

PARK - Main Result

Calculation: 20220902 IJV kavel I

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 (B) 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 I-I hub: 150.0 m (TOT: 270.0 m) (29215)

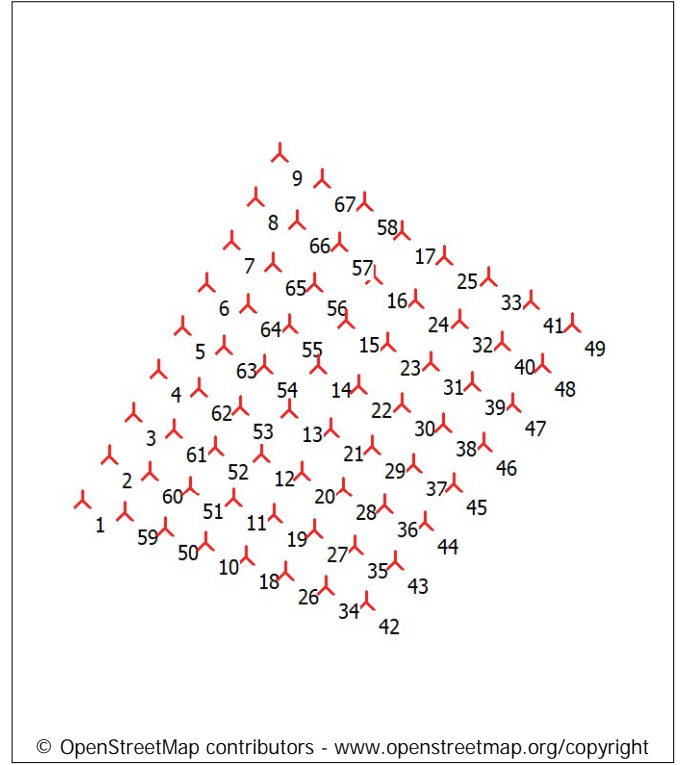
Scaler/wind data

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 |



▲ 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 ^{a)} | | Wind speed | | |
|-----------------|---------------------------|---|------------------|--------------------------------|----------------------------|---------------------------------|---------------|-----------------------|
| | | | | Capacity factor [%] | Mean WTG result [MWh/y] | Full load hours [Hours/year] | free [m/s] | wake reduced [m/s] |
| Wind farm | 4,766,664.8 | 5,465,639.8 | 12.8 | 54.1 | 71,144.3 | 4,743 | 10.1 | 9.4 |

^{a)} 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 | | Annual Energy | | Wind speed | |
|----------|-------|---------------------------|----------------|-------------------|--------------------|----------------|-----------------|----------|----------------|---------------|------------|---------------|
| | | | | | | | Creator | Name | Result [MWh/y] | Wake loss [%] | free [m/s] | reduced [m/s] |
| 1 No | IEA | Offshore Reference-15,000 | 15,000 | 240.0 | 150.0 | USER | 15 MW reference | 76,270.8 | 6.3 | 10.12 | 9.77 | |
| 2 No | IEA | Offshore Reference-15,000 | 15,000 | 240.0 | 150.0 | USER | 15 MW reference | 74,465.4 | 8.5 | 10.12 | 9.63 | |
| 3 No | IEA | Offshore Reference-15,000 | 15,000 | 240.0 | 150.0 | USER | 15 MW reference | 73,758.7 | 9.4 | 10.12 | 9.58 | |
| 4 No | IEA | Offshore Reference-15,000 | 15,000 | 240.0 | 150.0 | USER | 15 MW reference | 73,979.0 | 9.7 | 10.16 | 9.60 | |
| 5 No | IEA | Offshore Reference-15,000 | 15,000 | 240.0 | 150.0 | USER | 15 MW reference | 73,856.4 | 9.8 | 10.16 | 9.59 | |
| 6 No | IEA | Offshore Reference-15,000 | 15,000 | 240.0 | 150.0 | USER | 15 MW reference | 73,956.0 | 9.7 | 10.16 | 9.59 | |
| 7 No | IEA | Offshore Reference-15,000 | 15,000 | 240.0 | 150.0 | USER | 15 MW reference | 74,286.9 | 9.3 | 10.16 | 9.61 | |
| 8 No | IEA | Offshore Reference-15,000 | 15,000 | 240.0 | 150.0 | USER | 15 MW reference | 74,933.6 | 8.5 | 10.16 | 9.65 | |
| 9 No | IEA | Offshore Reference-15,000 | 15,000 | 240.0 | 150.0 | USER | 15 MW reference | 76,496.6 | 6.6 | 10.16 | 9.76 | |
| 10 No | IEA | Offshore Reference-15,000 | 15,000 | 240.0 | 150.0 | USER | 15 MW reference | 72,908.5 | 10.4 | 10.12 | 9.54 | |
| 11 No | IEA | Offshore Reference-15,000 | 15,000 | 240.0 | 150.0 | USER | 15 MW reference | 70,304.6 | 13.6 | 10.12 | 9.34 | |
| 12 No | IEA | Offshore Reference-15,000 | 15,000 | 240.0 | 150.0 | USER | 15 MW reference | 69,170.9 | 15.0 | 10.12 | 9.25 | |
| 13 No | IEA | Offshore Reference-15,000 | 15,000 | 240.0 | 150.0 | USER | 15 MW reference | 68,642.1 | 15.7 | 10.12 | 9.21 | |
| 14 No | IEA | Offshore Reference-15,000 | 15,000 | 240.0 | 150.0 | USER | 15 MW reference | 68,539.4 | 15.8 | 10.12 | 9.20 | |
| 15 No | IEA | Offshore Reference-15,000 | 15,000 | 240.0 | 150.0 | USER | 15 MW reference | 69,352.5 | 15.3 | 10.16 | 9.26 | |
| 16 No | IEA | Offshore Reference-15,000 | 15,000 | 240.0 | 150.0 | USER | 15 MW reference | 70,114.2 | 14.4 | 10.16 | 9.31 | |
| 17 No | IEA | Offshore Reference-15,000 | 15,000 | 240.0 | 150.0 | USER | 15 MW reference | 72,099.9 | 12.0 | 10.16 | 9.44 | |
| 18 No | IEA | Offshore Reference-15,000 | 15,000 | 240.0 | 150.0 | USER | 15 MW reference | 72,696.7 | 10.7 | 10.12 | 9.53 | |
| 19 No | IEA | Offshore Reference-15,000 | 15,000 | 240.0 | 150.0 | USER | 15 MW reference | 70,035.7 | 14.0 | 10.12 | 9.33 | |

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.

