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Calculated:
05/09/2022 12:05/3.5.576

PARK - Main Result

Calculation: 20220902 IJV kavel II

Setup
AEP scaled to a full year based on number of samples
Scaling factor from 15.0 years to 1 year: 0.067

Calculation performed in UTM (north)-WGS84 Zone: 31
At the site centre the difference between grid north and true north is: 0.4°

Wake
Wake Model: N.O. Jensen (RISØ/EMD) Park 2 2018
Wake decay constant
Wake decay constant: 0.060 DTU default offshore

Blockage
Blockage Model: Self similar model (Forsting: 2017)

Gamma (?)	Alpha (a)	Beta (ß)	Lambda (?)	Eta (?)
1.100	0.889	1.414	0.587	1.320

Note: When wake reductions are mentioned in this report, it also includes reduction from blockage.

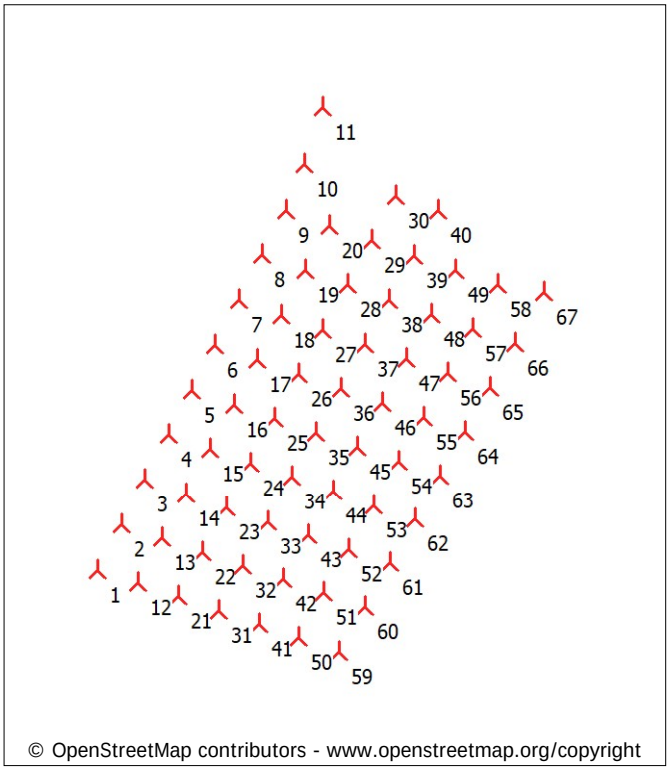
Reference WTG: IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29112.1)

Scaler / wind data

Name	EMD Default Measurement Mast Scaler
Terrain scaling	Measured Data Scaling (WAsP Stability / A-Parameter)
Micro terrain flow model	WAsP IBZ from Site Data
Used period	01/01/2004 - 31/12/2018 18:00:00
Meteo object(s)	KNMI-KNW_N53.02418_E003.49527 (44) (1) - IJV noord KNMI-KNW_N52.80124_E003.33874 (46) (1) - IJV west KNMI-KNW_N52.75354_E003.56012 (47) (1) - IJV zuid KNMI-KNW_N52.88574_E003.75126 (48) (1) - IJV oost KNMI-KNW_N52.86639_E003.52700 (49) (1) - IJV midden
Horizontal interpolation	Distance weighted with selected meteo objects
Displacement height	Omnidirectional from objects
WAsP version	WAsP 12 Version 12.03.0016

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

		Min	Max	Avg	Corr. [%]	Neg. corr. [%]	Pos. corr. [%]
Air density							
From air density settings	[°C]	8.7	8.7	8.7			
From air density settings	[hPa]	995.0	995.0	995.0			
Resulting air density	[kg/m³]	1.230	1.230	1.230			
Relative to 15°C at sea level	[%]	100.4	100.4	100.4	0.1	0.0	0.1



Scale 1:200,000

New WTG

Calculated Annual Energy for Wind Farm

WTG combination	Result PARK [MWh/y]	GROSS (no loss) Free WTGs [MWh/y]	Wake loss [%]	Specific results¤) Capacity factor [%]	Mean WTG result [MWh/y]	Full load hours [Hours/year]	Wind speed free [m/s]	Wind speed wake reduced [m/s]
Wind farm	4,805,815.5	5,484,272.6	12.4	54.6	71,728.6	4,782	10.2	9.4

¤) Based on wake reduced results and any curtailments.

Calculated Annual Energy for each of 67 new WTGs with total 1,005.0 MW rated power

