



EMD International A/S
www.emd.dk

Energy Island North Sea

Revalidation Note on Site Wind Conditions Assessment Energy Island North Sea

5 APRIL 2024





Energy Island North Sea, Revalidation Note on Site Wind Conditions Assessment

RECIPIENT

Energinet
Tonne Kjærsvæj 65
7000 Fredericia
Denmark
Attn. Guillaume Mougin

DATE

05 April 2024

PREPARED BY

EMD International A/S
Niels Jernes Vej 10
DK- 9220 Aalborg
T: + 45 69 16 48 50
E: emd@emd.dk

PRINCIPAL CONSULTANT

Thomas Sørensen
Lasse Svenningsen
Stefan Condurache
EMD-DK

APPROVED BY

Wiebke Langreder
EMD-DK

DOCUMENT

240405_22306_C_TS_2

CLASSIFICATION

Client's Discretion



DOCUMENT REVISIONS

Revision	Date	Report no.	Chapter(s)	Description of Purpose/Changes
1	2024-03-11	240311_22306_C_TS_1	All	Revalidation report
1	2024-04-05	240405_22306_C_TS_2	All	Revalidation report, final

KEY TO DOCUMENT CLASSIFICATION

Classification	
Strictly Confidential:	Recipients only
Private and Confidential:	For disclosure to individuals directly concerned within the recipient's organisation
Commercial in Confidence:	Not to be disclosed outside the recipient's organisation
Client's Discretion:	Distribution at the discretion of the client subject to contractual agreement
Published:	Available to the general public

LIABILITIES

EMD International A/S (EMD) does not warrant, guarantee or make any representations regarding the delivered consultancy material caused by errors or omissions in the delivered data. EMD cannot be held liable for erroneous results caused by inaccuracy, limitations or malfunctioning of models or software used.

For any claims whatsoever related to the subject matter of this consultancy job, the liability of EMD for actual damages, regardless of the form of action, shall be limited to the total amount paid to EMD for the services provided as part of this consultancy job. Separate insurance cover for extended liability can be provided upon request, but at the expense of the Client.





Executive Summary

Objective

The objective of this technical note is to revalidate the site wind conditions presented in the main report "Site Wind Conditions Assessment, North Sea" issued in 2023 by EMD for Energinet in relation to the Energy Island project in the North Sea [1].

Background

Energinet has commissioned the construction of an artificial island in the North Sea, which will serve as a hub for offshore wind farms. The Energy Island project is expected to generate significant amounts of renewable energy and reduce carbon emissions. As wind is the primary source of energy for the project, a thorough assessment of the site wind conditions is crucial for its successful implementation.

Methodology

The revalidation note updates the site wind conditions assessment, based on 2 years of onsite measurements using floating LiDAR systems (FLS) in the North Sea Energy Island Offshore Wind farm Zone (OWF) and delivers the site wind condition parameters according to IEC 61400-1 [2], IEC 61400-3-1 [3] and in addition refers to Eurocode EN1991-1-4 [4] including the Danish annex [5], DS 472 ed.2 [6] and IEC 61400-15-1 CD [7].

The site wind conditions assessment is intended to serve as basis for:

- Preliminary site-suitability analysis of the Wind Turbine Generator (WTG) and Rotor Nacelle Assembly (RNA)
- Front-End Engineering and Design (FEED) of offshore support structures for WTGs and other structures.

The report presents the additional data obtained for the site with a recalculation of the site parameters affected by the extension of the measurement period. Methodologies, calculations and results unchanged from the main report are not presented in this note.

EMD has become aware that the campaign configuration was changed during the measurement period with three different buoys interchanged on the two lots. The operational history is clarified.

Calculations are done in windPRO 4.0, developed by EMD International A/S.



Results

The site condition parameters are summarized in Table 1.

Table 1. Summary table of Site Wind Condition parameters at the three selected positions on the North Sea Energy Island OWF zone. All values refer to 150 m height above sea level (ASL) and are based on 2 year of onsite measurements.

PARAMETER	POSITION 1	POSITION 2	POSITION 3
Mean wind speed	10.94 m/s	10.86 m/s	10.97 m/s
Weibull distribution, A parameter (scale)	12.35 m/s	12.26 m/s	12.38 m/s
Weibull distribution, k parameter (shape)	2.36	2.35	2.36
Normal wind profile power law exponent	0.085	0.085	0.085
Turbulence intensity mean value (TI_μ) at a 10-min average wind speed of 15m/s*	5.1%	5.1%	5.1%
Turbulence intensity standard deviation (TI_σ) at a 10-min average wind speed of 15m/s*	2.0%	2.0%	2.0%
Turbulence intensity 90% quantile at a 10-min average wind speed of 15m/s*	7.7%	7.7%	7.7%
Mean air density	1.23 kg/m ³	1.23 kg/m ³	1.23 kg/m ³
Mean air temperature	9.0°C	9.0°C	9.0°C
50-year extreme wind speed	51.8 m/s	51.8 m/s	51.8 m/s
1-year extreme wind speed	29.1 m/s	29.1 m/s	29.1 m/s
Wind shear for extreme wind speed extrapolation	0.11	0.11	0.11
Characteristic turbulence intensity at 50-year extreme wind speed	13.0%	13.0%	13.0%
Air density for extreme wind	1.24 kg/m ³	1.24 kg/m ³	1.24 kg/m ³

*Turbulence values at other wind speeds can be found in Appendix D.

The datasets produced by this study are available in a data package prepared for Energinet.



Recommendations

EMD recommends investigating if measurement data logged on WS170 during deployment at Lot 2 April to June 2023 can be recovered. These data, if recovered, would close a 3-month gap in the data series.



Contents

Executive Summary.....	4
1 Introduction	12
2 Additional Data for Revalidation	14
3 On-Site Floating LiDAR Measurements	15
3.1 Buoy Positions	16
3.2 Instrumentation	17
3.3 Operation History.....	17
3.4 Post-Processing of Data.....	18
3.5 Data Analysis	21
3.6 Measurement Uncertainty.....	26
4 Reference Data	29
5 Long-term Correction	30
5.1 Review of Reference Data	30
5.2 Correlation between Onsite and Reference Data	30
5.3 Long-Term Wind Climate	34
6 Comparison of Wind Models	39
6.1 Uncertainty of Primary Wind Model.....	44
7 Flow Modelling	46
7.1 Wind Resource Map	46
7.2 Wind Resource Model for Position 3	47
8 Siting Parameters.....	49
8.1 Normal Wind Conditions	49
8.2 Summary Table of Siting Parameters	59
9 Data Package	60
9.1 Raw Buoy Data	60
9.2 Filtered and Repaired LiDAR Data.....	61
9.3 Long-term Corrected LiDAR data	63
9.4 EMD-WRF Dataset.....	63
9.5 Turbulence Data	64
9.6 Wind Resource Map/Gradient File.....	65
10 References.....	66
Appendix A. Verification and Classification Uncertainty	67
Appendix B. Filtered and Repaired Dataset: Position 1 (Lot 1), Position 2 (Lot 2)	70
Appendix C. Long-term Corrected Dataset: Position 1 (Lot 1), Position 2 (Lot 2), Position 3 ...	115
Appendix D. Normal Turbulence Model (150 m)	162



List of Figures

Figure 1. Relative position of Lot 2 and Lot 2B.....	16
Figure 2. Directional distribution at selected heights of LiDAR measurements, Lot 1.....	23
Figure 3. Directional distribution at selected heights of LiDAR measurements, Lot 2	24
Figure 4. Diurnal wind speed variation, Lot 2.....	25
Figure 5. Diurnal temperature variation, Lot 1, 2 years (red), Lot 2, 1 year (green) and Lot 2, 2 years (purple).	25
Figure 6. Monthly mean wind speed, Lot 2.....	26
Figure 7. Monthly mean temperature, Lot 1, 2 years (red), Lot 2, 1 year (green) and Lot 2, 2 years (purple).	26
Figure 8. Wind direction roses for the concurrent period of LIDAR (blue) and EMD-WRF (red) data. Left: Lot 1, right: Lot 2.....	31
Figure 9. Wind direction roses for EMD-WRF data. Deep red represents the entire long-term period, light red represents the period concurrent with LIDAR measurements. Left: Concurrent period with Lot 1, right: Concurrent period with Lot 2.	32
Figure 10. Left: Wind direction distribution of long-term corrected LiDAR data (Lot 1) at 150 m. Right: Energy distribution of long-term corrected LiDAR data (Lot 1) at 150 m. Both are divided in wind speed intervals.	36
Figure 11. Left: Wind direction distribution of long-term corrected LiDAR data (Lot 2) at 150 m. Right: Energy distribution of long-term corrected LiDAR data (Lot 2) at 150 m. Both are divided in wind speed intervals.	36
Figure 12. Diurnal wind speed observed (purple), long-term corrected with 1 year of observations (red) and long- term corrected after 2 years of observations, Lot 2.	37
Figure 13. Seasonal variation of long-term corrected dataset (red) and observed dataset (purple) at 150 m, Lot 2. The long-term seasonal variation based on 1 year of measurements (green) is identical to the new seasonal variation.	38
Figure 14. Wind speed probability function for the five datasets at Position 1, Lot 1. Primary model based on 2 years (green), Primary model based on 1 year (red), Thor model (pink), Fino3 (purple) and Harald B (blue).	40
Figure 15. Wind speed probability function for the five datasets at Position 2, Lot 2. Primary model based on 2 years (green), Primary model based on 1 year (red), Thor model (pink), Fino3 (purple) and Harald B (blue).	41
Figure 16. Directional distribution of the five long-term wind models at Position 1, Lot 1. Primary model based on 2 years (green), Primary model based on 1 year (red), Thor model (pink), Fino3 (purple) and Harald B (blue).	42



Figure 17. Directional distribution of the five long-term wind models at Position 2, Lot 2. Primary model based on 2 years (green), Primary model based on 1 year (red), Thor model (pink), Fino3 (purple) and Harald B (blue).	43
Figure 18. Wind resource map for the Energy Island North Sea OWF.....	46
Figure 19. Location of measurement points and the selected Position 3.....	47
Figure 20. Observed wind shear versus wind speed (0.5 m/s bins) at the two North Sea Energy Island buoys, Lot 1 (right) and Lot 2 (left). For both buoys the wind shear clearly levels off at around 0.11 for wind speeds above ca. 15m/s. At lower wind speeds the wind shear increases linearly with wind speed.....	57