PARK - Main Result

Calculation: 20220902 IJV kavel I

...continued from previous page

| WTG type | Valid | Manufact. | Type-generator | Power, rated [kW] | Rotor diameter [m] | Hub height [m] | Power curve | | Annual Energy | | Wind speed | |
|----------|-------|---------------------------|----------------|-------------------|--------------------|----------------|-----------------|----------|----------------|---------------|------------|---------------|
| | | | | | | | 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 | 68,857.1 | 15.4 | 10.12 | 9.24 | |
| 21 No | IEA | Offshore Reference-15,000 | 15,000 | 240.0 | 150.0 | USER | 15 MW reference | 68,298.8 | 16.1 | 10.12 | 9.19 | |
| 22 No | IEA | Offshore Reference-15,000 | 15,000 | 240.0 | 150.0 | USER | 15 MW reference | 68,181.8 | 16.3 | 10.12 | 9.18 | |
| 23 No | IEA | Offshore Reference-15,000 | 15,000 | 240.0 | 150.0 | USER | 15 MW reference | 68,514.4 | 15.8 | 10.12 | 9.19 | |
| 24 No | IEA | Offshore Reference-15,000 | 15,000 | 240.0 | 150.0 | USER | 15 MW reference | 69,858.0 | 14.7 | 10.16 | 9.29 | |
| 25 No | IEA | Offshore Reference-15,000 | 15,000 | 240.0 | 150.0 | USER | 15 MW reference | 71,881.4 | 12.2 | 10.16 | 9.43 | |
| 26 No | IEA | Offshore Reference-15,000 | 15,000 | 240.0 | 150.0 | USER | 15 MW reference | 72,702.9 | 10.7 | 10.12 | 9.53 | |
| 27 No | IEA | Offshore Reference-15,000 | 15,000 | 240.0 | 150.0 | USER | 15 MW reference | 70,102.5 | 13.9 | 10.12 | 9.33 | |
| 28 No | IEA | Offshore Reference-15,000 | 15,000 | 240.0 | 150.0 | USER | 15 MW reference | 68,979.0 | 15.3 | 10.12 | 9.24 | |
| 29 No | IEA | Offshore Reference-15,000 | 15,000 | 240.0 | 150.0 | USER | 15 MW reference | 68,463.7 | 15.9 | 10.12 | 9.20 | |
| 30 No | IEA | Offshore Reference-15,000 | 15,000 | 240.0 | 150.0 | USER | 15 MW reference | 68,379.6 | 16.0 | 10.12 | 9.19 | |
| 31 No | IEA | Offshore Reference-15,000 | 15,000 | 240.0 | 150.0 | USER | 15 MW reference | 68,716.7 | 15.6 | 10.12 | 9.21 | |
| 32 No | IEA | Offshore Reference-15,000 | 15,000 | 240.0 | 150.0 | USER | 15 MW reference | 70,035.5 | 14.5 | 10.16 | 9.30 | |
| 33 No | IEA | Offshore Reference-15,000 | 15,000 | 240.0 | 150.0 | USER | 15 MW reference | 72,057.5 | 12.0 | 10.16 | 9.44 | |
| 34 No | IEA | Offshore Reference-15,000 | 15,000 | 240.0 | 150.0 | USER | 15 MW reference | 72,991.1 | 10.3 | 10.12 | 9.54 | |
| 35 No | IEA | Offshore Reference-15,000 | 15,000 | 240.0 | 150.0 | USER | 15 MW reference | 70,498.6 | 13.4 | 10.12 | 9.36 | |
| 36 No | IEA | Offshore Reference-15,000 | 15,000 | 240.0 | 150.0 | USER | 15 MW reference | 69,435.0 | 14.7 | 10.12 | 9.27 | |
| 37 No | IEA | Offshore Reference-15,000 | 15,000 | 240.0 | 150.0 | USER | 15 MW reference | 68,970.6 | 15.3 | 10.12 | 9.23 | |
| 38 No | IEA | Offshore Reference-15,000 | 15,000 | 240.0 | 150.0 | USER | 15 MW reference | 68,893.1 | 15.4 | 10.12 | 9.22 | |
| 39 No | IEA | Offshore Reference-15,000 | 15,000 | 240.0 | 150.0 | USER | 15 MW reference | 69,177.8 | 15.0 | 10.12 | 9.24 | |
| 40 No | IEA | Offshore Reference-15,000 | 15,000 | 240.0 | 150.0 | USER | 15 MW reference | 69,915.9 | 14.1 | 10.12 | 9.29 | |
| 41 No | IEA | Offshore Reference-15,000 | 15,000 | 240.0 | 150.0 | USER | 15 MW reference | 72,329.1 | 11.7 | 10.16 | 9.46 | |
| 42 No | IEA | Offshore Reference-15,000 | 15,000 | 240.0 | 150.0 | USER | 15 MW reference | 74,018.1 | 9.1 | 10.12 | 9.61 | |
| 43 No | IEA | Offshore Reference-15,000 | 15,000 | 240.0 | 150.0 | USER | 15 MW reference | 71,870.0 | 11.7 | 10.12 | 9.45 | |
| 44 No | IEA | Offshore Reference-15,000 | 15,000 | 240.0 | 150.0 | USER | 15 MW reference | 71,000.6 | 12.8 | 10.12 | 9.38 | |
| 45 No | IEA | Offshore Reference-15,000 | 15,000 | 240.0 | 150.0 | USER | 15 MW reference | 70,611.0 | 13.3 | 10.12 | 9.35 | |