	WTG type Valid	Manufact.	Type-generator	Power, rated [kW]	Rotor diameter [m]	Hub height [m]	Power curve Creator	Name	Annual Energy Result [MWh/y]	Wake loss [%]	Wind speed free [m/s]	Wind speed reduced [m/s]
1	No	IEA	Offshore Reference-15,000	15,000	240.0	150.0	USER	15 MW reference	76,829.3	6.1	10.17	9.82
2	No	IEA	Offshore Reference-15,000	15,000	240.0	150.0	USER	15 MW reference	75,134.9	8.2	10.17	9.70
3	No	IEA	Offshore Reference-15,000	15,000	240.0	150.0	USER	15 MW reference	74,351.9	9.1	10.17	9.64
4	No	IEA	Offshore Reference-15,000	15,000	240.0	150.0	USER	15 MW reference	73,954.3	9.6	10.17	9.60
5	No	IEA	Offshore Reference-15,000	15,000	240.0	150.0	USER	15 MW reference	73,798.2	9.8	10.17	9.59
6	No	IEA	Offshore Reference-15,000	15,000	240.0	150.0	USER	15 MW reference	73,788.0	9.8	10.17	9.59
7	No	IEA	Offshore Reference-15,000	15,000	240.0	150.0	USER	15 MW reference	73,955.3	9.6	10.17	9.60
8	No	IEA	Offshore Reference-15,000	15,000	240.0	150.0	USER	15 MW reference	74,336.7	9.2	10.16	9.61
9	No	IEA	Offshore Reference-15,000	15,000	240.0	150.0	USER	15 MW reference	75,087.3	8.3	10.16	9.66
10	No	IEA	Offshore Reference-15,000	15,000	240.0	150.0	USER	15 MW reference	76,508.3	6.6	10.16	9.76
11	No	IEA	Offshore Reference-15,000	15,000	240.0	150.0	USER	15 MW reference	78,287.2	4.4	10.16	9.89
12	No	IEA	Offshore Reference-15,000	15,000	240.0	150.0	USER	15 MW reference	74,956.2	8.4	10.17	9.70
13	No	IEA	Offshore Reference-15,000	15,000	240.0	150.0	USER	15 MW reference	72,676.1	11.2	10.17	9.53
14	No	IEA	Offshore Reference-15,000	15,000	240.0	150.0	USER	15 MW reference	71,615.6	12.5	10.17	9.45
15	No	IEA	Offshore Reference-15,000	15,000	240.0	150.0	USER	15 MW reference	71,061.2	13.2	10.17	9.40
16	No	IEA	Offshore Reference-15,000	15,000	240.0	150.0	USER	15 MW reference	70,806.2	13.5	10.17	9.38
17	No	IEA	Offshore Reference-15,000	15,000	240.0	150.0	USER	15 MW reference	70,762.8	13.5	10.17	9.37
18	No	IEA	Offshore Reference-15,000	15,000	240.0	150.0	USER	15 MW reference	71,002.8	13.3	10.16	9.38
19	No	IEA	Offshore Reference-15,000	15,000	240.0	150.0	USER	15 MW reference	71,439.9	12.8	10.16	9.41

To be continued on next page...
*) Included in wake losses is influence from 279 WTG(s) in the neighborhood, which has status as "Reference WTGs", see separate report to identify these.