List of Tables

Table 1. Summary table of Site Wind Condition parameters at the three selected positions on the North Sea Energy Island OWF zone. All values refer to 150 m height above sea level (ASL) and are based on 2 year of onsite measurements.....	5
Table 2. List of Site Wind Conditions Parameter.....	12
Table 3. Measurement stations considered in the revalidation note, measurement heights ASL and period.....	14
Table 4. List of documentation received on the Floating LiDAR Systems (FLS) in addition to documentation listed in the main report.	15
Table 5. Locations of Lot 2 and Lot 2B.....	16
Table 6. Gantt chart of buoy deployment on Lot 1 and Lot 2. Green color marks which buoy is provides data on site. Yellow color marks the presence of buoy not providing data on site.	17
Table 7. Correlation coefficient, r, between Lot 1 and Lot 2 measurements at the same height. Correlation based on 2 years of concurrent data.	19
Table 8. Data substitution, Lot 1	20
Table 9. Data substitution, Lot 2	20
Table 10. Weibull parameters of the repaired datasets, Lot 1.....	21
Table 11. Weibull parameters of the repaired datasets, Lot 2.....	22
Table 12. Measurement uncertainty of buoy mounted LiDARs.....	27
Table 13. Wind speed measurement uncertainty at 150 m ASL.	28
Table 14. Correlation coefficient r between the reference data (EMD-WRF, 150 m) and the onsite floating LiDAR data at 150 m ASL. Comparison between 1 year data reported in the main report and the addition of a second year of data.....	31
Table 15. Prediction test using a 24-hour slicing method and a self-test using the entire concurrent period. The parameter presented is over-prediction of production in percent. (Lot 1 - 150 m data). Comparison between 1 year concurrent data reported in the main report and 2 years of concurrent data.	33
Table 16. Prediction test using a 24-hour slicing method and a self-test using the entire concurrent period. The parameter presented is over-prediction of production in percent. (Lot 2 - 150 m data). Comparison between 1 year concurrent data reported in the main report and 2 years of concurrent data.	33
Table 17. Weibull parameters of the long-term wind data used, Lot 1	34
Table 18. Weibull parameters of the long-term wind data used, Lot 2.	35
Table 19. Comparison of model results at Position 1, Lot 1 150 m ASL.	39
Table 20. Comparison of model results at Position 2, Lot 2 150 m ASL.	40
Table 21. Measurement uncertainty.....	44



Table 22. Combined uncertainty on long-term wind data. Uncertainty given as one standard deviation wind speed.	45
Table 23. Coordinates for Position 3	47
Table 24. Weibull parameters of the long-term wind data, Position 3.....	48
Table 25. Turbine specific information used for siting parameters.	49
Table 26. Weibull distribution parameters based on long-term corrected LIDAR data at 150 m ASL, Position 1 – Lot 1. Wind speeds are derived from the Weibull distribution.....	50
Table 27. Weibull distribution parameters based on long-term corrected LIDAR data at 150 m ASL, Position 2 – Lot 2. Wind speeds are derived from the Weibull distribution.....	51
Table 28. Weibull distribution parameters based on long-term corrected LIDAR data at 150 m ASL, Position 3. Wind speeds are derived from the Weibull distribution.	52
Table 29. Site specific omnidirectional wind shear exponent by season. Shear values in italics are based on first year of measurements.	53
Table 30. Site specific omnidirectional wind shear exponent.....	53
Table 31. Temperature assessment at Position 1 – Lot 1 (150m).....	55
Table 32. Temperature assessment at Position 2 – Lot 2 (150m).....	55
Table 33. Extreme wind speed results (150 m).	56
Table 34. Extreme wind speed alternative results using different methods (150 m).....	56
Table 35. Summary table of siting parameters (150m).....	59
Table 36. Column explanation for data time series.	62
Table 37. Column explanation for EMD-WRF data time series.	64



1 Introduction

EMD International A/S has been tasked by Energinet to provide a revalidation note, which complement the initial site wind conditions assessment [1] for the Energy Island North Sea.

The objectives of the site wind condition assessment are outlined in the Scope of Services Site Wind Conditions Assessment [8] provided by Energinet and aims for a site wind condition assessment adequate for a preliminary site-suitability analysis for the Wind Turbine Generator (WTG) and Rotor Nacelle Assembly as well as input for Front-End Engineering and Design (FEED) of offshore support structures for WTGs and other structures.

The parameters for the wind condition assessment are listed in Table 2 and are defined according to IEC61400-1 [2], IEC 61400-3-1 [3] and IEC 61400-15-1 CD [7].

Table 2. List of Site Wind Conditions Parameter.

SITE WIND PARAMETERS AT 150 M MSL	
Normal Conditions Parameters	Extreme Conditions Parameters
Mean wind speed	Extreme Turbulence Model (ETM) at hub height
Omni-directional Weibull wind speed distribution parameters	Wind profile for extreme wind speed extrapolation with elevation
Wind profile for wind speed extrapolation with elevation	Wind profile for integrated load analysis
Wind profile for Integrated Load Analysis, Normal Wind Profile (NWP)	Turbulence intensity
Normal Turbulence Model (NTM)	Mean air density
Mean air density	Maximum 10-minute mean wind speed for a 50-year EWM
Mean air temperature	

The site wind condition parameter list is populated through a wind condition and resource assessment based on onsite floating LiDAR data from two locations and mesoscale WRF data. This model is supported by a selection of secondary stations located within meaningful distance of the North Sea Energy Island wind farm zone.

The parameter list in this revalidation note is updated with results from the extended wind measurement campaign.



Beside the present report, measurement data as well as mesoscale and long-term corrected datasets are provided in the form of time series text files.

All elevations throughout are referred to as Above Sea Level (ASL) with the reference sea level being the mean sea level.

A naming convention is used for turbulence conditioned on wind speed where 'mean turbulence' is the mean of 10min wind speed standard deviations (σ) within a wind speed bin. The 'standard deviation of turbulence' is the standard deviation across 10min wind speed standard deviations ($\sigma\sigma$) in a wind speed bin. Both these quantities (mean and standard deviation of turbulence) may be normalized to the wind speed of the wind speed bin in question, in this case the normalized turbulence is referred to as Turbulence Intensity (TI), either mean or standard deviation.

FLS is used as abbreviation for Floating LiDAR System.



2 Additional Data for Revalidation

Since the issue of the main report, "Site Wind Conditions Assessment, Baltic Sea", the following data has been made available to EMD.

1. Measurement data from the buoy on Lot 1 until 22/11/2023
2. Measurement data from the buoy on Lot 2 until 22/11/2023

In addition, through the event records provided by Fugro, EMD has become aware that each of the Lots have not been covered by a single buoy, but that a third buoy, WS191 has been in use. Throughout the measurement campaign the buoy used on each of the lots have changed. Consequently, labelling each lot through the name of the buoy must be abandoned and, in the revalidation note, they are labelled exclusively through lot or position number.

Table 3. Measurement stations considered in the revalidation note, measurement heights ASL and period.

NAME	TYPE	MEASUREMENT HEIGHT [M] ASL	MEASUREMENT PERIOD	LENGTH [YEARS]
Lot 1	LiDAR (FLS)	30 - 270	15/11/2021 – 15/11/2022	2
Lot 2	LiDAR (FLS)	30 - 270	15/11/2021 – 15/11/2023	2



3 On-Site Floating LiDAR Measurements

Energinet has commissioned floating LiDAR measurements at two locations on site, operated by Fugro Norway AS. The measurement points are labelled Lot 1 and Lot 2. These two locations are in the following also referred to as Position 1 and Position 2. Three LiDAR buoys were deployed: WS170, WS181 and WS191. A plan for which buoy was operating on what location is presented in section 3.3. In addition to the data used in the main report, EMD has received measurement data as monthly batches covering the period 15/11/2022 to 15/11/2023 for Lot 1 and Lot 2.

The campaign was commenced on 15/11/2021 and ended on 15/11/2023, after 2 years of operation.

In addition to the documentation listed in the main report [1], EMD has received documentation as listed in Table 4.

Motion corrected turbulence data has been received for Lot 1 and Lot 2 but has not been used in this study, as explained later.

EMD has received documentation and measurements beyond those mentioned here, but those are not used directly in this study.

Table 4. List of documentation received on the Floating LiDAR Systems (FLS) in addition to documentation listed in the main report.

TITLE	SOURCE	DATE	CONTENT	REFERENCE
Energy Islands – Floating LiDAR Measurements, Monthly report (Lot 1 + 2, 24 instalments on each lot)	Fugro	25/03/2022 – 02/01/2024	Monthly reports on operation and measurements. Reports available until October - November 2023	[9]
Summary Reports of Major events (Lot 1 + 2, 8 instalments)	Fugro	21/06/2022 – 23/06/2023	8 event logs describing event with impact on measurements	[10]
ZX862, Independent analysis and reporting of ZX LiDARs performance verification executed by Zephir Ltd. at the UK Remote Sensing Test Site	DNV	12/11/2021	LiDAR verification report for ZX862, mounted on WS191	[11]
WS191, Independent performance verification of Seawatch Wind LiDAR Buoy at Frøya, Norway	DNV	04/04/2022	Pre-deployment verification document for WS191 (spare buoy)	[12]



3.1 Buoy Positions

The buoy deployment positions for Lot 1 and 2 were presented in the main report [1].

A secondary position was temporarily used in the period 13/06/2022 to 30/11/2022 labelled Lot 2B. The coordinates for Lot 2 and Lot 2B are listed in Table 5.

The position of Lot 2B relative to Lot 2 is presented in Figure 1. Lot 2B is 195m southwest of Lot 2. For all practical purposes, the two locations can be considered identical, and the difference will not be addressed any further.

Table 5. Locations of Lot 2 and Lot 2B.

BUOY	UTM WGS84, Zone 32		GEOGRAPHICAL COORDINATES WGS84	
Lot 2	342,856	6,247,314	6.4574°	56.3444°
Lot 2B	342,733	6,247,163	6.4555°	56.3430°

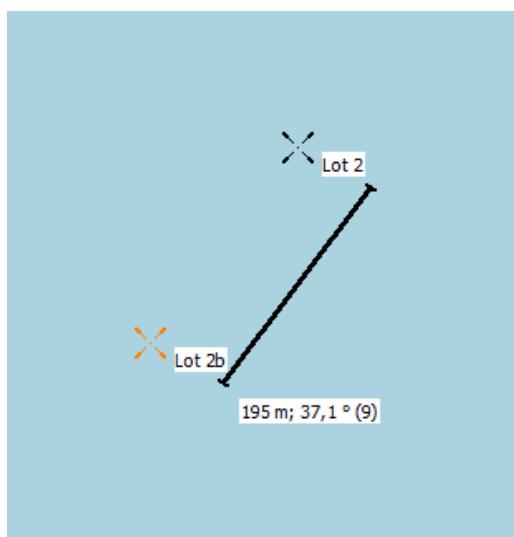


Figure 1. Relative position of Lot 2 and Lot 2B.