| 46 No | IEA | Offshore Reference-15,000 | 15,000 | 240.0 | 150.0 | USER | 15 MW reference | 70,539.0 | 13.4 | 10.12 | 9.34 | |
| 47 No | IEA | Offshore Reference-15,000 | 15,000 | 240.0 | 150.0 | USER | 15 MW reference | 70,779.5 | 13.1 | 10.12 | 9.35 | |
| 48 No | IEA | Offshore Reference-15,000 | 15,000 | 240.0 | 150.0 | USER | 15 MW reference | 71,381.2 | 12.3 | 10.12 | 9.39 | |
| 49 No | IEA | Offshore Reference-15,000 | 15,000 | 240.0 | 150.0 | USER | 15 MW reference | 72,940.3 | 10.4 | 10.12 | 9.49 | |
| 50 No | IEA | Offshore Reference-15,000 | 15,000 | 240.0 | 150.0 | USER | 15 MW reference | 73,364.6 | 9.9 | 10.12 | 9.57 | |
| 51 No | IEA | Offshore Reference-15,000 | 15,000 | 240.0 | 150.0 | USER | 15 MW reference | 70,810.8 | 13.0 | 10.12 | 9.38 | |
| 52 No | IEA | Offshore Reference-15,000 | 15,000 | 240.0 | 150.0 | USER | 15 MW reference | 69,657.8 | 14.4 | 10.12 | 9.29 | |
| 53 No | IEA | Offshore Reference-15,000 | 15,000 | 240.0 | 150.0 | USER | 15 MW reference | 69,084.2 | 15.1 | 10.12 | 9.24 | |
| 54 No | IEA | Offshore Reference-15,000 | 15,000 | 240.0 | 150.0 | USER | 15 MW reference | 68,883.3 | 15.4 | 10.12 | 9.22 | |
| 55 No | IEA | Offshore Reference-15,000 | 15,000 | 240.0 | 150.0 | USER | 15 MW reference | 69,468.8 | 15.2 | 10.16 | 9.27 | |
| 56 No | IEA | Offshore Reference-15,000 | 15,000 | 240.0 | 150.0 | USER | 15 MW reference | 69,864.3 | 14.7 | 10.16 | 9.30 | |
| 57 No | IEA | Offshore Reference-15,000 | 15,000 | 240.0 | 150.0 | USER | 15 MW reference | 70,729.5 | 13.6 | 10.16 | 9.35 | |
| 58 No | IEA | Offshore Reference-15,000 | 15,000 | 240.0 | 150.0 | USER | 15 MW reference | 72,765.8 | 11.1 | 10.16 | 9.48 | |
| 59 No | IEA | Offshore Reference-15,000 | 15,000 | 240.0 | 150.0 | USER | 15 MW reference | 74,220.7 | 8.8 | 10.12 | 9.63 | |
| 60 No | IEA | Offshore Reference-15,000 | 15,000 | 240.0 | 150.0 | USER | 15 MW reference | 71,865.2 | 11.7 | 10.12 | 9.46 | |
| 61 No | IEA | Offshore Reference-15,000 | 15,000 | 240.0 | 150.0 | USER | 15 MW reference | 70,837.9 | 13.0 | 10.12 | 9.38 | |
| 62 No | IEA | Offshore Reference-15,000 | 15,000 | 240.0 | 150.0 | USER | 15 MW reference | 70,365.2 | 13.6 | 10.12 | 9.34 | |
| 63 No | IEA | Offshore Reference-15,000 | 15,000 | 240.0 | 150.0 | USER | 15 MW reference | 70,717.8 | 13.6 | 10.16 | 9.37 | |
| 64 No | IEA | Offshore Reference-15,000 | 15,000 | 240.0 | 150.0 | USER | 15 MW reference | 70,799.1 | 13.5 | 10.16 | 9.37 | |
| 65 No | IEA | Offshore Reference-15,000 | 15,000 | 240.0 | 150.0 | USER | 15 MW reference | 71,174.6 | 13.1 | 10.16 | 9.39 | |
| 66 No | IEA | Offshore Reference-15,000 | 15,000 | 240.0 | 150.0 | USER | 15 MW reference | 71,968.2 | 12.1 | 10.16 | 9.44 | |
| 67 No | IEA | Offshore Reference-15,000 | 15,000 | 240.0 | 150.0 | USER | 15 MW reference | 73,839.3 | 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 | 24,607 | 533,531 | 0.0 | IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29215) | 01/01/2004 | 31/12/2018 |
| 2 New | 25,399 | 534,732 | 0.0 | IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29196.2) | 01/01/2004 | 31/12/2018 |
| 3 New | 26,106 | 535,871 | 0.0 | IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29196.3) | 01/01/2004 | 31/12/2018 |
| 4 New | 26,813 | 537,010 | 0.0 | IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29196.4) | 01/01/2004 | 31/12/2018 |
| 5 New | 27,519 | 538,149 | 0.0 | IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29196.5) | 01/01/2004 | 31/12/2018 |
| 6 New | 28,225 | 539,289 | 0.0 | IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29196.6) | 01/01/2004 | 31/12/2018 |
| 7 New | 28,932 | 540,428 | 0.0 | IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29196.7) | 01/01/2004 | 31/12/2018 |