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PARK - Main Result

Calculation: 20220902 IJV kavel II

...continued from previous page

	WTG type						Power curve		Annual Energy		Wind speed	
	Valid	Manufact.	Type-generator	Power, rated [kW]	Rotor diameter [m]	Hub height [m]	Creator	Name	Result [MWh/y]	Wake loss [%]	free [m/s]	reduced [m/s]
20	No	IEA	Offshore Reference-15,000	15,000	240.0	150.0	USER	15 MW reference	72,622.9	11.3	10.16	9.48
21	No	IEA	Offshore Reference-15,000	15,000	240.0	150.0	USER	15 MW reference	74,195.4	9.3	10.17	9.64
22	No	IEA	Offshore Reference-15,000	15,000	240.0	150.0	USER	15 MW reference	71,659.6	12.4	10.17	9.46
23	No	IEA	Offshore Reference-15,000	15,000	240.0	150.0	USER	15 MW reference	70,456.8	13.9	10.17	9.36
24	No	IEA	Offshore Reference-15,000	15,000	240.0	150.0	USER	15 MW reference	69,800.5	14.7	10.17	9.31
25	No	IEA	Offshore Reference-15,000	15,000	240.0	150.0	USER	15 MW reference	69,487.7	15.1	10.17	9.29
26	No	IEA	Offshore Reference-15,000	15,000	240.0	150.0	USER	15 MW reference	69,432.0	15.1	10.17	9.28
27	No	IEA	Offshore Reference-15,000	15,000	240.0	150.0	USER	15 MW reference	69,667.2	14.9	10.16	9.29
28	No	IEA	Offshore Reference-15,000	15,000	240.0	150.0	USER	15 MW reference	70,219.3	14.2	10.16	9.32
29	No	IEA	Offshore Reference-15,000	15,000	240.0	150.0	USER	15 MW reference	71,420.1	12.8	10.16	9.40
30	No	IEA	Offshore Reference-15,000	15,000	240.0	150.0	USER	15 MW reference	73,716.2	10.0	10.16	9.55
31	No	IEA	Offshore Reference-15,000	15,000	240.0	150.0	USER	15 MW reference	73,859.8	9.7	10.17	9.62
32	No	IEA	Offshore Reference-15,000	15,000	240.0	150.0	USER	15 MW reference	71,209.0	13.0	10.17	9.42
33	No	IEA	Offshore Reference-15,000	15,000	240.0	150.0	USER	15 MW reference	69,917.2	14.6	10.17	9.33
34	No	IEA	Offshore Reference-15,000	15,000	240.0	150.0	USER	15 MW reference	69,214.2	15.4	10.17	9.27
35	No	IEA	Offshore Reference-15,000	15,000	240.0	150.0	USER	15 MW reference	68,870.6	15.8	10.17	9.24
36	No	IEA	Offshore Reference-15,000	15,000	240.0	150.0	USER	15 MW reference	68,866.3	15.9	10.16	9.23
37	No	IEA	Offshore Reference-15,000	15,000	240.0	150.0	USER	15 MW reference	69,060.7	15.7	10.16	9.24
38	No	IEA	Offshore Reference-15,000	15,000	240.0	150.0	USER	15 MW reference	69,627.2	15.0	10.16	9.28
39	No	IEA	Offshore Reference-15,000	15,000	240.0	150.0	USER	15 MW reference	70,908.6	13.4	10.16	9.36
40	No	IEA	Offshore Reference-15,000	15,000	240.0	150.0	USER	15 MW reference	73,149.0	10.7	10.16	9.51
41	No	IEA	Offshore Reference-15,000	15,000	240.0	150.0	USER	15 MW reference	73,839.2	9.8	10.17	9.62
42	No	IEA	Offshore Reference-15,000	15,000	240.0	150.0	USER	15 MW reference	71,168.9	13.0	10.17	9.42
43	No	IEA	Offshore Reference-15,000	15,000	240.0	150.0	USER	15 MW reference	69,859.7	14.6	10.17	9.32
44	No	IEA	Offshore Reference-15,000	15,000	240.0	150.0	USER	15 MW reference	69,136.0	15.5	10.17	9.26
45	No	IEA	Offshore Reference-15,000	15,000	240.0	150.0	USER	15 MW reference	68,864.9	15.9	10.16	9.23
46	No	IEA	Offshore Reference-15,000	15,000	240.0	150.0	USER	15 MW reference	68,759.7	16.0	10.16	9.22
47	No	IEA	Offshore Reference-15,000	15,000	240.0	150.0	USER	15 MW reference	68,954.2	15.8	10.16	9.23
48	No	IEA	Offshore Reference-15,000	15,000	240.0	150.0	USER	15 MW reference	69,553.7	15.1	10.16	9.27
49	No	IEA	Offshore Reference-15,000	15,000	240.0	150.0	USER	15 MW reference	71,188.1	13.1	10.16	9.38
50	No	IEA	Offshore Reference-15,000	15,000	240.0	150.0	USER	15 MW reference	74,140.4	9.4	10.17	9.64
51	No	IEA	Offshore Reference-15,000	15,000	240.0	150.0	USER	15 MW reference	71,571.7	12.5	10.17	9.45
52	No	IEA	Offshore Reference-15,000	15,000	240.0	150.0	USER	15 MW reference	70,311.1	14.1	10.17	9.35
53	No	IEA	Offshore Reference-15,000	15,000	240.0	150.0	USER	15 MW reference	69,643.1	14.9	10.17	9.30
54	No	IEA	Offshore Reference-15,000	15,000	240.0	150.0	USER	15 MW reference	69,354.4	15.3	10.16	9.27
55	No	IEA	Offshore Reference-15,000	15,000	240.0	150.0	USER	15 MW reference	69,275.3	15.4	10.16	9.26
56	No	IEA	Offshore Reference-15,000	15,000	240.0	150.0	USER	15 MW reference	69,488.9	15.1	10.16	9.27
57	No	IEA	Offshore Reference-15,000	15,000	240.0	150.0	USER	15 MW reference	70,172.0	14.3	10.16	9.32
58	No	IEA	Offshore Reference-15,000	15,000	240.0	150.0	USER	15 MW reference	71,866.0	12.2	10.16	9.43
59	No	IEA	Offshore Reference-15,000	15,000	240.0	150.0	USER	15 MW reference	75,268.2	8.0	10.17	9.71
60	No	IEA	Offshore Reference-15,000	15,000	240.0	150.0	USER	15 MW reference	73,038.1	10.7	10.17	9.55
61	No	IEA	Offshore Reference-15,000	15,000	240.0	150.0	USER	15 MW reference	71,971.7	12.0	10.17	9.47
62	No	IEA	Offshore Reference-15,000	15,000	240.0	150.0	USER	15 MW reference	71,437.8	12.8	10.16	9.42
63	No	IEA	Offshore Reference-15,000	15,000	240.0	150.0	USER	15 MW reference	71,114.4	13.2	10.16	9.39
64	No	IEA	Offshore Reference-15,000	15,000	240.0	150.0	USER	15 MW reference	71,055.2	13.2	10.16	9.39
65	No	IEA	Offshore Reference-15,000	15,000	240.0	150.0	USER	15 MW reference	71,260.8	13.0	10.16	9.40
66	No	IEA	Offshore Reference-15,000	15,000	240.0	150.0	USER	15 MW reference	71,923.4	12.2	10.16	9.44
67	No	IEA	Offshore Reference-15,000	15,000	240.0	150.0	USER	15 MW reference	73,886.2	9.8	10.16	9.57

Annual Energy results includes shown losses. For expected NET AEP (expected sold production), see report Loss & Uncertainty.

WTG siting

		Dutch Stereo-RD/NAP 2008				Calculation period	
		X (east)	Y (north)	Z [m]	Row data/Description	Start	End
1	New	16,719	536,335	0.0	IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29112.1)	01/01/2004	31/12/2018
2	New	17,426	537,574	0.0	IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29112.2)	01/01/2004	31/12/2018
3	New	18,113	538,765	0.0	IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29112.3)	01/01/2004	31/12/2018
4	New	18,797	539,954	0.0	IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29112.4)	01/01/2004	31/12/2018
5	New	19,476	541,150	0.0	IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29112.5)	01/01/2004	31/12/2018
6	New	20,160	542,341	0.0	IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29112.6)	01/01/2004	31/12/2018
7	New	20,843	543,535	0.0	IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29112.7)	01/01/2004	31/12/2018

To be continued on next page...