3.2 Instrumentation

The instrumentation of the Fugro Seawatch buoys is described in the main report.

A spare buoy, WS191 was deployed on site and is described in the following. The instrumentation on the WS191 is identical to that of WS170 and WS181.

3.2.1 LiDAR (on WS191)

The LiDAR (ZX862 on WS191) was verified at the onshore test site Pershore, UK, which is operated by DNV-GL [11].

Once mounted on the buoys, the LiDAR was verified again by DNV. WS191 was verified at Frøya Norway [12] against an onshore LiDAR of the brand ZephIR Z300 ground-mounted on the island of Frøya.

The information from the classification and the verification was used to assess the measurement uncertainty of the LiDAR.

3.3 Operation History

EMD has become aware of a more complex operation history than was presented in the main report [1]. This includes changes to which buoys were operating on the two lots at different periods. The Gantt chart in Table 6 provides overview of the measurement campaign.

Table 6. Gantt chart of buoy deployment on Lot 1 and Lot 2. Green color marks which buoy is providing data on site. Yellow color marks the presence of buoy not providing data on site.

		2021		2022										2023												
		Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov
Lot 1	WS170	◆							◆									◆			◆					
	WS191							◆											◆		◆	◆				
Lot 2	WS181	◆																	◆			◆				
	WS170								◆										◆		◆					

3.3.1 Lot 1

- 15/11/2021 WS170 deployed at Lot 1.
22/05/2022 WS170 is recovered and replaced by WS191
16/02/2023 Severe storm causes data loss. WS191 reports no further data until it is recovered.
22/04/2023 WS191 is recovered and replaced by WS170
26/04/2023 Communication interruption. WS170 reports no further data until it is recovered. The monthly reports state that data was stored and will be added to the final dataset, but the FLS has not yet been recovered due to unsuitable weather since November 2023.
13/06/2023 WS170 is recovered and replaced by WS191



15/11/2023 WS191 remains at sea - weather forecast is being monitored to find a suitable weather window for buoy recovery. End of measurement campaign

3.3.2 Lot 2

15/11/2021 WS181 deployed at Lot 2.

13/07/2022 WS170 is deployed at Lot 2B. This is now the primary LiDAR source, but WS181 remains operational until recovered. As there is no hiatus in the LiDAR data on 13/07/2022 it is uncertain whether submitted LiDAR data are from WS170 or WS181.

26/10/2022 WS181 recovered.

30/11/2022 WS170 is recovered and replaced by WS181 at Lot 2.

16/02/2023 Severe storm damages WS181. From this point gaps becomes frequent until no more data are recorded after 14/04/2023.

22/04/2023 WS181 is recovered. No buoy at Lot 2 until 13/06/2023

13/06/2023 WS181 is redeployed.

27/06/2023 WS181 unintentionally dragged off the site. Data removed for off-site period.

05/07/2023 WS181 redeployed at Lot 2.

15/11/2023 WS181 remains at sea - weather forecast is being monitored to find a suitable weather window for buoy recovery. End of measurement campaign

3.4 Post-Processing of Data

3.4.1 Quality Control and Filtering Performed by Fugro

The quality control and filtering performed by Fugro is identical to that described in the main report [1].

The additional files are provided in the data package (section 9).

3.4.2 Quality Control and Filtering Performed by EMD

The quality control and filtering by EMD follows the method described in the main report [1].

For the second year of the campaign, the following data are removed.

At Lot 2, data from the period 17/03/2023 to 14/4/2023 was removed. After the 16/2/2023 storm data are suffering increasing number of gaps. From 17/03/2023 the gaps become so common that is a risk of potential bias in the data and they are removed.



3.4.3 Recovery Rate and Data Substitution

Data repair on the second year LiDAR data are conducted in the same manner as described in the main report [1].

Data on Lot 1 and 2 are shear extrapolated from a lower height to fill in gaps using a shear matrix. The source heights and heights used to derive the shear matrix are presented in Table 8 and Table 9.

Horizontal repair was conducted as described in the main report. The transfer function to translate data from Lot 1 to Lot 2 and from Lot 2 to Lot 1 are based on 2 years of data as opposed to 1 year of data in the main report. The correlation coefficient is marginally better with 2 years of data (Table 7).

While the data repair results in an improvement of recovery rate, it leaves a 2-month gap from mid-March 2023 to mid-May 2023 without data on both lots.

The recovery rate after data repair has dropped from 98.4% at 150m height (both lots) after year 1 to 86.7% (Lot 1) and 86.6% (Lot 2) after year 2.

Table 7. Correlation coefficient, r, between Lot 1 and Lot 2 measurements at the same height. Correlation based on 2 years of concurrent data.

MEASUREMENT HEIGHT [M]	CORRELATION COEFFICIENT, R [%]
30 - 60	95
100 - 200	96
240 - 270	97



Table 8. Data substitution, Lot 1

REPAIRED HEIGHT [M]	60	90	100	120	150	180	200	240	270
Source height [m]	40	60	90	100	120	150	180	200	240
Shear matrix heights [m]	40, 60, 90	60, 90, 100	90, 100, 120	100, 120, 150	120, 150, 180	150, 180, 200	180, 200, 240	200, 240, 270	200, 240, 270
Recovery rate before repair	77.8%	77.1%	77.0%	76.9%	76.6%	76.4%	76.3%	76.0%	75.8%
Recovery rate after shear repair	78.1%	77.9%	77.2%	77.1%	76.9%	76.7%	76.5%	76.4%	76.1%
Recovery rate after horizontal repair	87.7%	87.4%	86.9%	86.8%	86.7%	86.5%	86.3%	86.2%	86.0%
Share of repaired data	11.3%	11.8%	11.4%	11.4%	11.6%	11.7%	11.6%	11.8%	11.9%

Table 9. Data substitution, Lot 2

REPAIRED HEIGHT [M]	60	90	100	120	150	180	200	240	270
Source height [m]	40	60	90	100	120	150	180	200	240
Shear matrix heights [m]	40, 60, 90	60, 90, 100	90, 100, 120	100, 120, 150	120, 150, 180	150, 180, 200	180, 200, 240	200, 240, 270	200, 240, 270
Recovery rate before repair	84.7%	81.5%	81.4%	81.3%	81.0%	80.7%	80.5%	80.1%	79.9%
Recovery rate after shear repair	85.0%	84.8%	81.8%	81.7%	81.6%	81.3%	81.0%	80.9%	80.6%
Recovery rate after horizontal repair	87.7%	87.6%	87.0%	86.8%	86.7%	86.5%	86.3%	86.2%	86.1%
Share of repaired data	3.4%	7.0%	6.4%	6.3%	6.6%	6.7%	6.7%	7.1%	7.2%



3.5 Data Analysis

EMD has combined the data files, forming time series of wind speed, wind direction, turbulence intensity and data package count for each measurement height. For 4 m height ASL, temperature, relative humidity and pressure is added. The signals for maximum wind speed and vertical wind speed are only added to the 150 m dataset.

3.5.1 Wind Speed

The mean wind speed on the LiDAR measurements is calculated both as arithmetic mean wind speed and through a Weibull fit as Weibull-derived mean wind speed. The Weibull fitting is done in windPRO using an energy conservation condition [13].

The following Table 10 and Table 11 summarizes the resulting wind speeds before and after data substitution.

Table 10. Weibull parameters of the repaired datasets, Lot 1.

HEIGHT [M]	PERIODS [MONTHS]	ARITHMETIC MEAN WIND SPEEDS, BEFORE DATA SUBSTITUTION [M/S]	ARITHMETIC MEAN WIND SPEEDS AFTER DATA SUBSTITUTION [M/S]	WEIBULL MEAN [M/S]	WEIBULL – A PARAMETER	WEIBULL – K PARAMETER
4	24	8.04	8.04	8.08	9.12	2.32
30	24	9.69	9.60	9.57	10.80	2.24
40	24	9.90	9.81	9.79	11.06	2.25
60	24	10.25	10.15	10.15	11.46	2.26
90	24	10.61	10.51	10.55	11.90	2.30
100	24	10.70	10.62	10.66	12.04	2.31
120	24	10.87	10.79	10.84	12.24	2.30
150	24	11.07	11.00	11.04	12.47	2.28
180	24	11.23	11.15	11.19	12.63	2.24
200	24	11.33	11.25	11.27	12.73	2.23
240	24	11.48	11.39	11.40	12.87	2.19
270	24	11.59	11.49	11.48	12.96	2.17



Table 11. Weibull parameters of the repaired datasets, Lot 2.

HEIGHT [M]	PERIODS [MONTHS]	ARITHMETIC MEAN WIND SPEEDS, BEFORE DATA SUBSTITUTION [M/S]	ARITHMETIC MEAN WIND SPEEDS AFTER DATA SUBSTITUTION [M/S]	WEIBULL MEAN [M/S]	WEIBULL – A PARAMETER	WEIBULL – K PARAMETER
4	24	8.20	8.20	8.25	9.30	2.37
30	24	9.50	9.52	9.47	10.70	2.22
40	24	9.71	9.73	9.70	10.95	2.23
60	24	10.06	10.07	10.06	11.36	2.26
90	24	10.47	10.42	10.46	11.81	2.29
100	24	10.57	10.53	10.58	11.95	2.30
120	24	10.74	10.71	10.76	12.14	2.30
150	24	10.95	10.90	10.95	12.36	2.28
180	24	11.11	11.06	11.10	12.53	2.24
200	24	11.20	11.15	11.17	12.61	2.22
240	24	11.35	11.30	11.29	12.75	2.18
270	24	11.45	11.39	11.38	12.85	2.16

Further details on the directional wind speed and Weibull distribution can be found in Appendix B.

3.5.2 Turbulence Intensity

Standard deviation of wind speed and hence turbulence intensity from LiDAR measurements are not immediately comparable to those of cup anemometers. The standards referred to in this study do not recognize turbulence intensity measurements from LiDARs and the observed turbulence data from WS170 and WS181 are therefore not used or documented here. They are however included in the data package produced as part of the deliverables.

The motion corrected turbulence intensity data provided by Fugro has not been used for the revalidation of Energy Island North Sea Site Conditions Assessment. The purpose of analysing motion corrected turbulence data is to document an expected difference between North Sea and Baltic Sea floating LiDAR turbulence in support of the Baltic Sea turbulence model. The turbulence model for the Energy Island North Sea is well supported and a comparison to the Energy Island Baltic Sea turbulence model is unnecessary.