To be continued on next page...

PARK - Main Result

Calculation: 20220902 IJV kavel I

...continued from previous page

| | | Dutch Stereo-RD/NAP 2008 | | | | | Calculation period | |
|--------|----------|--------------------------|-----|--|--|------------|--------------------|--|
| | X (east) | Y (north) | Z | Row data/Description | | Start | End | |
| | [m] | | | | | | | |
| 8 New | 29,638 | 541,568 | 0.0 | IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29196.8) | | 01/01/2004 | 31/12/2018 | |
| 9 New | 30,341 | 542,750 | 0.0 | IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29196.9) | | 01/01/2004 | 31/12/2018 | |
| 10 New | 27,998 | 532,308 | 0.0 | IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29199.1) | | 01/01/2004 | 31/12/2018 | |
| 11 New | 28,806 | 533,488 | 0.0 | IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29199.2) | | 01/01/2004 | 31/12/2018 | |
| 12 New | 29,615 | 534,668 | 0.0 | IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29199.3) | | 01/01/2004 | 31/12/2018 | |
| 13 New | 30,423 | 535,848 | 0.0 | IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29199.4) | | 01/01/2004 | 31/12/2018 | |
| 14 New | 31,232 | 537,029 | 0.0 | IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29199.5) | | 01/01/2004 | 31/12/2018 | |
| 15 New | 32,040 | 538,209 | 0.0 | IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29199.6) | | 01/01/2004 | 31/12/2018 | |
| 16 New | 32,849 | 539,389 | 0.0 | IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29199.7) | | 01/01/2004 | 31/12/2018 | |
| 17 New | 33,657 | 540,569 | 0.0 | IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29199.8) | | 01/01/2004 | 31/12/2018 | |
| 18 New | 29,099 | 531,880 | 0.0 | IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29200.1) | | 01/01/2004 | 31/12/2018 | |
| 19 New | 29,914 | 533,019 | 0.0 | IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29200.2) | | 01/01/2004 | 31/12/2018 | |
| 20 New | 30,729 | 534,158 | 0.0 | IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29200.3) | | 01/01/2004 | 31/12/2018 | |
| 21 New | 31,543 | 535,297 | 0.0 | IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29200.4) | | 01/01/2004 | 31/12/2018 | |
| 22 New | 32,358 | 536,437 | 0.0 | IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29200.5) | | 01/01/2004 | 31/12/2018 | |
| 23 New | 33,173 | 537,576 | 0.0 | IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29200.6) | | 01/01/2004 | 31/12/2018 | |
| 24 New | 33,987 | 538,715 | 0.0 | IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29200.7) | | 01/01/2004 | 31/12/2018 | |
| 25 New | 34,801 | 539,855 | 0.0 | IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29200.8) | | 01/01/2004 | 31/12/2018 | |
| 26 New | 30,201 | 531,452 | 0.0 | IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29201.1) | | 01/01/2004 | 31/12/2018 | |
| 27 New | 31,031 | 532,567 | 0.0 | IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29201.2) | | 01/01/2004 | 31/12/2018 | |
| 28 New | 31,861 | 533,683 | 0.0 | IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29201.3) | | 01/01/2004 | 31/12/2018 | |
| 29 New | 32,691 | 534,798 | 0.0 | IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29201.4) | | 01/01/2004 | 31/12/2018 | |
| 30 New | 33,521 | 535,914 | 0.0 | IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29201.5) | | 01/01/2004 | 31/12/2018 | |
| 31 New | 34,352 | 537,029 | 0.0 | IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29201.6) | | 01/01/2004 | 31/12/2018 | |
| 32 New | 35,182 | 538,145 | 0.0 | IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29201.7) | | 01/01/2004 | 31/12/2018 | |
| 33 New | 36,011 | 539,261 | 0.0 | IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29201.8) | | 01/01/2004 | 31/12/2018 | |
| 34 New | 31,302 | 531,023 | 0.0 | IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29202.1) | | 01/01/2004 | 31/12/2018 | |
| 35 New | 32,142 | 532,107 | 0.0 | IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29202.2) | | 01/01/2004 | 31/12/2018 | |
| 36 New | 32,981 | 533,190 | 0.0 | IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29202.3) | | 01/01/2004 | 31/12/2018 | |
| 37 New | 33,821 | 534,273 | 0.0 | IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29202.4) | | 01/01/2004 | 31/12/2018 | |
| 38 New | 34,660 | 535,357 | 0.0 | IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29202.5) | | 01/01/2004 | 31/12/2018 | |
| 39 New | 35,500 | 536,440 | 0.0 | IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29202.6) | | 01/01/2004 | 31/12/2018 | |
| 40 New | 36,339 | 537,524 | 0.0 | IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29202.7) | | 01/01/2004 | 31/12/2018 | |
| 41 New | 37,178 | 538,607 | 0.0 | IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29202.8) | | 01/01/2004 | 31/12/2018 | |
| 42 New | 32,400 | 530,595 | 0.0 | IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29203.1) | | 01/01/2004 | 31/12/2018 | |
| 43 New | 33,245 | 531,645 | 0.0 | IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29203.2) | | 01/01/2004 | 31/12/2018 | |
| 44 New | 34,087 | 532,695 | 0.0 | IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29203.3) | | 01/01/2004 | 31/12/2018 | |
| 45 New | 34,928 | 533,745 | 0.0 | IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29203.4) | | 01/01/2004 | 31/12/2018 | |
| 46 New | 35,770 | 534,795 | 0.0 | IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29203.5) | | 01/01/2004 | 31/12/2018 | |
| 47 New | 36,611 | 535,845 | 0.0 | IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29203.6) | | 01/01/2004 | 31/12/2018 | |
| 48 New | 37,452 | 536,895 | 0.0 | IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29203.7) | | 01/01/2004 | 31/12/2018 | |
| 49 New | 38,294 | 537,945 | 0.0 | IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29203.8) | | 01/01/2004 | 31/12/2018 | |
| 50 New | 26,896 | 532,736 | 0.0 | IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29198.1) | | 01/01/2004 | 31/12/2018 | |
| 51 New | 27,613 | 533,815 | 0.0 | IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29198.2) | | 01/01/2004 | 31/12/2018 | |
| 52 New | 28,330 | 534,894 | 0.0 | IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29198.3) | | 01/01/2004 | 31/12/2018 | |
| 53 New | 29,047 | 535,973 | 0.0 | IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29198.4) | | 01/01/2004 | 31/12/2018 | |
| 54 New | 29,763 | 537,053 | 0.0 | IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29198.5) | | 01/01/2004 | 31/12/2018 | |
| 55 New | 30,480 | 538,132 | 0.0 | IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29198.6) | | 01/01/2004 | 31/12/2018 | |
| 56 New | 31,197 | 539,211 | 0.0 | IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29198.7) | | 01/01/2004 | 31/12/2018 | |
| 57 New | 31,913 | 540,290 | 0.0 | IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29198.8) | | 01/01/2004 | 31/12/2018 | |
| 58 New | 32,630 | 541,370 | 0.0 | IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29198.9) | | 01/01/2004 | 31/12/2018 | |
| 59 New | 25,791 | 533,160 | 0.0 | IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29197.1) | | 01/01/2004 | 31/12/2018 | |
| 60 New | 26,504 | 534,272 | 0.0 | IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29197.2) | | 01/01/2004 | 31/12/2018 | |
| 61 New | 27,214 | 535,379 | 0.0 | IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29197.3) | | 01/01/2004 | 31/12/2018 | |
| 62 New | 27,924 | 536,487 | 0.0 | IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29197.4) | | 01/01/2004 | 31/12/2018 | |
| 63 New | 28,634 | 537,594 | 0.0 | IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29197.5) | | 01/01/2004 | 31/12/2018 | |
| 64 New | 29,344 | 538,702 | 0.0 | IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29197.6) | | 01/01/2004 | 31/12/2018 | |
| 65 New | 30,054 | 539,810 | 0.0 | IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29197.7) | | 01/01/2004 | 31/12/2018 | |
| 66 New | 30,763 | 540,917 | 0.0 | IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29197.8) | | 01/01/2004 | 31/12/2018 | |
| 67 New | 31,473 | 542,025 | 0.0 | IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29197.9) | | 01/01/2004 | 31/12/2018 | |