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PARK - Main Result

Calculation: 20220902 IJV kavel II

...continued from previous page

		Dutch Stereo-RD/NAP 2008				Calculation period	
		X (east)	Y (north)	Z [m]	Row data/Description	Start	End
8	New	21,535	544,724	0.0	IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29112.8)	01/01/2004	31/12/2018
9	New	22,216	545,919	0.0	IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29112.9)	01/01/2004	31/12/2018
10	New	22,762	547,143	0.0	IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29112.10)	01/01/2004	31/12/2018
11	New	23,322	548,664	0.0	IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29112.11)	01/01/2004	31/12/2018
12	New	17,849	535,963	0.0	IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29113.1)	01/01/2004	31/12/2018
13	New	18,549	537,165	0.0	IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29113.2)	01/01/2004	31/12/2018
14	New	19,242	538,352	0.0	IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29113.3)	01/01/2004	31/12/2018
15	New	19,934	539,539	0.0	IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29113.4)	01/01/2004	31/12/2018
16	New	20,627	540,726	0.0	IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29113.5)	01/01/2004	31/12/2018
17	New	21,319	541,913	0.0	IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29113.6)	01/01/2004	31/12/2018
18	New	22,011	543,100	0.0	IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29113.7)	01/01/2004	31/12/2018
19	New	22,704	544,287	0.0	IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29113.8)	01/01/2004	31/12/2018
20	New	23,396	545,473	0.0	IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29113.9)	01/01/2004	31/12/2018
21	New	18,952	535,573	0.0	IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29114.1)	01/01/2004	31/12/2018
22	New	19,658	536,764	0.0	IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29114.2)	01/01/2004	31/12/2018
23	New	20,358	537,946	0.0	IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29114.3)	01/01/2004	31/12/2018
24	New	21,058	539,129	0.0	IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29114.4)	01/01/2004	31/12/2018
25	New	21,758	540,311	0.0	IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29114.5)	01/01/2004	31/12/2018
26	New	22,458	541,494	0.0	IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29114.6)	01/01/2004	31/12/2018
27	New	23,157	542,676	0.0	IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29114.7)	01/01/2004	31/12/2018
28	New	23,857	543,859	0.0	IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29114.8)	01/01/2004	31/12/2018
29	New	24,557	545,041	0.0	IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29114.9)	01/01/2004	31/12/2018
30	New	25,256	546,224	0.0	IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29114.10)	01/01/2004	31/12/2018
31	New	20,050	535,167	0.0	IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29115.1)	01/01/2004	31/12/2018
32	New	20,768	536,361	0.0	IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29115.2)	01/01/2004	31/12/2018
33	New	21,476	537,539	0.0	IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29115.3)	01/01/2004	31/12/2018
34	New	22,183	538,717	0.0	IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29115.4)	01/01/2004	31/12/2018
35	New	22,891	539,895	0.0	IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29115.5)	01/01/2004	31/12/2018
36	New	23,598	541,073	0.0	IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29115.6)	01/01/2004	31/12/2018
37	New	24,306	542,251	0.0	IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29115.7)	01/01/2004	31/12/2018
38	New	25,013	543,429	0.0	IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29115.8)	01/01/2004	31/12/2018
39	New	25,720	544,607	0.0	IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29115.9)	01/01/2004	31/12/2018
40	New	26,428	545,785	0.0	IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29115.10)	01/01/2004	31/12/2018
41	New	21,152	534,762	0.0	IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29116.1)	01/01/2004	31/12/2018
42	New	21,876	535,960	0.0	IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29116.2)	01/01/2004	31/12/2018
43	New	22,589	537,135	0.0	IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29116.3)	01/01/2004	31/12/2018
44	New	23,303	538,309	0.0	IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29116.4)	01/01/2004	31/12/2018
45	New	24,016	539,483	0.0	IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29116.5)	01/01/2004	31/12/2018
46	New	24,730	540,657	0.0	IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29116.6)	01/01/2004	31/12/2018
47	New	25,443	541,832	0.0	IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29116.7)	01/01/2004	31/12/2018
48	New	26,157	543,006	0.0	IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29116.8)	01/01/2004	31/12/2018
49	New	26,870	544,180	0.0	IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29116.9)	01/01/2004	31/12/2018
50	New	22,253	534,361	0.0	IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29117.1)	01/01/2004	31/12/2018
51	New	22,984	535,559	0.0	IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29117.2)	01/01/2004	31/12/2018
52	New	23,703	536,730	0.0	IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29117.3)	01/01/2004	31/12/2018
53	New	24,423	537,900	0.0	IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29117.4)	01/01/2004	31/12/2018
54	New	25,143	539,071	0.0	IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29117.5)	01/01/2004	31/12/2018
55	New	25,862	540,241	0.0	IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29117.6)	01/01/2004	31/12/2018
56	New	26,582	541,412	0.0	IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29117.7)	01/01/2004	31/12/2018
57	New	27,301	542,582	0.0	IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29117.8)	01/01/2004	31/12/2018
58	New	28,021	543,753	0.0	IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29117.9)	01/01/2004	31/12/2018
59	New	23,350	533,957	0.0	IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29118.1)	01/01/2004	31/12/2018
60	New	24,095	535,156	0.0	IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29118.2)	01/01/2004	31/12/2018
61	New	24,823	536,322	0.0	IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29118.3)	01/01/2004	31/12/2018
62	New	25,548	537,491	0.0	IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29118.4)	01/01/2004	31/12/2018
63	New	26,272	538,656	0.0	IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29118.5)	01/01/2004	31/12/2018
64	New	27,002	539,823	0.0	IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29118.6)	01/01/2004	31/12/2018
65	New	27,726	540,990	0.0	IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29118.7)	01/01/2004	31/12/2018
66	New	28,454	542,157	0.0	IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29118.8)	01/01/2004	31/12/2018
67	New	29,284	543,506	0.0	IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29118.9)	01/01/2004	31/12/2018

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03/09/2022 12:19/3.5.576

PARK - Main Result

Calculation: 20220902 IJV cumulatie kavel II

Setup
AEP scaled to a full year based on number of samples
Scaling factor from 15.0 years to 1 year: 0.067

Calculation performed in UTM (north)-WGS84 Zone: 31
At the site centre the difference between grid north and true north is: 0.4°

Wake
Wake Model: N.O. Jensen (RISØ/EMD) Park 2 2018
Wake decay constant
Wake decay constant: 0.060 DTU default offshore

Blockage
Blockage Model: Self similar model (Forsting: 2017)

Gamma (?)	Alpha (a)	Beta (ß)	Lambda (?)	Eta (?)
1.100	0.889	1.414	0.587	1.320

Note: When wake reductions are mentioned in this report, it also includes reduction from blockage.