3.5.3 Wind Direction

The wind direction distribution for the 2 years of measurements is presented in Figure 2 and Figure 3. There is a rotation of the wind direction clockwise with increasing height at Lot 1 of 5.7° from 30 m to 270 m, amounting to a rate of 0.024 deg/m. At Lot 2, the rotation is 5.5° from 30 m to 270 m, amounting to a rate of 0.023 deg/m. This is normal and consistent with the findings of the main report.

The direction distribution for each height can be found in Appendix B.

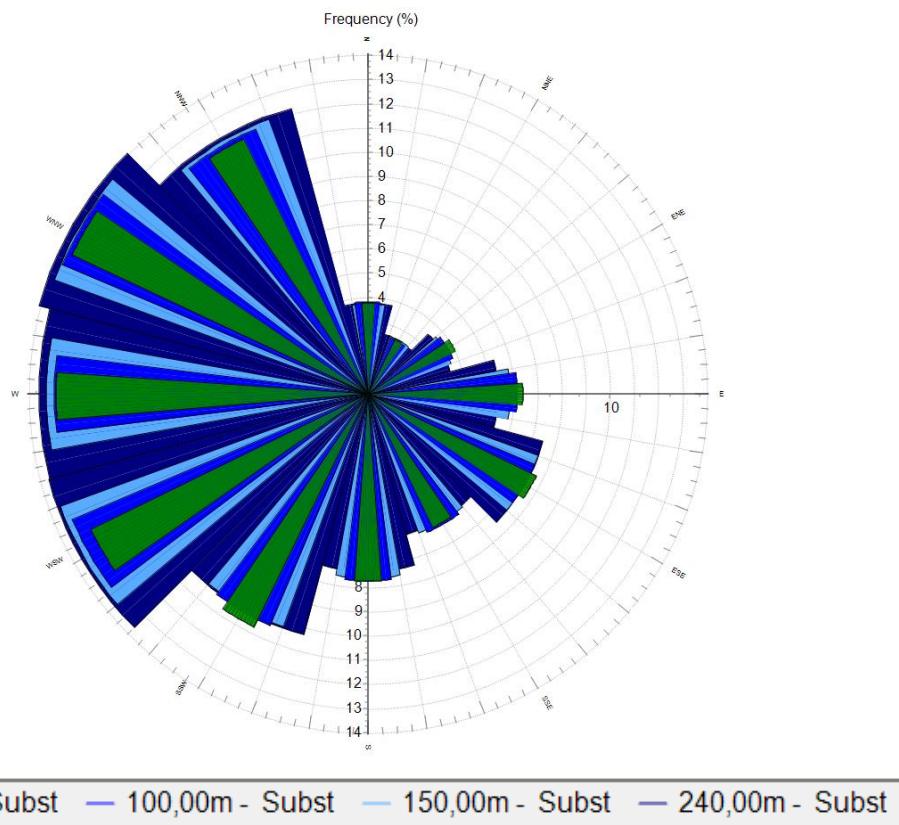


Figure 2. Directional distribution at selected heights of LiDAR measurements, Lot 1.

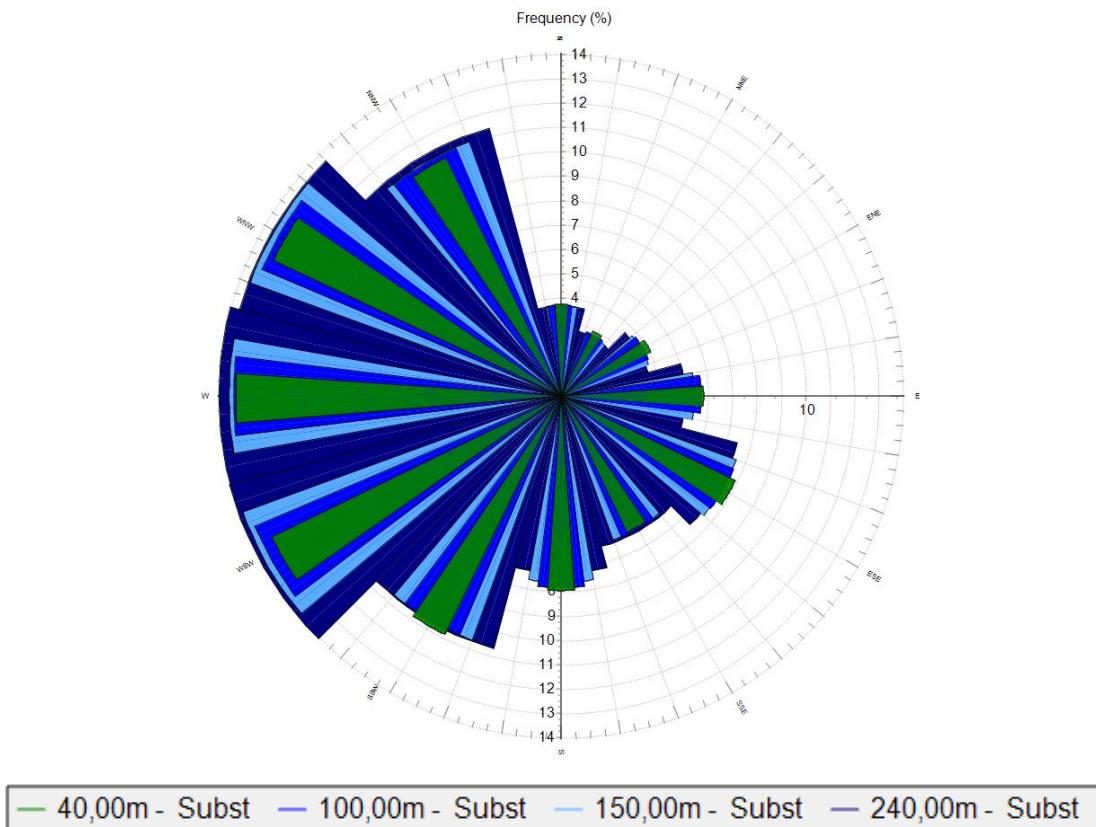


Figure 3. Directional distribution at selected heights of LiDAR measurements, Lot 2

3.5.4 Diurnal Variations

There is a minor variation in wind speed across the day with marginally higher wind speed at night and lower wind speed at daytime. The pattern is identical for the two buoys.

The temperature at the buoy is almost uniform across the day. There is a difference of 0.2°C between Lot 1 and Lot 2 and only a marginal difference on Lot 2 after a second year of measurements.

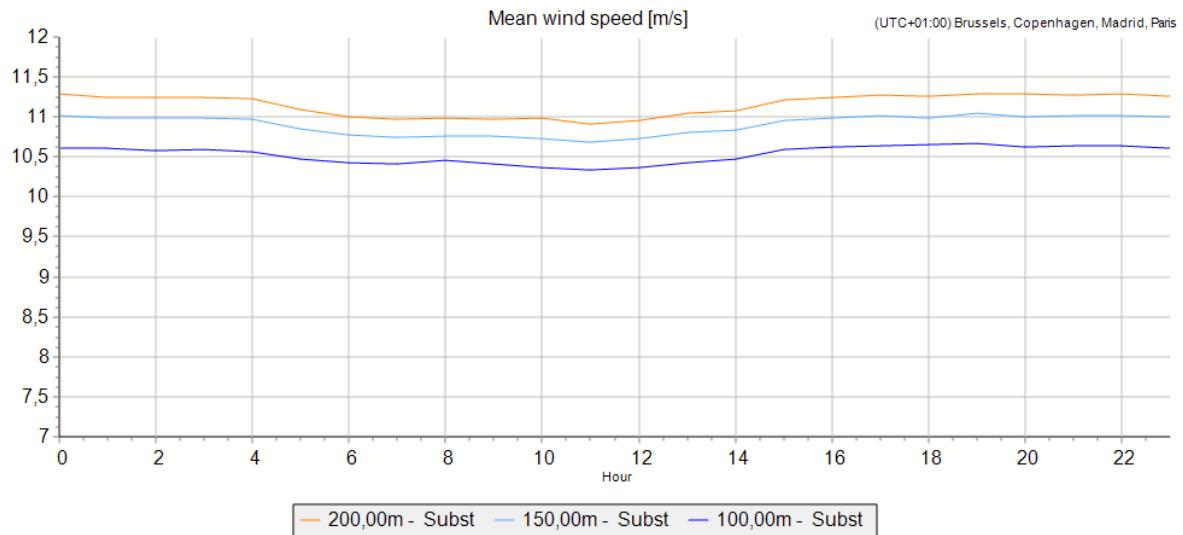


Figure 4. Diurnal wind speed variation, Lot 2.

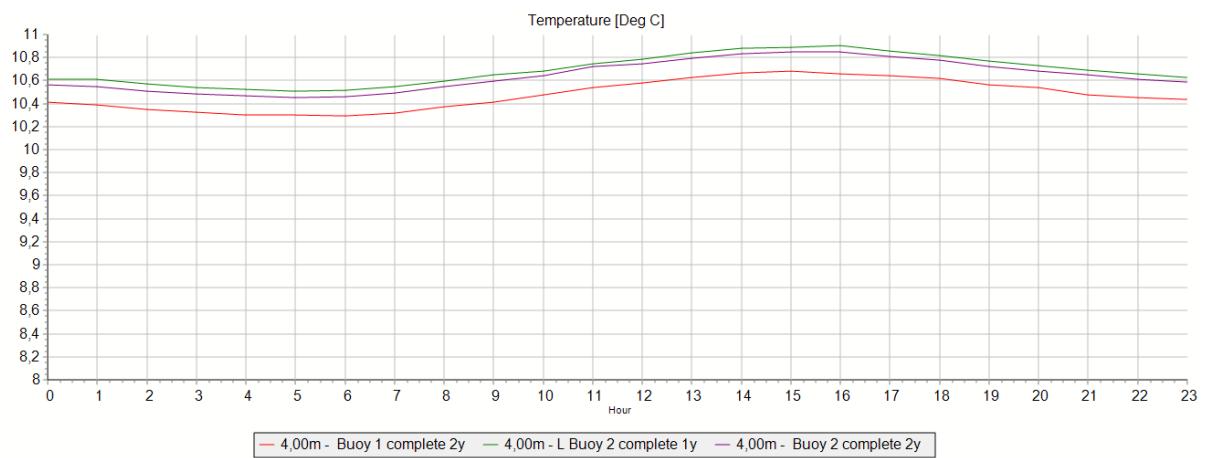


Figure 5. Diurnal temperature variation, Lot 1, 2 years (red), Lot 2, 1 year (green) and Lot 2, 2 years (purple).