PARK - Main Result

Calculation: 20220902 IJV cumulatief

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 (B) 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 I-I hub: 150.0 m (TOT: 270.0 m) (29215)

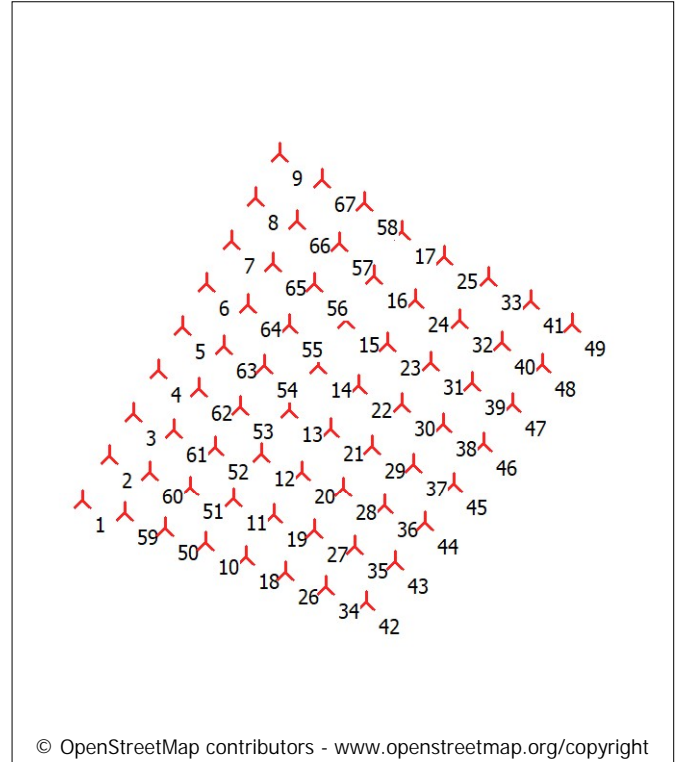
Scaler/wind data

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 |



▲ 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 ^{a)} | | Wind speed | | |
|-----------------|---------------------------|---|------------------|--------------------------------|----------------------------|---------------------------------|---------------|-----------------------|
| | | | | Capacity factor [%] | Mean WTG result [MWh/y] | Full load hours [Hours/year] | free [m/s] | wake reduced [m/s] |
| Wind farm | 4,336,913.1 | 5,465,639.8 | 20.7 | 49.2 | 64,730.0 | 4,315 | 10.1 | 8.9 |

^{a)} 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 | | Annual Energy | | Wind speed | |
|----------|-------|---------------------------|----------------|-------------------|--------------------|----------------|-----------------|----------|----------------|---------------|------------|---------------|
| | | | | | | | Creator | Name | Result [MWh/y] | Wake loss [%] | free [m/s] | reduced [m/s] |
| 1 No | IEA | Offshore Reference-15,000 | 15,000 | 240.0 | 150.0 | USER | 15 MW reference | 69,338.4 | 14.8 | 10.12 | 9.28 | |
| 2 No | IEA | Offshore Reference-15,000 | 15,000 | 240.0 | 150.0 | USER | 15 MW reference | 66,276.6 | 18.6 | 10.12 | 9.06 | |
| 3 No | IEA | Offshore Reference-15,000 | 15,000 | 240.0 | 150.0 | USER | 15 MW reference | 64,623.4 | 20.6 | 10.12 | 8.93 | |
| 4 No | IEA | Offshore Reference-15,000 | 15,000 | 240.0 | 150.0 | USER | 15 MW reference | 64,038.7 | 21.8 | 10.16 | 8.89 | |
| 5 No | IEA | Offshore Reference-15,000 | 15,000 | 240.0 | 150.0 | USER | 15 MW reference | 63,245.8 | 22.8 | 10.16 | 8.83 | |
| 6 No | IEA | Offshore Reference-15,000 | 15,000 | 240.0 | 150.0 | USER | 15 MW reference | 62,704.5 | 23.4 | 10.16 | 8.79 | |
| 7 No | IEA | Offshore Reference-15,000 | 15,000 | 240.0 | 150.0 | USER | 15 MW reference | 62,330.8 | 23.9 | 10.16 | 8.76 | |
| 8 No | IEA | Offshore Reference-15,000 | 15,000 | 240.0 | 150.0 | USER | 15 MW reference | 62,052.5 | 24.2 | 10.16 | 8.74 | |
| 9 No | IEA | Offshore Reference-15,000 | 15,000 | 240.0 | 150.0 | USER | 15 MW reference | 61,731.3 | 24.6 | 10.16 | 8.71 | |
| 10 No | IEA | Offshore Reference-15,000 | 15,000 | 240.0 | 150.0 | USER | 15 MW reference | 69,047.0 | 15.2 | 10.12 | 9.26 | |
| 11 No | IEA | Offshore Reference-15,000 | 15,000 | 240.0 | 150.0 | USER | 15 MW reference | 66,007.0 | 18.9 | 10.12 | 9.03 | |
| 12 No | IEA | Offshore Reference-15,000 | 15,000 | 240.0 | 150.0 | USER | 15 MW reference | 64,460.8 | 20.8 | 10.12 | 8.91 | |
| 13 No | IEA | Offshore Reference-15,000 | 15,000 | 240.0 | 150.0 | USER | 15 MW reference | 63,478.5 | 22.0 | 10.12 | 8.83 | |
| 14 No | IEA | Offshore Reference-15,000 | 15,000 | 240.0 | 150.0 | USER | 15 MW reference | 62,818.4 | 22.8 | 10.12 | 8.78 | |
| 15 No | IEA | Offshore Reference-15,000 | 15,000 | 240.0 | 150.0 | USER | 15 MW reference | 62,886.1 | 23.2 | 10.16 | 8.79 | |
| 16 No | IEA | Offshore Reference-15,000 | 15,000 | 240.0 | 150.0 | USER | 15 MW reference | 62,526.3 | 23.6 | 10.16 | 8.77 | |
| 17 No | IEA | Offshore Reference-15,000 | 15,000 | 240.0 | 150.0 | USER | 15 MW reference | 62,397.6 | 23.8 | 10.16 | 8.76 | |
| 18 No | IEA | Offshore Reference-15,000 | 15,000 | 240.0 | 150.0 | USER | 15 MW reference | 69,241.1 | 15.0 | 10.12 | 9.27 | |
| 19 No | IEA | Offshore Reference-15,000 | 15,000 | 240.0 | 150.0 | USER | 15 MW reference | 66,210.2 | 18.7 | 10.12 | 9.05 | |

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.