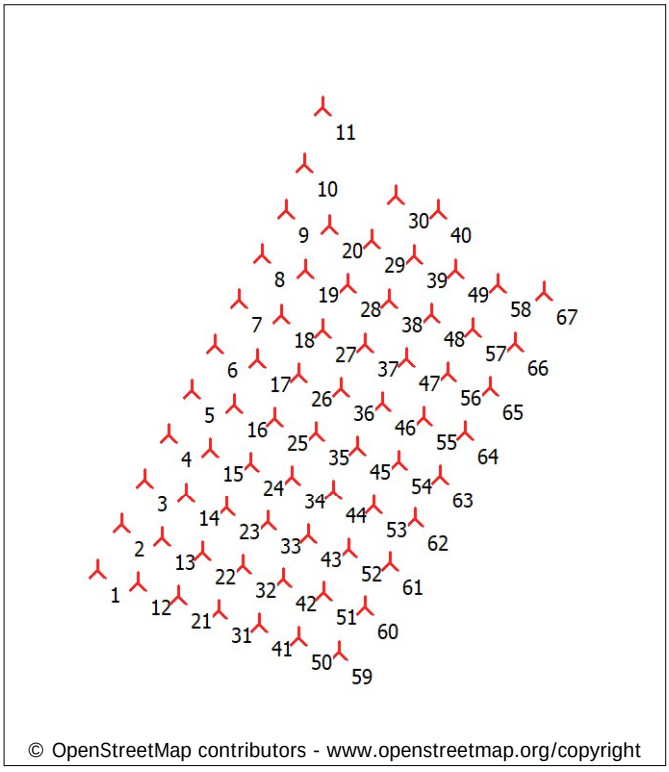
Reference WTG: IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29112.1)

Scaler / wind data

Name	EMD Default Measurement Mast Scaler
Terrain scaling	Measured Data Scaling (WAsP Stability / A-Parameter)
Micro terrain flow model	WAsP IBZ from Site Data
Used period	01/01/2004 - 31/12/2018 18:00:00
Meteo object(s)	KNMI-KNW_N53.02418_E003.49527 (44) (1) - IJV noord KNMI-KNW_N52.80124_E003.33874 (46) (1) - IJV west KNMI-KNW_N52.75354_E003.56012 (47) (1) - IJV zuid KNMI-KNW_N52.88574_E003.75126 (48) (1) - IJV oost KNMI-KNW_N52.86639_E003.52700 (49) (1) - IJV midden
Horizontal interpolation	Distance weighted with selected meteo objects
Displacement height	Omnidirectional from objects
WAsP version	WAsP 12 Version 12.03.0016

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

		Min	Max	Avg	Corr. [%]	Neg. corr. [%]	Pos. corr. [%]
Air density							
From air density settings	[°C]	8.7	8.7	8.7			
From air density settings	[hPa]	995.0	995.0	995.0			
Resulting air density	[kg/m³]	1.230	1.230	1.230			
Relative to 15°C at sea level	[%]	100.4	100.4	100.4	0.1	0.0	0.1



Scale 1:200,000

New WTG

Calculated Annual Energy for Wind Farm

WTG combination	Result PARK [MWh/y]	GROSS (no loss) Free WTGs [MWh/y]	Wake loss [%]	Specific results¤) Capacity factor [%]	Mean WTG result [MWh/y]	Full load hours [Hours/year]	Wind speed free [m/s]	Wind speed wake reduced [m/s]
Wind farm	4,447,891.8	5,484,272.6	18.9	50.5	66,386.4	4,426	10.2	9.1

¤) Based on wake reduced results and any curtailments.

Calculated Annual Energy for each of 67 new WTGs with total 1,005.0 MW rated power