3.5.5 Seasonal Variations

The specific year of measurement has the typical pattern for the region with higher wind speed during winter than during summer.

The temperature at the buoy varies across 2 years from a mean temperature in March of 5.6°C to 16.5°C in August.

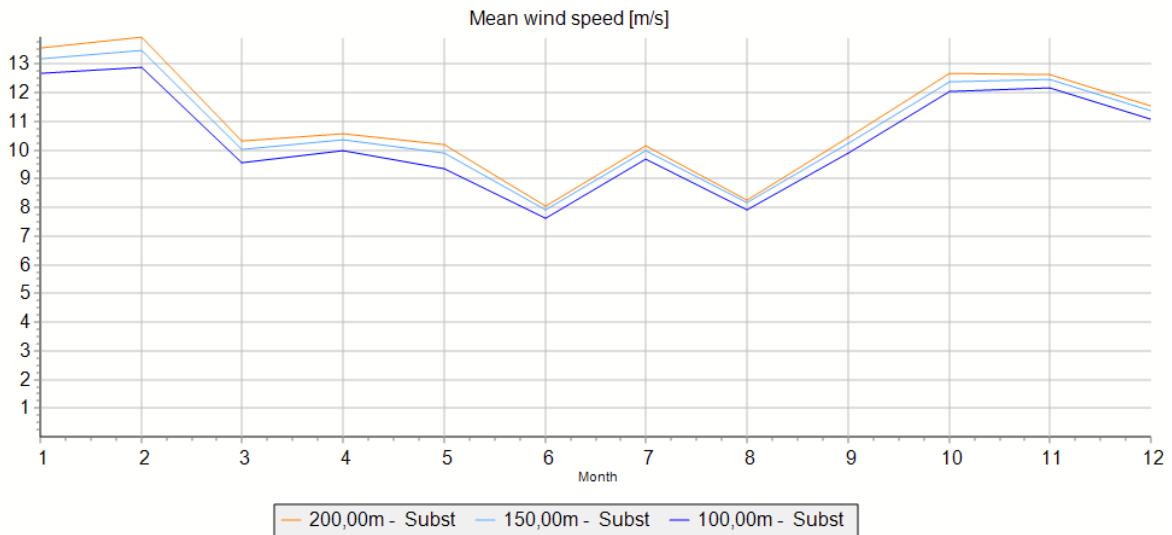


Figure 6. Monthly mean wind speed, Lot 2.

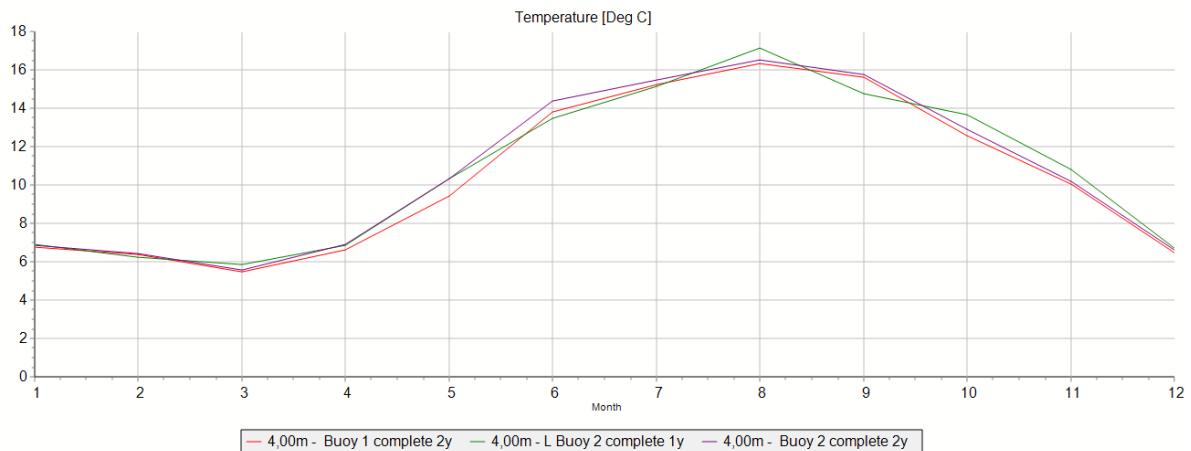


Figure 7. Monthly mean temperature, Lot 1, 2 years (red), Lot 2, 1 year (green) and Lot 2, 2 years (purple).

3.6 Measurement Uncertainty

Classification and verification tables from the main report are updated to include WS191.

The classification uncertainty, giving the maximum expected uncertainty, is obtained from the ZX300 classification document [14] as 1.41% (average at 130 and 135 m height). These heights are the tallest heights reported and are here considered representative of the 150 m measuring height. The classification table is included in Appendix A.

The verifications of the WS170, WS181 and WS191 buoy-mounted LiDARs were provided [15], [16], [12]. The two test sites were at the TNO Lichtland Goeree Offshore Test Site, The Netherlands (WS170) and Frøya, Norway (WS181, WS191).

In these studies the Key Performance Indicators (KPI) according to the OWA Roadmap [17] are tested and the verification uncertainty is here calculated according the method suggested by the CT/OWA LiDAR Uncertainty Standard Review [18]. All KPI's were successfully fulfilled.



The verification uncertainties from the verification reports are included in Appendix A for 120 m, the closest height to 150m. Note that the verification uncertainty from the Lichtland verification is substantially higher than at Frøya due to a higher reference uncertainty of the reference instrument against which the buoy LiDAR has been verified. It can therefore not be concluded that WS170 is poorer than WS181.

The measurement uncertainty of each buoy mounted LiDAR is a combination of classification and verification uncertainty (Table 12).

Table 12. Measurement uncertainty of buoy mounted LiDARs.

BUOY	CLASSIFICATION UNCERTAINTY	VERIFICATION UNCERTAINTY	TOTAL MEASUREMENT UNCERTAINTY
WS170	1.41%	3.28%	3.57%
WS181	1.41%	2.05%	2.49%
WS191	1.41%	2.37%	2.76%

The uncertainty from data repair is found by assuming a 20% uncertainty on the wind speed change from source to destination. With a 2% wind speed difference (from 120 to 150 m), this results in an uncertainty of 0.4% on wind speed of the synthesized data. At 150 m the vertically synthesized data contribute 0.4% of the dataset at Lot 1 and 0.7% at Lot 2. Resulting vertical uncertainty is 0.002% at Lot 1 and 0.003% at Lot 2.

Horizontally at 150 m, a linear regression method is used to transfer data between the LiDARs. From section 6.1.2 it is found that an MCP (Measure-Correlate-Predict) transformation based on 2 year of concurrent data may be estimated to 1.3% uncertainty. Horizontally synthesized data contribute 11.3% of the dataset at Lot 1, resulting in an uncertainty of 0.15%, while at Lot 2 the horizontally synthesized data contribute 5.9% of the dataset, resulting on an uncertainty of 0.08%.

Combined, vertical and horizontal data repair contribute 0.15% uncertainty at Lot 1 and 0.08% uncertainty at Lot 2 at 150 m.

As multiple buoys have been deployed at each of the lots, the measurement uncertainty is a combination of the buoys used at each lot. This is presented in Table 13 with a contribution from data repair uncertainty.



Table 13. Wind speed measurement uncertainty at 150 m ASL.

LOT	BUOYS	AVERAGE MEASUREMENT UNCERTAINTY	DATA REPAIR UNCERTAINTY	TOTAL MEASUREMENT UNCERTAINTY
Lot 1	WS170, WS191	3.16%	0.15%	3.17%
Lot 2	WS170, WS181	3.03%	0.08%	3.03%



4 Reference Data

The mesoscale data used for the revalidation are the same as use in the main report. Only difference is that all datasets are extended to include data from the year 2023.



5 Long-term Correction

5.1 Review of Reference Data

5.1.1 Long-term Consistency

Compared to the reference data used for the main report, data from 2023 are included in the reference data dataset.

However, repeating the analysis described in the main report shows that both a 20-year period from 2004 to 2023 and a 21-year period from 2003 to 2024 results in a similar or not more consistent dataset. A 21-year period does result in higher Mann-Kendall test values, but the resulting wind speed is unchanged.

As the 2003 to 2022 period was found to be suitably consistent and representative of long-term conditions, this period continues to be the reference period for long-term conditions on the site.

2023 data from reference as well as the buoys are included, however, to generate transfer functions for long-term correction.

5.1.2 Selection of Reference Data and Reference Period

The decision on reference data choice from the main report remains valid and 20 years of EMD-WRF data from the position 1 and 2 (Lot 1 and Lot 2) spanning the period 2003 to 2022 continue to be the reference dataset.

5.2 Correlation between Onsite and Reference Data

5.2.1 Wind Speed and Energy Correlation

The concurrent period of LiDAR data and EMD-WRF data is 24 months (15/11/2021 to 15/11/2023).

The correlation of the wind speed between LiDAR measurements and EMD-WRF data has not significantly changed with the addition of an extra year to the datasets (Table 14).

Conclusions on correlation are unchanged.

Table 14. Correlation coefficient r between the reference data (EMD-WRF, 150 m) and the onsite floating LiDAR data at 150 m ASL. Comparison between 1 year data reported in the main report and the addition of a second year of data.

REF: EMD-WRF	LOT 1		LOT 2	
CONCURRENT PERIOD	1 YEAR	2 YEARS	1 YEAR	2 YEARS
Wind Speed Correlation, r [%] hourly	94.4	95.9	95.2	95.8
Wind Energy Correlation, r [%] monthly	99.6	99.5	99.4	99.4

5.2.2 Wind Direction Correlation

The comparison between measured and reference wind direction distribution continue to show a good match and conclusion are unchanged from the main report (Figure 8).

The 2 years of concurrent period is now very close to the long-term direction distribution (Figure 9).