PARK - Main Result

Calculation: 20220902 IJV cumulatief

...continued from previous page

| WTG type | Valid | Manufact. | Type-generator | Power, rated [kW] | Rotor diameter [m] | Hub height [m] | Power curve | | Annual Energy | | Wind speed | |
|----------|-------|-----------|---------------------------|-------------------|--------------------|----------------|-------------|-----------------|----------------|---------------|------------|---------------|
| | | | | | | | 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 | 64,640.7 | 20.6 | 10.12 | 8.93 |
| 21 No | IEA | | Offshore Reference-15,000 | 15,000 | 240.0 | 150.0 | USER | 15 MW reference | 63,663.2 | 21.8 | 10.12 | 8.86 |
| 22 No | IEA | | Offshore Reference-15,000 | 15,000 | 240.0 | 150.0 | USER | 15 MW reference | 63,049.6 | 22.6 | 10.12 | 8.81 |
| 23 No | IEA | | Offshore Reference-15,000 | 15,000 | 240.0 | 150.0 | USER | 15 MW reference | 62,669.9 | 23.0 | 10.12 | 8.78 |
| 24 No | IEA | | Offshore Reference-15,000 | 15,000 | 240.0 | 150.0 | USER | 15 MW reference | 62,968.0 | 23.1 | 10.16 | 8.80 |
| 25 No | IEA | | Offshore Reference-15,000 | 15,000 | 240.0 | 150.0 | USER | 15 MW reference | 62,875.8 | 23.2 | 10.16 | 8.79 |
| 26 No | IEA | | Offshore Reference-15,000 | 15,000 | 240.0 | 150.0 | USER | 15 MW reference | 69,537.1 | 14.6 | 10.12 | 9.29 |
| 27 No | IEA | | Offshore Reference-15,000 | 15,000 | 240.0 | 150.0 | USER | 15 MW reference | 66,623.2 | 18.2 | 10.12 | 9.08 |
| 28 No | IEA | | Offshore Reference-15,000 | 15,000 | 240.0 | 150.0 | USER | 15 MW reference | 65,162.7 | 20.0 | 10.12 | 8.97 |
| 29 No | IEA | | Offshore Reference-15,000 | 15,000 | 240.0 | 150.0 | USER | 15 MW reference | 64,255.3 | 21.1 | 10.12 | 8.90 |
| 30 No | IEA | | Offshore Reference-15,000 | 15,000 | 240.0 | 150.0 | USER | 15 MW reference | 63,672.0 | 21.8 | 10.12 | 8.85 |
| 31 No | IEA | | Offshore Reference-15,000 | 15,000 | 240.0 | 150.0 | USER | 15 MW reference | 63,321.8 | 22.2 | 10.12 | 8.82 |
| 32 No | IEA | | Offshore Reference-15,000 | 15,000 | 240.0 | 150.0 | USER | 15 MW reference | 63,605.9 | 22.3 | 10.16 | 8.85 |
| 33 No | IEA | | Offshore Reference-15,000 | 15,000 | 240.0 | 150.0 | USER | 15 MW reference | 63,409.6 | 22.6 | 10.16 | 8.83 |
| 34 No | IEA | | Offshore Reference-15,000 | 15,000 | 240.0 | 150.0 | USER | 15 MW reference | 70,058.1 | 14.0 | 10.12 | 9.33 |
| 35 No | IEA | | Offshore Reference-15,000 | 15,000 | 240.0 | 150.0 | USER | 15 MW reference | 67,309.6 | 17.3 | 10.12 | 9.12 |
| 36 No | IEA | | Offshore Reference-15,000 | 15,000 | 240.0 | 150.0 | USER | 15 MW reference | 65,942.0 | 19.0 | 10.12 | 9.02 |
| 37 No | IEA | | Offshore Reference-15,000 | 15,000 | 240.0 | 150.0 | USER | 15 MW reference | 65,129.8 | 20.0 | 10.12 | 8.96 |
| 38 No | IEA | | Offshore Reference-15,000 | 15,000 | 240.0 | 150.0 | USER | 15 MW reference | 64,609.5 | 20.6 | 10.12 | 8.92 |
| 39 No | IEA | | Offshore Reference-15,000 | 15,000 | 240.0 | 150.0 | USER | 15 MW reference | 64,271.6 | 21.1 | 10.12 | 8.89 |
| 40 No | IEA | | Offshore Reference-15,000 | 15,000 | 240.0 | 150.0 | USER | 15 MW reference | 64,045.8 | 21.3 | 10.12 | 8.87 |
| 41 No | IEA | | Offshore Reference-15,000 | 15,000 | 240.0 | 150.0 | USER | 15 MW reference | 64,301.8 | 21.5 | 10.16 | 8.89 |
