31 East: 529,340 North: 5,855,469
Created	23/05/2018
Edited	23/05/2018
Sectors	12
WASP version	WASP 11 Version 11.06.0028
Coordinate system	UTM (north)-WGS84 Zone: 31
Displacement height	None

Additional info for wind statistic

Source data	Jmuiden Mast (Regression MCP using EmdConwx_N52.850_E003.440 (1))
Data from	27/02/1993
Data to	28/02/2018
Measurement length	300.0 Months
Recovery rate	100.0 %
Effective measurement length	300.0 Months

Note

To get the most correct calculation results, wind statistics shall be calculated with the SAME model and model parameters, as currently chosen in calculation. For WASP versions before 10.0, the model is unchanged, but thereafter more model changes affecting the wind statistic is seen. Likewise WASP CFD should always use WASP CFD calculated wind statistics.

Project:
RVO Offshore wind farms

Licensed user:
Pondera Consult B.V.
Welbergweg 49
NL-7556 PE Hengelo
0031742489940



Calculated:
16/05/2019 11:32/3.2.712

PARK - Wind statistics info

Calculation: HKW MER 16MW incl HKN&HKZ

Main data for wind statistic

File	\\pd-fs01.pondera.local\projecten\Extern\2017\717029 Expert support RVO offshore WF Zones\TO\WPK\Jmuiden Mast (Regression MCP using EmdConwx_N52.850_E003.440 (1)) - E Synth 100.00 m-Corr0,974.wws
Name	Jmuiden Mast (Regression MCP using EmdConwx_N52.850_E003.440 (1)) - E Synth 100.00 m-Corr0,974
Country	Netherlands
Source	User
Mast coordinates	UTM (north)-ETRS89 Zone: 31 East: 529,340 North: 5,855,469
Created	23/05/2018
Edited	23/05/2018
Sectors	12
WASP version	WASP 11 Version 11.06.0028
Coordinate system	UTM (north)-WGS84 Zone: 31
Displacement height	None

Additional info for wind statistic

Source data	Jmuiden Mast (Regression MCP using EmdConwx_N52.850_E003.440 (1))
Data from	27/02/1993
Data to	28/02/2018
Measurement length	300.0 Months
Recovery rate	100.0 %
Effective measurement length	300.0 Months

Note

To get the most correct calculation results, wind statistics shall be calculated with the SAME model and model parameters, as currently chosen in calculation. For WASP versions before 10.0, the model is unchanged, but thereafter more model changes affecting the wind statistic is seen. Likewise WASP CFD should always use WASP CFD calculated wind statistics.

Project:

RVO Offshore wind farms

Licensed user:

Pondera Consult B.V.
Welbergweg 49
NL-7556 PE Hengelo
0031742489940



Calculated:

16/05/2019 11:32/3.2.712

PARK - Wind statistics info

Calculation: HKW MER 16MW incl HKN&HKZ

Main data for wind statistic

File	\\pd-fs01.pondera.local\projecten\Extern\2017\717029 Expert support RVO offshore WF Zones\TO\WPI\Jmuiden Mast (Regression MCP using EmdConwx_N52.850_E003.440 (1)) - E Synth 100.00 m-Corr0,966.wws
Name	Ijmuiden Mast (Regression MCP using EmdConwx_N52.850_E003.440 (1)) - E Synth 100.00 m-Corr0,966
Country	Netherlands
Source	User
Mast coordinates	UTM (north)-ETRS89 Zone: 31 East: 529,340 North: 5,855,469
Created	23/05/2018
Edited	23/05/2018
Sectors	12
WASP version	WASP 11 Version 11.06.0028
Coordinate system	UTM (north)-WGS84 Zone: 31
Displacement height	None

Additional info for wind statistic

Source data	Ijmuiden Mast (Regression MCP using EmdConwx_N52.850_E003.440 (1))
Data from	27/02/1993
Data to	28/02/2018
Measurement length	300.0 Months
Recovery rate	100.0 %
Effective measurement length	300.0 Months

Note

To get the most correct calculation results, wind statistics shall be calculated with the SAME model and model parameters, as currently chosen in calculation. For WASP versions before 10.0, the model is unchanged, but thereafter more model changes affecting the wind statistic is seen. Likewise WASP CFD should always use WASP CFD calculated wind statistics.

Project:
RVO Offshore wind farms

Licensed user:
Pondera Consult B.V.
Welbergweg 49
NL-7556 PE Hengelo
0031742489940



Calculated:
16/05/2019 11:32/3.2.712

PARK - Wind statistics info

Calculation: HKW MER 16MW incl HKN&HKZ

Main data for wind statistic

File	\\pd-fs01.pondera.local\projecten\Extern\2017\717029 Expert support RVO offshore WF Zones\TO\WPK\Jmuiden Mast (Regression MCP using EmdConwx_N52.850_E003.440 (1)) - E Synth 100.00 m-Corr0,995.wws
Name	Jmuiden Mast (Regression MCP using EmdConwx_N52.850_E003.440 (1)) - E Synth 100.00 m-Corr0,995
Country	Netherlands
Source	User
Mast coordinates	UTM (north)-ETRS89 Zone: 31 East: 529,340 North: 5,855,469
Created	23/05/2018
Edited	23/05/2018
Sectors	12
WASP version	WASP 11 Version 11.06.0028
Coordinate system	UTM (north)-WGS84 Zone: 31
Displacement height	None