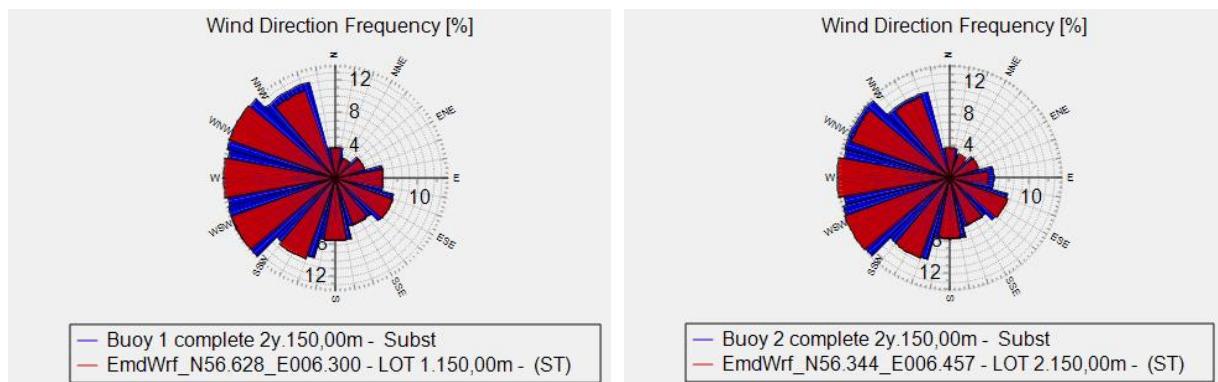


Figure 8. Wind direction roses for the concurrent period of LiDAR (blue) and EMD-WRF (red) data. Left: Lot 1, right: Lot 2.



Figure 9. Wind direction roses for EMD-WRF data. Deep red represents the entire long-term period, light red represents the period concurrent with LIDAR measurements. Left: Concurrent period with Lot 1, right: Concurrent period with Lot 2.

5.2.3 Long-term Correction and Validation

The KPIs for the long-term correction have slightly improved with the addition of a second year of data. The relative difference between different MCP methodologies is unchanged.

The matrix correction method continues to be the preferred method for long-term correction.

A comparison of KPIs between 1 year and 2 years on concurrent data is presented in Table 15 and Table 16.

Please note, that the correlation and transfer functions are based on a reference dataset that includes the year 2023, but that the resulting long-term corrected dataset excludes 2023.

The long-term corrected wind speed for Lot 1 has only marginally changed from 10.83 m/s at 150 m height to 10.85 m/s.

The long-term corrected wind speed for Lot 2 has changed from 10.71 m/s at 150 m height to 10.77 m/s.



Table 15. Prediction test using a 24-hour slicing method and a self-test using the entire concurrent period. The parameter presented is over-prediction of production in percent. (Lot 1 - 150 m data). Comparison between 1 year concurrent data reported in the main report and 2 years of concurrent data.

REFERENCE: EMD-WRF LOCAL DATA: LOT 1, 150M	MATRIX	
	1 year	2 years
24-hour slicing test, % production	-0.29	-0.08
Concurrent period test, % production	0.37	0.1
Kolmogorov-Smirnov test, %	1.39	0.67
Predicted long-term mean wind speed, m/s	10.83	10.85

Table 16. Prediction test using a 24-hour slicing method and a self-test using the entire concurrent period. The parameter presented is over-prediction of production in percent. (Lot 2 - 150 m data). Comparison between 1 year concurrent data reported in the main report and 2 years of concurrent data.

REFERENCE: EMD-WRF LOCAL DATA: LOT 2, 150M	MATRIX	
	1 year	2 years
24-hour slicing test, % production	1.12	0.36
Concurrent period test, % production	0.16	0.10
Kolmogorov-Smirnov test, %	1.44	0.57
Predicted long-term mean wind speed, m/s	10.71	10.77

The artificially generated time series (30 m to 270 m) represent the long-term wind climate and the 150 m results are presented in the following.



5.3 Long-Term Wind Climate

5.3.1 Long-term Wind Speed Distribution

The long-term wind speeds for the two buoys in North Sea Energy Island OWF are summarized in the following tables. A detailed breakdown of the Weibull parameters can be found in Appendix C.

Table 17. Weibull parameters of the long-term wind data used, Lot 1.

LOT 1	PERIOD [Y]	ARITHMETIC MEAN WIND SPEEDS [M/S]	WEIBULL MEAN [M/S]	WEIBULL - A PARAMETER [M/S]	WEIBULL - K PARAMETER
30	20	9.43	9.44	10.65	2.333
40	20	9.66	9.68	10.93	2.356
60	20	10.02	10.06	11.35	2.379
90	20	10.39	10.46	11.79	2.398
100	20	10.49	10.57	11.93	2.413
120	20	10.66	10.76	12.14	2.412
150	20	10.85	10.94	12.35	2.355
180	20	11.00	11.06	12.49	2.297
200	20	11.10	11.15	12.58	2.272
240	20	11.24	11.26	12.71	2.216
270	20	11.33	11.35	12.81	2.194

*Table 18. Weibull parameters of the long-term wind data used, Lot 2.*

LOT 2	PERIOD [Y]	ARITHMETIC MEAN WIND SPEEDS [M/S]	WEIBULL MEAN [M/S]	WEIBULL - A PARAMETER [M/S]	WEIBULL - K PARAMETER
30	20	9.35	9.36	10.56	2.314
40	20	9.56	9.58	10.81	2.333
60	20	9.92	9.96	11.24	2.362
90	20	10.30	10.38	11.71	2.393
100	20	10.39	10.48	11.82	2.394
120	20	10.56	10.66	12.03	2.394
150	20	10.91	10.97	12.38	2.277
180	20	11.01	11.06	12.48	2.255
200	20	11.16	11.19	12.63	2.212
240	20	11.23	11.26	12.71	2.186
270	20	10.77	10.86	12.26	2.348

5.3.2 Long-term Wind Direction Distribution

The long-term frequency and energy distribution for the long-term corrected LiDAR data from Lot 1 and Lot 2 at 150 m ASL indicate a main wind direction from southwest to northwest.

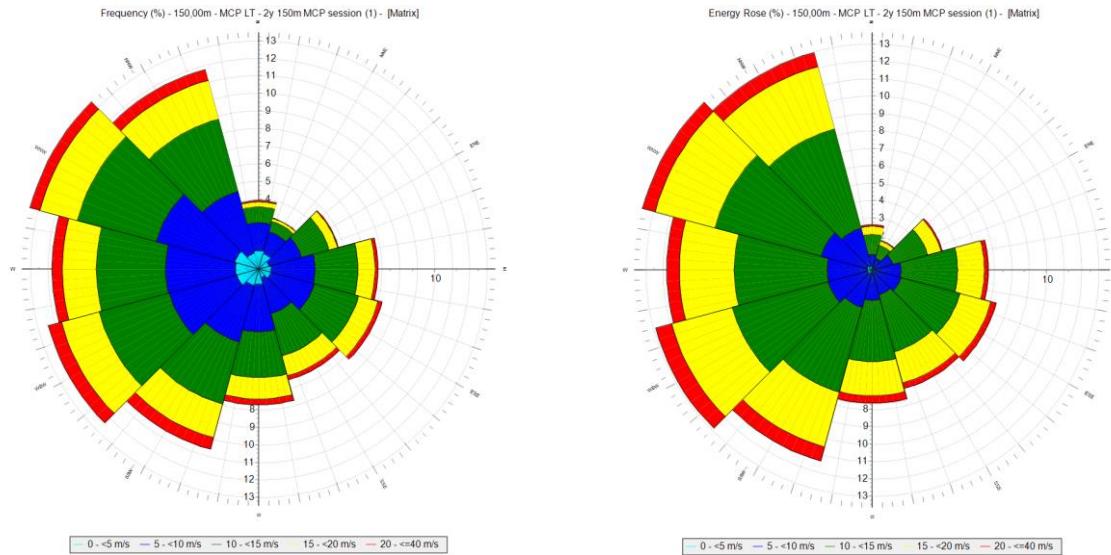


Figure 10. Left: Wind direction distribution of long-term corrected LiDAR data (Lot 1) at 150 m. Right: Energy distribution of long-term corrected LiDAR data (Lot 1) at 150 m. Both are divided in wind speed intervals.

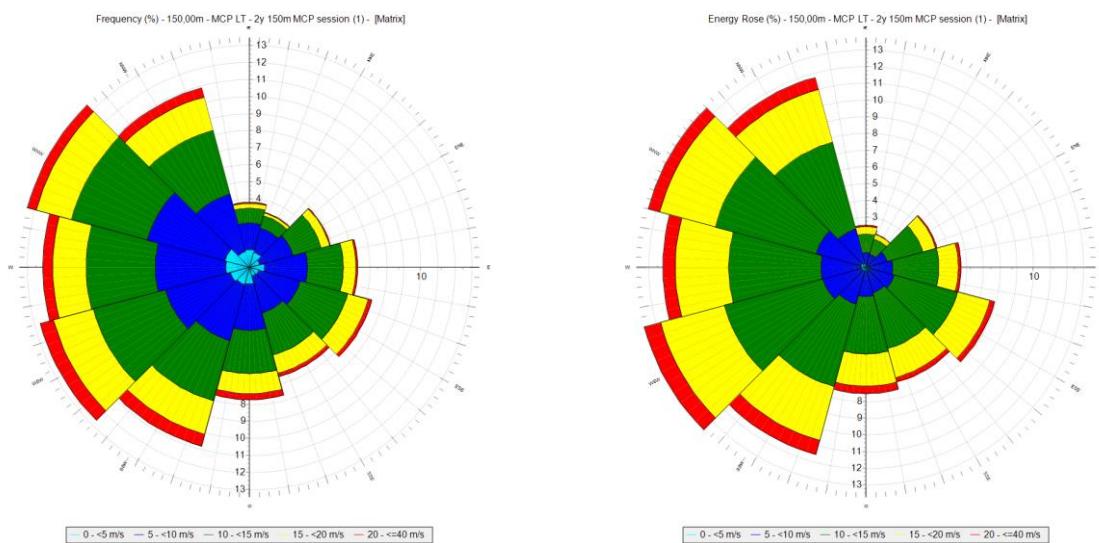


Figure 11. Left: Wind direction distribution of long-term corrected LiDAR data (Lot 2) at 150 m. Right: Energy distribution of long-term corrected LiDAR data (Lot 2) at 150 m. Both are divided in wind speed intervals.



5.3.3 Long-term Diurnal Variations

The diurnal long-term wind speed is comparable to the observed diurnal wind speed. Figure 12 shows the diurnal variations for Lot 2. The pattern is identical for the two buoys. The variation is similar, and the long-term diurnal variation matches well what was found using 1 year of measurements.