	WTG type Valid	Manufact.	Type-generator	Power, rated [kW]	Rotor diameter [m]	Hub height [m]	Power curve Creator	Name	Annual Energy Result [MWh/y]	Wake loss [%]	Wind speed free [m/s]	Wind speed reduced [m/s]
1	No	IEA	Offshore Reference-15,000	15,000	240.0	150.0	USER	15 MW reference	74,098.8	9.4	10.17	9.62
2	No	IEA	Offshore Reference-15,000	15,000	240.0	150.0	USER	15 MW reference	72,233.2	11.7	10.17	9.48
3	No	IEA	Offshore Reference-15,000	15,000	240.0	150.0	USER	15 MW reference	71,267.9	12.9	10.17	9.41
4	No	IEA	Offshore Reference-15,000	15,000	240.0	150.0	USER	15 MW reference	70,668.3	13.6	10.17	9.37
5	No	IEA	Offshore Reference-15,000	15,000	240.0	150.0	USER	15 MW reference	70,292.4	14.1	10.17	9.34
6	No	IEA	Offshore Reference-15,000	15,000	240.0	150.0	USER	15 MW reference	70,022.0	14.4	10.17	9.32
7	No	IEA	Offshore Reference-15,000	15,000	240.0	150.0	USER	15 MW reference	69,865.6	14.6	10.17	9.30
8	No	IEA	Offshore Reference-15,000	15,000	240.0	150.0	USER	15 MW reference	69,783.5	14.8	10.16	9.29
9	No	IEA	Offshore Reference-15,000	15,000	240.0	150.0	USER	15 MW reference	69,876.1	14.7	10.16	9.30
10	No	IEA	Offshore Reference-15,000	15,000	240.0	150.0	USER	15 MW reference	70,384.0	14.0	10.16	9.33
11	No	IEA	Offshore Reference-15,000	15,000	240.0	150.0	USER	15 MW reference	70,358.5	14.1	10.16	9.33
12	No	IEA	Offshore Reference-15,000	15,000	240.0	150.0	USER	15 MW reference	72,106.8	11.9	10.17	9.49
13	No	IEA	Offshore Reference-15,000	15,000	240.0	150.0	USER	15 MW reference	69,640.3	14.9	10.17	9.31
14	No	IEA	Offshore Reference-15,000	15,000	240.0	150.0	USER	15 MW reference	68,378.4	16.4	10.17	9.21
15	No	IEA	Offshore Reference-15,000	15,000	240.0	150.0	USER	15 MW reference	67,609.8	17.4	10.17	9.15
16	No	IEA	Offshore Reference-15,000	15,000	240.0	150.0	USER	15 MW reference	67,110.8	18.0	10.17	9.11
17	No	IEA	Offshore Reference-15,000	15,000	240.0	150.0	USER	15 MW reference	66,782.0	18.4	10.17	9.09
18	No	IEA	Offshore Reference-15,000	15,000	240.0	150.0	USER	15 MW reference	66,616.7	18.6	10.16	9.07
19	No	IEA	Offshore Reference-15,000	15,000	240.0	150.0	USER	15 MW reference	66,482.0	18.8	10.16	9.06

To be continued on next page...
*) Included in wake losses is influence from 1076 WTG(s) in the neighborhood, which has status as "Reference WTGs", see separate report to identify these.