Additional info for wind statistic

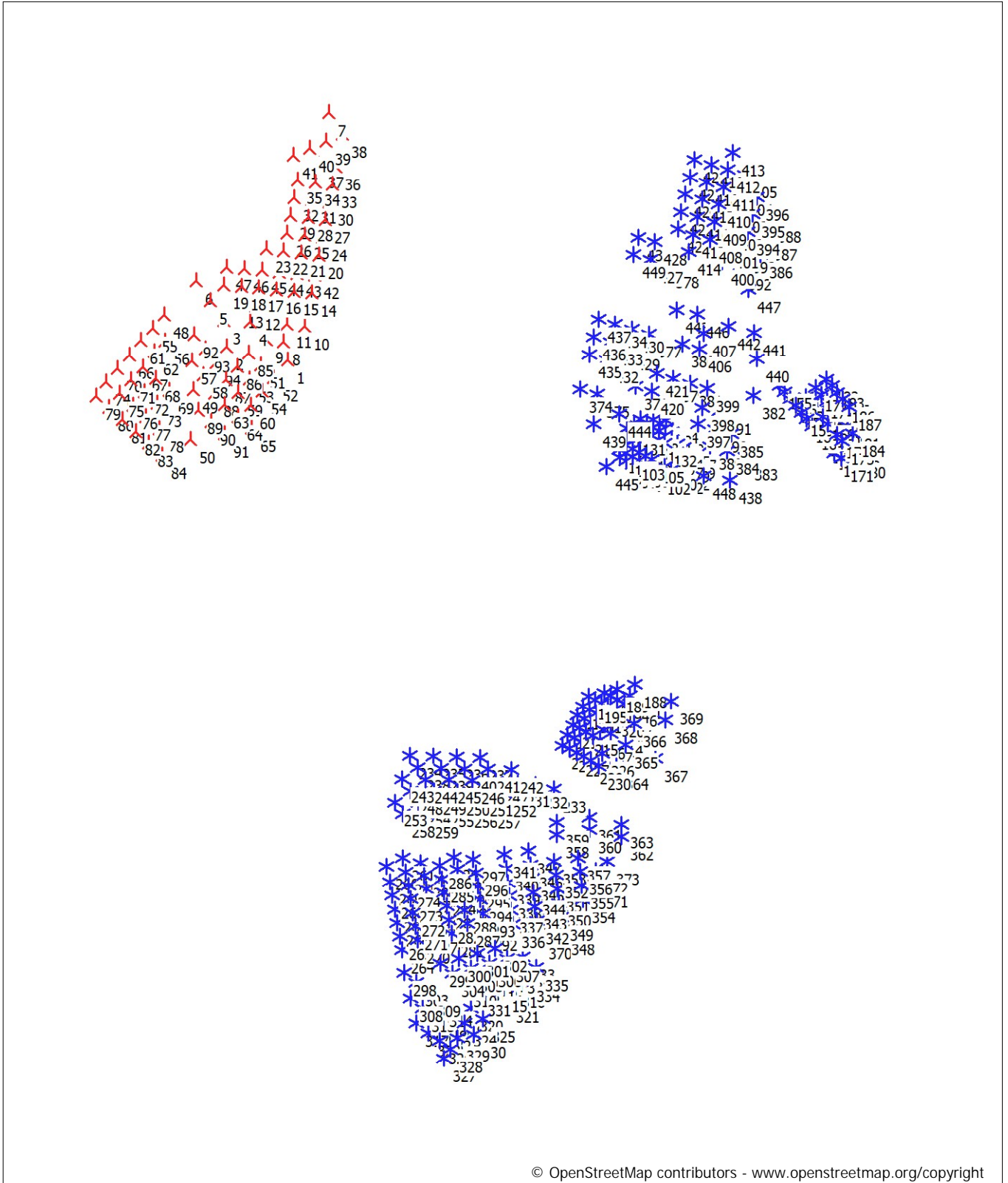
Source data	Jmuiden Mast (Regression MCP using EmdConwx_N52.850_E003.440 (1))
Data from	27/02/1993
Data to	28/02/2018
Measurement length	300.0 Months
Recovery rate	100.0 %
Effective measurement length	300.0 Months

Note

To get the most correct calculation results, wind statistics shall be calculated with the SAME model and model parameters, as currently chosen in calculation. For WASP versions before 10.0, the model is unchanged, but thereafter more model changes affecting the wind statistic is seen. Likewise WASP CFD should always use WASP CFD calculated wind statistics.

PARK - Map

Calculation: HKW MER 16MW incl HKN&HKZ



Map: Open Street Map 001 , Print scale 1:400,000, Map center UTM (north)-ETRS89 Zone: 31 East: 569,595 North: 5,816,598
New WTG Existing WTG