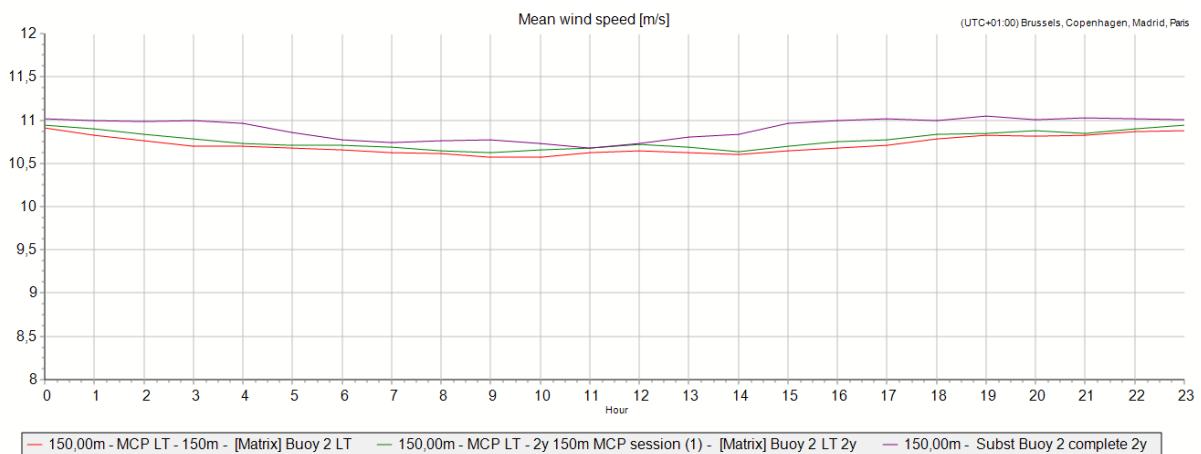


Figure 12. Diurnal wind speed observed (purple), long-term corrected with 1 year of observations (red) and long-term corrected after 2 years of observations, Lot 2.

5.3.4 Long-term Seasonal Variations

The long-term seasonal variation of wind speed at 150 m is presented in Figure 13 for Lot 2 and compared to the actual 2 years of observation. Whereas the seasonal variation of the measurements is based on a single year, the seasonal variation of the long-term timeseries is an average of 20 years of data and therefore predictably smoother. The long-term derived seasonal variation based on 2 years of measurements is identical to the seasonal variation presented in the main report [1]. This pattern is identical on Lot 1.

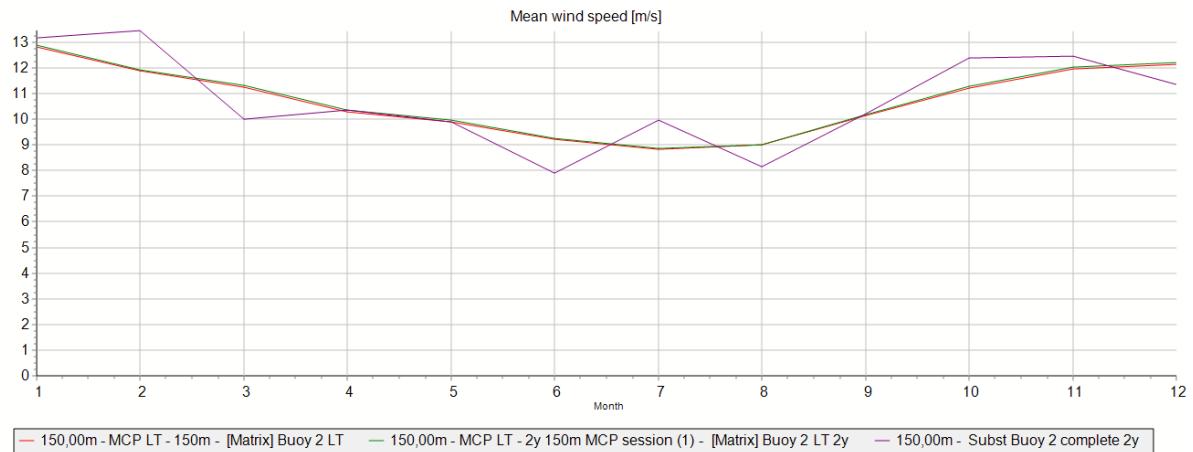


Figure 13. Seasonal variation of long-term corrected dataset (red) and observed dataset (purple) at 150 m, Lot 2. The long-term seasonal variation based on 1 year of measurements (green) is identical to the new seasonal variation.



6 Comparison of Wind Models

The primary wind model for Energy Island North Sea has been updated with a second year of LiDAR measurements at Lot 1 and Lot 2.

After data repair, the datasets include an almost 3-month gap from mid-March to mid-June 2023.

The datasets have been long-term corrected, resulting in a 20-year time series for each of the two positions. The long-term corrected wind models are labelled “Primary mode 2y” as opposed to the reported Primary model in the main report, which is henceforth labelled “Primary model 1y”.

The wind speed of Primary mode 2y for Lot 1 has a marginally higher wind speed than Primary model 1y (Table 19 and Figure 14) and an almost identical directional distribution (Figure 16).

The wind speed of Primary mode 2y for Lot 2 has also an almost identical wind speed and wind speed distribution to the Primary model 1y (Table 20 and Figure 15) and an almost identical directional distribution (Figure 17).

Compared to secondary models based on FINO3, Thor and Harald B data, the difference between Primary model 1y and Primary model 2y are well within the range of those models (Table 19 and Table 20) and especially with the model based on Thor data, there is a very good match.

The decision is to replace the Primary model 1y with the Primary model 2y as the final primary model for Energy Island North Sea on both lots.

Table 19. Comparison of model results at Position 1, Lot 1 150 m ASL.

	PRIMARY MODEL, 1 YEAR	PRIMARY MODEL, 2 YEARS	TRANSFERRED THOR MODEL	TRANSFERRED FINO3 MODEL	TRANSFERRED HARALD B MODEL
Wind speed [m/s]	10.83	10.85	10.85	10.97	11.23
Wind speed relative to primary model	99.8%		100.0%	101.1%	103.5%

Table 20. Comparison of model results at Position 2, Lot 2 150 m ASL.

	PRIMARY MODEL, 1 YEAR	PRIMARY MODEL, 2 YEARS	TRANSFERRED THOR MODEL	TRANSFERRED FINO3 MODEL	TRANSFERRED HARALD B MODEL
Wind speed [m/s]	10.71	10.77	10.75	10.86	11.12
Wind speed relative to primary model	99.4%		99.8%	100.8%	103.2%

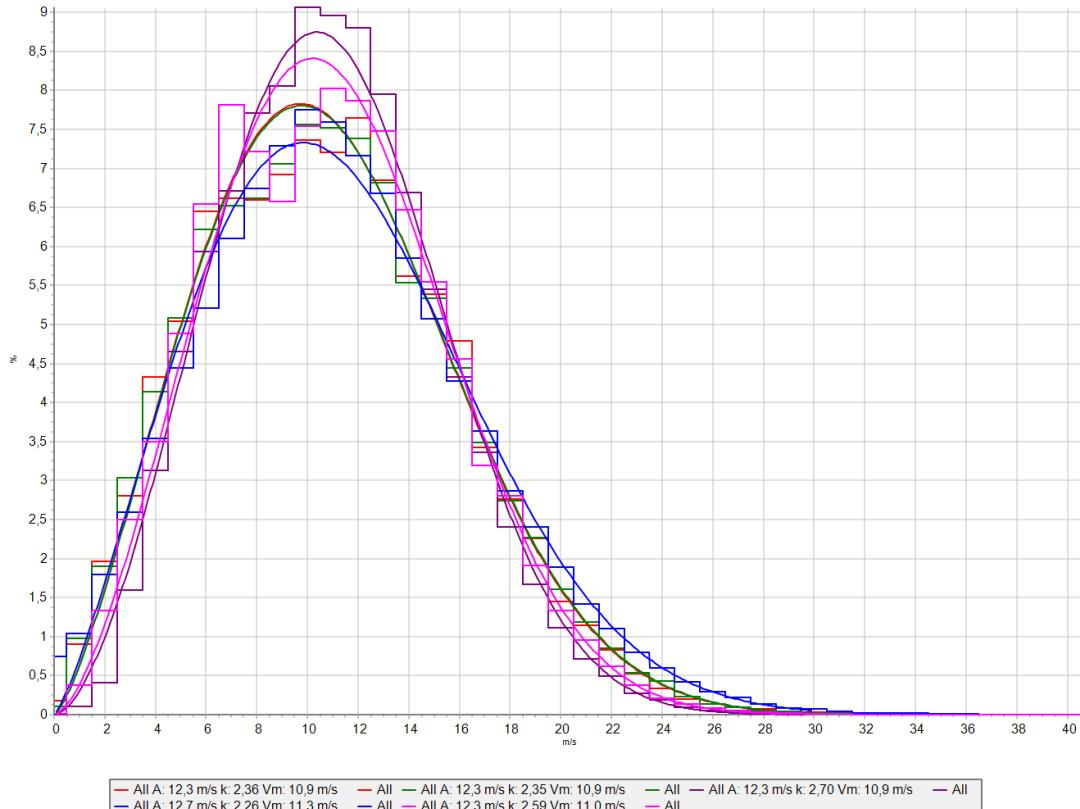


Figure 14. Wind speed probability function for the five datasets at Position 1, Lot 1. Primary model based on 2 years (green), Primary model based on 1 year (red), Thor model (pink), Fino3 (purple) and Harald B (blue).

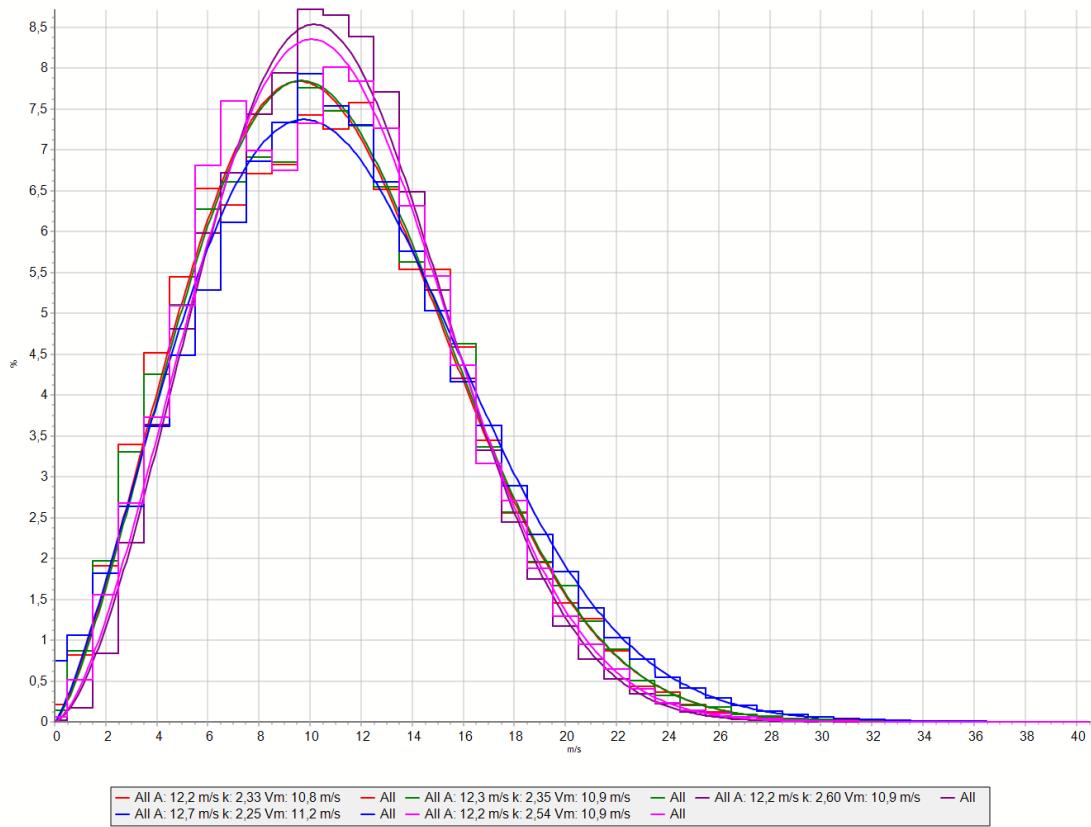


Figure 15. Wind speed probability function for the five datasets at Position 2, Lot 2. Primary model based on 2 years (green), Primary model based on 1 year (red), Thor model (pink), Fino3 (purple) and Harald B (blue).