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03/09/2022 12:19/3.5.576

PARK - Main Result

Calculation: 20220902 IJV cumulatie kavel II

...continued from previous page

	WTG type						Power curve		Annual Energy		Wind speed	
	Valid	Manufact.	Type-generator	Power, rated [kW]	Rotor diameter [m]	Hub height [m]	Creator	Name	Result [MWh/y]	Wake loss [%]	free [m/s]	reduced [m/s]
20	No	IEA	Offshore Reference-15,000	15,000	240.0	150.0	USER	15 MW reference	66,781.8	18.4	10.16	9.08
21	No	IEA	Offshore Reference-15,000	15,000	240.0	150.0	USER	15 MW reference	71,178.7	13.0	10.17	9.43
22	No	IEA	Offshore Reference-15,000	15,000	240.0	150.0	USER	15 MW reference	68,420.2	16.4	10.17	9.22
23	No	IEA	Offshore Reference-15,000	15,000	240.0	150.0	USER	15 MW reference	66,977.4	18.1	10.17	9.11
24	No	IEA	Offshore Reference-15,000	15,000	240.0	150.0	USER	15 MW reference	66,075.2	19.3	10.17	9.04
25	No	IEA	Offshore Reference-15,000	15,000	240.0	150.0	USER	15 MW reference	65,483.3	20.0	10.17	9.00
26	No	IEA	Offshore Reference-15,000	15,000	240.0	150.0	USER	15 MW reference	65,098.2	20.4	10.17	8.97
27	No	IEA	Offshore Reference-15,000	15,000	240.0	150.0	USER	15 MW reference	64,911.3	20.7	10.16	8.95
28	No	IEA	Offshore Reference-15,000	15,000	240.0	150.0	USER	15 MW reference	64,815.7	20.8	10.16	8.94
29	No	IEA	Offshore Reference-15,000	15,000	240.0	150.0	USER	15 MW reference	65,010.8	20.6	10.16	8.95
30	No	IEA	Offshore Reference-15,000	15,000	240.0	150.0	USER	15 MW reference	65,503.6	20.0	10.16	8.98
31	No	IEA	Offshore Reference-15,000	15,000	240.0	150.0	USER	15 MW reference	70,589.7	13.7	10.17	9.39
32	No	IEA	Offshore Reference-15,000	15,000	240.0	150.0	USER	15 MW reference	67,661.3	17.3	10.17	9.17
33	No	IEA	Offshore Reference-15,000	15,000	240.0	150.0	USER	15 MW reference	66,093.7	19.2	10.17	9.05
34	No	IEA	Offshore Reference-15,000	15,000	240.0	150.0	USER	15 MW reference	65,104.5	20.4	10.17	8.98
35	No	IEA	Offshore Reference-15,000	15,000	240.0	150.0	USER	15 MW reference	64,456.9	21.2	10.17	8.93
36	No	IEA	Offshore Reference-15,000	15,000	240.0	150.0	USER	15 MW reference	64,084.3	21.7	10.16	8.89
37	No	IEA	Offshore Reference-15,000	15,000	240.0	150.0	USER	15 MW reference	63,802.2	22.1	10.16	8.87
38	No	IEA	Offshore Reference-15,000	15,000	240.0	150.0	USER	15 MW reference	63,644.7	22.3	10.16	8.85
39	No	IEA	Offshore Reference-15,000	15,000	240.0	150.0	USER	15 MW reference	63,738.1	22.2	10.16	8.86
40	No	IEA	Offshore Reference-15,000	15,000	240.0	150.0	USER	15 MW reference	63,729.1	22.2	10.16	8.85
41	No	IEA	Offshore Reference-15,000	15,000	240.0	150.0	USER	15 MW reference	70,201.4	14.2	10.17	9.36
42	No	IEA	Offshore Reference-15,000	15,000	240.0	150.0	USER	15 MW reference	67,165.5	17.9	10.17	9.13
43	No	IEA	Offshore Reference-15,000	15,000	240.0	150.0	USER	15 MW reference	65,515.1	19.9	10.17	9.01
44	No	IEA	Offshore Reference-15,000	15,000	240.0	150.0	USER	15 MW reference	64,469.6	21.2	10.17	8.93
45	No	IEA	Offshore Reference-15,000	15,000	240.0	150.0	USER	15 MW reference	63,832.3	22.0	10.16	8.88
46	No	IEA	Offshore Reference-15,000	15,000	240.0	150.0	USER	15 MW reference	63,328.5	22.7	10.16	8.84
47	No	IEA	Offshore Reference-15,000	15,000	240.0	150.0	USER	15 MW reference	62,968.6	23.1	10.16	8.81
48	No	IEA	Offshore Reference-15,000	15,000	240.0	150.0	USER	15 MW reference	62,825.7	23.3	10.16	8.80
49	No	IEA	Offshore Reference-15,000	15,000	240.0	150.0	USER	15 MW reference	63,004.1	23.1	10.16	8.80
50	No	IEA	Offshore Reference-15,000	15,000	240.0	150.0	USER	15 MW reference	69,936.3	14.5	10.17	9.34
51	No	IEA	Offshore Reference-15,000	15,000	240.0	150.0	USER	15 MW reference	66,852.1	18.3	10.17	9.11
52	No	IEA	Offshore Reference-15,000	15,000	240.0	150.0	USER	15 MW reference	65,165.6	20.4	10.17	8.99
53	No	IEA	Offshore Reference-15,000	15,000	240.0	150.0	USER	15 MW reference	64,090.0	21.7	10.17	8.90
54	No	IEA	Offshore Reference-15,000	15,000	240.0	150.0	USER	15 MW reference	63,381.0	22.6	10.16	8.84
55	No	IEA	Offshore Reference-15,000	15,000	240.0	150.0	USER	15 MW reference	62,856.6	23.2	10.16	8.80
56	No	IEA	Offshore Reference-15,000	15,000	240.0	150.0	USER	15 MW reference	62,504.7	23.7	10.16	8.78
57	No	IEA	Offshore Reference-15,000	15,000	240.0	150.0	USER	15 MW reference	62,318.4	23.9	10.16	8.76
58	No	IEA	Offshore Reference-15,000	15,000	240.0	150.0	USER	15 MW reference	62,413.7	23.8	10.16	8.76
59	No	IEA	Offshore Reference-15,000	15,000	240.0	150.0	USER	15 MW reference	69,885.9	14.6	10.17	9.34
60	No	IEA	Offshore Reference-15,000	15,000	240.0	150.0	USER	15 MW reference	66,788.8	18.4	10.17	9.11
61	No	IEA	Offshore Reference-15,000	15,000	240.0	150.0	USER	15 MW reference	65,097.4	20.4	10.17	8.98
62	No	IEA	Offshore Reference-15,000	15,000	240.0	150.0	USER	15 MW reference	64,026.2	21.8	10.16	8.90
63	No	IEA	Offshore Reference-15,000	15,000	240.0	150.0	USER	15 MW reference	63,227.0	22.8	10.16	8.84
64	No	IEA	Offshore Reference-15,000	15,000	240.0	150.0	USER	15 MW reference	62,676.0	23.5	10.16	8.79
65	No	IEA	Offshore Reference-15,000	15,000	240.0	150.0	USER	15 MW reference	62,319.6	23.9	10.16	8.76
66	No	IEA	Offshore Reference-15,000	15,000	240.0	150.0	USER	15 MW reference	62,147.3	24.1	10.16	8.75
67	No	IEA	Offshore Reference-15,000	15,000	240.0	150.0	USER	15 MW reference	62,156.5	24.1	10.16	8.74

Annual Energy results includes shown losses. For expected NET AEP (expected sold production), see report Loss & Uncertainty.

WTG siting

		Dutch Stereo-RD/NAP 2008				Calculation period	
		X (east)	Y (north)	Z [m]	Row data/Description	Start	End
1	New	16,719	536,335	0.0	IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29112.1)	01/01/2004	31/12/2018
2	New	17,426	537,574	0.0	IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29112.2)	01/01/2004	31/12/2018
3	New	18,113	538,765	0.0	IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29112.3)	01/01/2004	31/12/2018
4	New	18,797	539,954	0.0	IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29112.4)	01/01/2004	31/12/2018
5	New	19,476	541,150	0.0	IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29112.5)	01/01/2004	31/12/2018
6	New	20,160	542,341	0.0	IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29112.6)	01/01/2004	31/12/2018
7	New	20,843	543,535	0.0	IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29112.7)	01/01/2004	31/12/2018

To be continued on next page...