| 42 No | IEA | | Offshore Reference-15,000 | 15,000 | 240.0 | 150.0 | USER | 15 MW reference | 71,276.7 | 12.5 | 10.12 | 9.41 |
| 43 No | IEA | | Offshore Reference-15,000 | 15,000 | 240.0 | 150.0 | USER | 15 MW reference | 68,919.3 | 15.3 | 10.12 | 9.24 |
| 44 No | IEA | | Offshore Reference-15,000 | 15,000 | 240.0 | 150.0 | USER | 15 MW reference | 67,792.9 | 16.7 | 10.12 | 9.15 |
| 45 No | IEA | | Offshore Reference-15,000 | 15,000 | 240.0 | 150.0 | USER | 15 MW reference | 67,092.9 | 17.6 | 10.12 | 9.09 |
| 46 No | IEA | | Offshore Reference-15,000 | 15,000 | 240.0 | 150.0 | USER | 15 MW reference | 66,646.5 | 18.1 | 10.12 | 9.06 |
| 47 No | IEA | | Offshore Reference-15,000 | 15,000 | 240.0 | 150.0 | USER | 15 MW reference | 66,356.6 | 18.5 | 10.12 | 9.03 |
| 48 No | IEA | | Offshore Reference-15,000 | 15,000 | 240.0 | 150.0 | USER | 15 MW reference | 66,140.4 | 18.8 | 10.12 | 9.02 |
| 49 No | IEA | | Offshore Reference-15,000 | 15,000 | 240.0 | 150.0 | USER | 15 MW reference | 65,872.0 | 19.1 | 10.12 | 8.99 |
| 50 No | IEA | | Offshore Reference-15,000 | 15,000 | 240.0 | 150.0 | USER | 15 MW reference | 68,936.5 | 15.3 | 10.12 | 9.25 |
| 51 No | IEA | | Offshore Reference-15,000 | 15,000 | 240.0 | 150.0 | USER | 15 MW reference | 65,854.3 | 19.1 | 10.12 | 9.03 |
| 52 No | IEA | | Offshore Reference-15,000 | 15,000 | 240.0 | 150.0 | USER | 15 MW reference | 64,221.7 | 21.1 | 10.12 | 8.90 |
| 53 No | IEA | | Offshore Reference-15,000 | 15,000 | 240.0 | 150.0 | USER | 15 MW reference | 63,173.6 | 22.4 | 10.12 | 8.82 |
| 54 No | IEA | | Offshore Reference-15,000 | 15,000 | 240.0 | 150.0 | USER | 15 MW reference | 62,492.2 | 23.2 | 10.12 | 8.77 |
| 55 No | IEA | | Offshore Reference-15,000 | 15,000 | 240.0 | 150.0 | USER | 15 MW reference | 62,527.3 | 23.6 | 10.16 | 8.77 |
| 56 No | IEA | | Offshore Reference-15,000 | 15,000 | 240.0 | 150.0 | USER | 15 MW reference | 62,188.4 | 24.1 | 10.16 | 8.75 |
| 57 No | IEA | | Offshore Reference-15,000 | 15,000 | 240.0 | 150.0 | USER | 15 MW reference | 61,931.0 | 24.4 | 10.16 | 8.72 |
| 58 No | IEA | | Offshore Reference-15,000 | 15,000 | 240.0 | 150.0 | USER | 15 MW reference | 61,895.3 | 24.4 | 10.16 | 8.72 |
| 59 No | IEA | | Offshore Reference-15,000 | 15,000 | 240.0 | 150.0 | USER | 15 MW reference | 68,979.0 | 15.3 | 10.12 | 9.26 |
| 60 No | IEA | | Offshore Reference-15,000 | 15,000 | 240.0 | 150.0 | USER | 15 MW reference | 65,852.9 | 19.1 | 10.12 | 9.03 |
| 61 No | IEA | | Offshore Reference-15,000 | 15,000 | 240.0 | 150.0 | USER | 15 MW reference | 64,180.9 | 21.2 | 10.12 | 8.90 |
| 62 No | IEA | | Offshore Reference-15,000 | 15,000 | 240.0 | 150.0 | USER | 15 MW reference | 63,117.4 | 22.5 | 10.12 | 8.82 |
| 63 No | IEA | | Offshore Reference-15,000 | 15,000 | 240.0 | 150.0 | USER | 15 MW reference | 62,926.3 | 23.2 | 10.16 | 8.81 |
| 64 No | IEA | | Offshore Reference-15,000 | 15,000 | 240.0 | 150.0 | USER | 15 MW reference | 62,430.9 | 23.8 | 10.16 | 8.77 |
| 65 No | IEA | | Offshore Reference-15,000 | 15,000 | 240.0 | 150.0 | USER | 15 MW reference | 62,055.4 | 24.2 | 10.16 | 8.74 |
| 66 No | IEA | | Offshore Reference-15,000 | 15,000 | 240.0 | 150.0 | USER | 15 MW reference | 61,808.1 | 24.5 | 10.16 | 8.72 |
| 67 No | IEA | | Offshore Reference-15,000 | 15,000 | 240.0 | 150.0 | USER | 15 MW reference | 61,706.3 | 24.6 | 10.16 | 8.71 |

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 | 24,607 | 533,531 | 0.0 | IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29215) | 01/01/2004 | 31/12/2018 |
| 2 New | 25,399 | 534,732 | 0.0 | IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29196.2) | 01/01/2004 | 31/12/2018 |
| 3 New | 26,106 | 535,871 | 0.0 | IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29196.3) | 01/01/2004 | 31/12/2018 |
| 4 New | 26,813 | 537,010 | 0.0 | IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29196.4) | 01/01/2004 | 31/12/2018 |
| 5 New | 27,519 | 538,149 | 0.0 | IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29196.5) | 01/01/2004 | 31/12/2018 |
| 6 New | 28,225 | 539,289 | 0.0 | IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29196.6) | 01/01/2004 | 31/12/2018 |
| 7 New | 28,932 | 540,428 | 0.0 | IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29196.7) | 01/01/2004 | 31/12/2018 |

To be continued on next page...

PARK - Main Result

Calculation: 20220902 IJV cumulatief

...continued from previous page

| | | Dutch Stereo-RD/NAP 2008 | | | | | Calculation period | |
|--------|----------|--------------------------|-----|--|--|------------|--------------------|--|
| | X (east) | Y (north) | Z | Row data/Description | | Start | End | |
| | [m] | | | | | | | |
| 8 New | 29,638 | 541,568 | 0.0 | IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29196.8) | | 01/01/2004 | 31/12/2018 | |
| 9 New | 30,341 | 542,750 | 0.0 | IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29196.9) | | 01/01/2004 | 31/12/2018 | |
| 10 New | 27,998 | 532,308 | 0.0 | IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29199.1) | | 01/01/2004 | 31/12/2018 | |
| 11 New | 28,806 | 533,488 | 0.0 | IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29199.2) | | 01/01/2004 | 31/12/2018 | |
| 12 New | 29,615 | 534,668 | 0.0 | IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29199.3) | | 01/01/2004 | 31/12/2018 | |
| 13 New | 30,423 | 535,848 | 0.0 | IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29199.4) | | 01/01/2004 | 31/12/2018 | |
| 14 New | 31,232 | 537,029 | 0.0 | IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29199.5) | | 01/01/2004 | 31/12/2018 | |
| 15 New | 32,040 | 538,209 | 0.0 | IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29199.6) | | 01/01/2004 | 31/12/2018 | |
| 16 New | 32,849 | 539,389 | 0.0 | IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29199.7) | | 01/01/2004 | 31/12/2018 | |
| 17 New | 33,657 | 540,569 | 0.0 | IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29199.8) | | 01/01/2004 | 31/12/2018 | |
| 18 New | 29,099 | 531,880 | 0.0 | IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29200.1) | | 01/01/2004 | 31/12/2018 | |
| 19 New | 29,914 | 533,019 | 0.0 | IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29200.2) | | 01/01/2004 | 31/12/2018 | |
| 20 New | 30,729 | 534,158 | 0.0 | IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29200.3) | | 01/01/2004 | 31/12/2018 | |
| 21 New | 31,543 | 535,297 | 0.0 | IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29200.4) | | 01/01/2004 | 31/12/2018 | |
| 22 New | 32,358 | 536,437 | 0.0 | IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29200.5) | | 01/01/2004 | 31/12/2018 | |
| 23 New | 33,173 | 537,576 | 0.0 | IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29200.6) | | 01/01/2004 | 31/12/2018 | |
| 24 New | 33,987 | 538,715 | 0.0 | IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29200.7) | | 01/01/2004 | 31/12/2018 | |
| 25 New | 34,801 | 539,855 | 0.0 | IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29200.8) | | 01/01/2004 | 31/12/2018 | |
| 26 New | 30,201 | 531,452 | 0.0 | IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29201.1) | | 01/01/2004 | 31/12/2018 | |
| 27 New | 31,031 | 532,567 | 0.0 | IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29201.2) | | 01/01/2004 | 31/12/2018 | |
| 28 New | 31,861 | 533,683 | 0.0 | IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29201.3) | | 01/01/2004 | 31/12/2018 | |
| 29 New | 32,691 | 534,798 | 0.0 | IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29201.4) | | 01/01/2004 | 31/12/2018 | |
| 30 New | 33,521 | 535,914 | 0.0 | IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29201.5) | | 01/01/2004 | 31/12/2018 | |
| 31 New | 34,352 | 537,029 | 0.0 | IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29201.6) | | 01/01/2004 | 31/12/2018 | |
| 32 New | 35,182 | 538,145 | 0.0 | IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29201.7) | | 01/01/2004 | 31/12/2018 | |
| 33 New | 36,011 | 539,261 | 0.0 | IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29201.8) | | 01/01/2004 | 31/12/2018 | |
| 34 New | 31,302 | 531,023 | 0.0 | IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29202.1) | | 01/01/2004 | 31/12/2018 | |
| 35 New | 32,142 | 532,107 | 0.0 | IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29202.2) | | 01/01/2004 | 31/12/2018 | |
| 36 New | 32,981 | 533,190 | 0.0 | IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29202.3) | | 01/01/2004 | 31/12/2018 | |
| 37 New | 33,821 | 534,273 | 0.0 | IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29202.4) | | 01/01/2004 | 31/12/2018 | |
| 38 New | 34,660 | 535,357 | 0.0 | IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29202.5) | | 01/01/2004 | 31/12/2018 | |
| 39 New | 35,500 | 536,440 | 0.0 | IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29202.6) | | 01/01/2004 | 31/12/2018 | |
| 40 New | 36,339 | 537,524 | 0.0 | IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29202.7) | | 01/01/2004 | 31/12/2018 | |
| 41 New | 37,178 | 538,607 | 0.0 | IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29202.8) | | 01/01/2004 | 31/12/2018 | |
| 42 New | 32,400 | 530,595 | 0.0 | IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29203.1) | | 01/01/2004 | 31/12/2018 | |
| 43 New | 33,245 | 531,645 | 0.0 | IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29203.2) | | 01/01/2004 | 31/12/2018 | |
| 44 New | 34,087 | 532,695 | 0.0 | IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29203.3) | | 01/01/2004 | 31/12/2018 | |
| 45 New | 34,928 | 533,745 | 0.0 | IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29203.4) | | 01/01/2004 | 31/12/2018 | |
| 46 New | 35,770 | 534,795 | 0.0 | IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29203.5) | | 01/01/2004 | 31/12/2018 | |
| 47 New | 36,611 | 535,845 | 0.0 | IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29203.6) | | 01/01/2004 | 31/12/2018 | |
| 48 New | 37,452 | 536,895 | 0.0 | IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29203.7) | | 01/01/2004 | 31/12/2018 | |
| 49 New | 38,294 | 537,945 | 0.0 | IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29203.8) | | 01/01/2004 | 31/12/2018 | |
| 50 New | 26,896 | 532,736 | 0.0 | IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29198.1) | | 01/01/2004 | 31/12/2018 | |
| 51 New | 27,613 | 533,815 | 0.0 | IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29198.2) | | 01/01/2004 | 31/12/2018 | |
| 52 New | 28,330 | 534,894 | 0.0 | IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29198.3) | | 01/01/2004 | 31/12/2018 | |
| 53 New | 29,047 | 535,973 | 0.0 | IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29198.4) | | 01/01/2004 | 31/12/2018 | |
| 54 New | 29,763 | 537,053 | 0.0 | IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29198.5) | | 01/01/2004 | 31/12/2018 | |
| 55 New | 30,480 | 538,132 | 0.0 | IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29198.6) | | 01/01/2004 | 31/12/2018 | |
| 56 New | 31,197 | 539,211 | 0.0 | IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29198.7) | | 01/01/2004 | 31/12/2018 | |
| 57 New | 31,913 | 540,290 | 0.0 | IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29198.8) | | 01/01/2004 | 31/12/2018 | |
| 58 New | 32,630 | 541,370 | 0.0 | IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29198.9) | | 01/01/2004 | 31/12/2018 | |
| 59 New | 25,791 | 533,160 | 0.0 | IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29197.1) | | 01/01/2004 | 31/12/2018 | |
| 60 New | 26,504 | 534,272 | 0.0 | IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29197.2) | | 01/01/2004 | 31/12/2018 | |
| 61 New | 27,214 | 535,379 | 0.0 | IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29197.3) | | 01/01/2004 | 31/12/2018 | |
| 62 New | 27,924 | 536,487 | 0.0 | IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29197.4) | | 01/01/2004 | 31/12/2018 | |
| 63 New | 28,634 | 537,594 | 0.0 | IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29197.5) | | 01/01/2004 | 31/12/2018 | |
| 64 New | 29,344 | 538,702 | 0.0 | IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29197.6) | | 01/01/2004 | 31/12/2018 | |
| 65 New | 30,054 | 539,810 | 0.0 | IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29197.7) | | 01/01/2004 | 31/12/2018 | |
| 66 New | 30,763 | 540,917 | 0.0 | IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29197.8) | | 01/01/2004 | 31/12/2018 | |
| 67 New | 31,473 | 542,025 | 0.0 | IEA Offshore Reference 15000 240.0 !-! hub: 150.0 m (TOT: 270.0 m) (29197.9) | | 01/01/2004 | 31/12/2018 | |