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PARK - Main Result

Calculation: 20220902 IJV cumulatie kavel II

...continued from previous page

		Dutch Stereo-RD/NAP 2008				Calculation period	
		X (east)	Y (north)	Z [m]	Row data/Description	Start	End
8	New	21,535	544,724	0.0	IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29112.8)	01/01/2004	31/12/2018
9	New	22,216	545,919	0.0	IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29112.9)	01/01/2004	31/12/2018
10	New	22,762	547,143	0.0	IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29112.10)	01/01/2004	31/12/2018
11	New	23,322	548,664	0.0	IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29112.11)	01/01/2004	31/12/2018
12	New	17,849	535,963	0.0	IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29113.1)	01/01/2004	31/12/2018
13	New	18,549	537,165	0.0	IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29113.2)	01/01/2004	31/12/2018
14	New	19,242	538,352	0.0	IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29113.3)	01/01/2004	31/12/2018
15	New	19,934	539,539	0.0	IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29113.4)	01/01/2004	31/12/2018
16	New	20,627	540,726	0.0	IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29113.5)	01/01/2004	31/12/2018
17	New	21,319	541,913	0.0	IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29113.6)	01/01/2004	31/12/2018
18	New	22,011	543,100	0.0	IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29113.7)	01/01/2004	31/12/2018
19	New	22,704	544,287	0.0	IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29113.8)	01/01/2004	31/12/2018
20	New	23,396	545,473	0.0	IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29113.9)	01/01/2004	31/12/2018
21	New	18,952	535,573	0.0	IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29114.1)	01/01/2004	31/12/2018
22	New	19,658	536,764	0.0	IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29114.2)	01/01/2004	31/12/2018
23	New	20,358	537,946	0.0	IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29114.3)	01/01/2004	31/12/2018
24	New	21,058	539,129	0.0	IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29114.4)	01/01/2004	31/12/2018
25	New	21,758	540,311	0.0	IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29114.5)	01/01/2004	31/12/2018
26	New	22,458	541,494	0.0	IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29114.6)	01/01/2004	31/12/2018
27	New	23,157	542,676	0.0	IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29114.7)	01/01/2004	31/12/2018
28	New	23,857	543,859	0.0	IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29114.8)	01/01/2004	31/12/2018
29	New	24,557	545,041	0.0	IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29114.9)	01/01/2004	31/12/2018
30	New	25,256	546,224	0.0	IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29114.10)	01/01/2004	31/12/2018
31	New	20,050	535,167	0.0	IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29115.1)	01/01/2004	31/12/2018
32	New	20,768	536,361	0.0	IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29115.2)	01/01/2004	31/12/2018
33	New	21,476	537,539	0.0	IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29115.3)	01/01/2004	31/12/2018
34	New	22,183	538,717	0.0	IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29115.4)	01/01/2004	31/12/2018
35	New	22,891	539,895	0.0	IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29115.5)	01/01/2004	31/12/2018
36	New	23,598	541,073	0.0	IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29115.6)	01/01/2004	31/12/2018
37	New	24,306	542,251	0.0	IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29115.7)	01/01/2004	31/12/2018
38	New	25,013	543,429	0.0	IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29115.8)	01/01/2004	31/12/2018
39	New	25,720	544,607	0.0	IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29115.9)	01/01/2004	31/12/2018
40	New	26,428	545,785	0.0	IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29115.10)	01/01/2004	31/12/2018
41	New	21,152	534,762	0.0	IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29116.1)	01/01/2004	31/12/2018
42	New	21,876	535,960	0.0	IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29116.2)	01/01/2004	31/12/2018
43	New	22,589	537,135	0.0	IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29116.3)	01/01/2004	31/12/2018
44	New	23,303	538,309	0.0	IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29116.4)	01/01/2004	31/12/2018
45	New	24,016	539,483	0.0	IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29116.5)	01/01/2004	31/12/2018
46	New	24,730	540,657	0.0	IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29116.6)	01/01/2004	31/12/2018
47	New	25,443	541,832	0.0	IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29116.7)	01/01/2004	31/12/2018
48	New	26,157	543,006	0.0	IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29116.8)	01/01/2004	31/12/2018
49	New	26,870	544,180	0.0	IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29116.9)	01/01/2004	31/12/2018
50	New	22,253	534,361	0.0	IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29117.1)	01/01/2004	31/12/2018
51	New	22,984	535,559	0.0	IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29117.2)	01/01/2004	31/12/2018
52	New	23,703	536,730	0.0	IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29117.3)	01/01/2004	31/12/2018
53	New	24,423	537,900	0.0	IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29117.4)	01/01/2004	31/12/2018
54	New	25,143	539,071	0.0	IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29117.5)	01/01/2004	31/12/2018
55	New	25,862	540,241	0.0	IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29117.6)	01/01/2004	31/12/2018
56	New	26,582	541,412	0.0	IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29117.7)	01/01/2004	31/12/2018
57	New	27,301	542,582	0.0	IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29117.8)	01/01/2004	31/12/2018
58	New	28,021	543,753	0.0	IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29117.9)	01/01/2004	31/12/2018
59	New	23,350	533,957	0.0	IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29118.1)	01/01/2004	31/12/2018
60	New	24,095	535,156	0.0	IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29118.2)	01/01/2004	31/12/2018
61	New	24,823	536,322	0.0	IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29118.3)	01/01/2004	31/12/2018
62	New	25,548	537,491	0.0	IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29118.4)	01/01/2004	31/12/2018
63	New	26,272	538,656	0.0	IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29118.5)	01/01/2004	31/12/2018
64	New	27,002	539,823	0.0	IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29118.6)	01/01/2004	31/12/2018
65	New	27,726	540,990	0.0	IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29118.7)	01/01/2004	31/12/2018
66	New	28,454	542,157	0.0	IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29118.8)	01/01/2004	31/12/2018
67	New	29,284	543,506	0.0	IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29118.9)	01/01/2004	31/12/2018