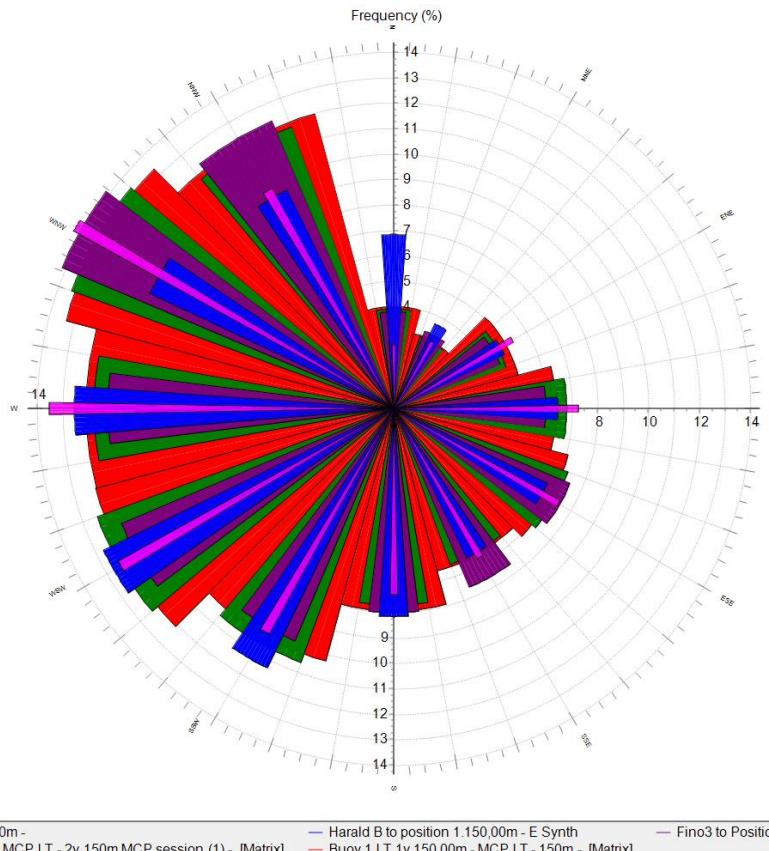


Figure 16. Directional distribution of the five long-term wind models at Position 1, Lot 1. Primary model based on 2 years (green), Primary model based on 1 year (red), Thor model (pink), Fino3 (purple) and Harald B (blue).

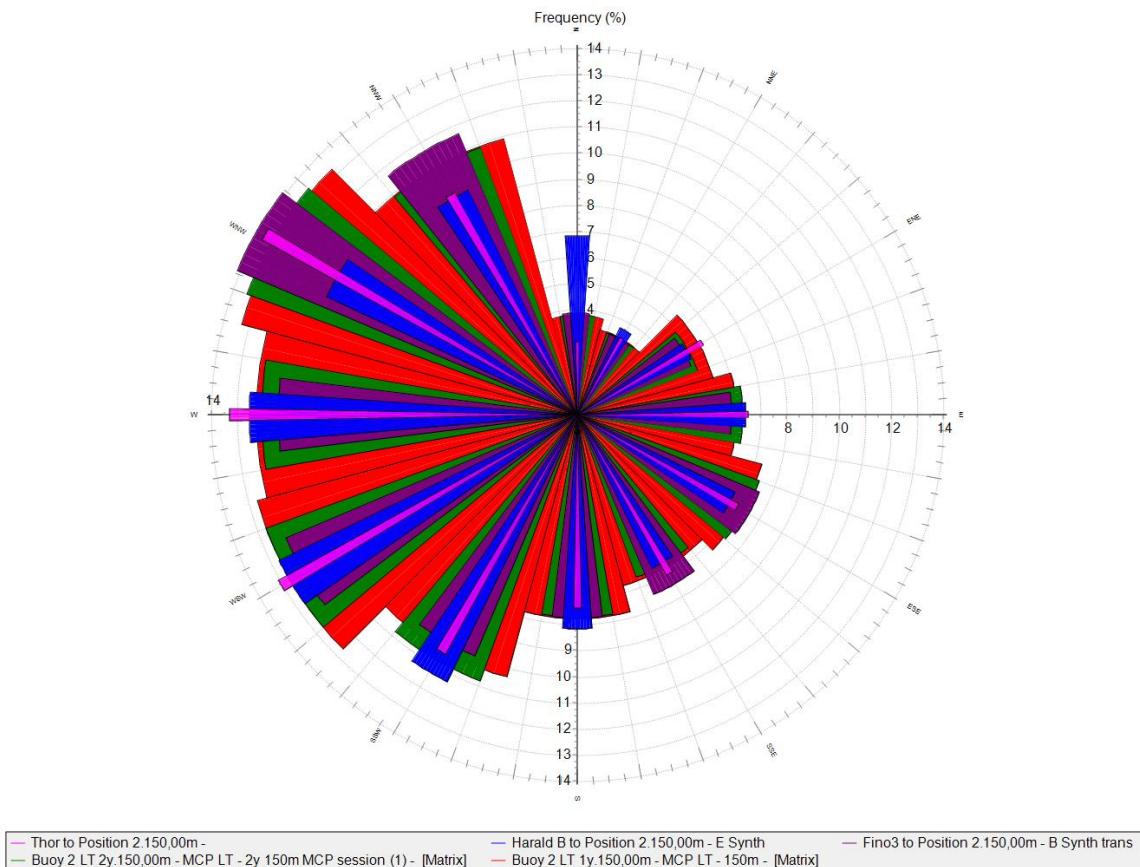


Figure 17. Directional distribution of the five long-term wind models at Position 2, Lot 2. Primary model based on 2 years (green), Primary model based on 1 year (red), Thor model (pink), Fino3 (purple) and Harald B (blue).



6.1 Uncertainty of Primary Wind Model

6.1.1 Measurement Uncertainty

Uncertainty on measurements was discussed in section 3.6. The results are summarized in Table 21.

Table 21. Measurement uncertainty.

BUOY	TOTAL MEASUREMENT UNCERTAINTY
Lot 1	3.17%
Lot 2	3.03%

6.1.2 Long-term Correction Uncertainty

The long-term correction uncertainty consists of components with very low uncertainty (correlation, reference consistency, reference period length) and one component with moderate uncertainty, which is the measurement period of 2 years. This is therefore the dominant uncertainty with very minor contributions from other components.

Based on [19], the combined long-term correction uncertainty of a 1-year period will range between 1.5% and 4% and for a 2-year period between 1% and 3%.

For the long-term correction, three different references (EMD-WRF, ERA5 and NORA3) were tested using four different methods in a sensitivity analysis. The standard deviation on predicted wind speed of these was 0.4%. The references are, however, not entirely independent from each other which make this standard deviation unreliable. Instead, the range from minimum to maximum resulting wind speed can be used as an indicator of the uncertainty. This range is 1.2% for Lot 1 and 1.4% for Lot 2.

We, therefore, consider an uncertainty on long-term correction of 1.3% a reasonable value for long-term correction of the primary data from the buoys.

6.1.3 Very Long-term Uncertainty

The future climate uncertainty is the potential difference in mean wind speed of the next 20 years from the past period considered in the wind study. Northern Europe is subject to longwave oscillations meaning that a 20-year operation period can be quite different from the very long-term average. As suggested by [19], we estimate that for a 20-year dataset in this region this uncertainty is 1.5 % on wind speed.

This is supported by [20] who indicate 20-year multidecadal variability amplitude of the North Sea on yield around 3%. Given a yield to wind speed ratio near unity, this translates well to wind speed and results in an uncertainty of wind speed of 1.5%.



6.1.4 Year-to-year Variability

Based on the annual variation on the EMD-WRF data the inter-annual variability is 3.3% at Lot 1 and Lot 2. Over a 20-year lifetime this uncertainty is reduced to 0.62%.

6.1.5 Total Uncertainty

The uncertainty components are combined to a total wind speed uncertainty. A total is given for 1- and 20-year period.

The results from the secondary data provide a standard deviation on the four reported wind speed results (FINO3, Harald B, Thor and the buoy) for each buoy at 1.7% at Lot 1 and 1.9% at Lot 2. Due to the horizontal extrapolation distortion and in some cases poorer measurement uncertainty than at the buoys, the uncertainty on the transferred secondary data should be considered higher than on the local data, however the standard deviation of the results from the four different models remain within the uncertain of the total wind speed uncertainty of the primary model (Table 22) and therefore confirm the primary model.

Table 22. Combined uncertainty on long-term wind data. Uncertainty given as one standard deviation wind speed.

WIND DATA UNCERTAINTY	LOT 1		LOT 2	
	1 YEAR	20 YEARS	1 YEAR	20 YEARS
Measurement uncertainty	3.17%	3.17%	3.03%	3.03%
Long-term correction uncertainty	1.3%	1.3%	1.3%	1.3%
Very long-term uncertainty	1.5%	1.5%	1.5%	1.5%
Annual variability	3.3%	0.74%	3.3%	0.74%
Total	4.99%	3.81%	4.90%	3.70%

7 Flow Modelling

7.1 Wind Resource Map

The wind resource map from the main report has been recalibrated with Primary model 2y.

The resulting recalibrated wind resource map is presented in Figure 18 and is provided as a deliverable.

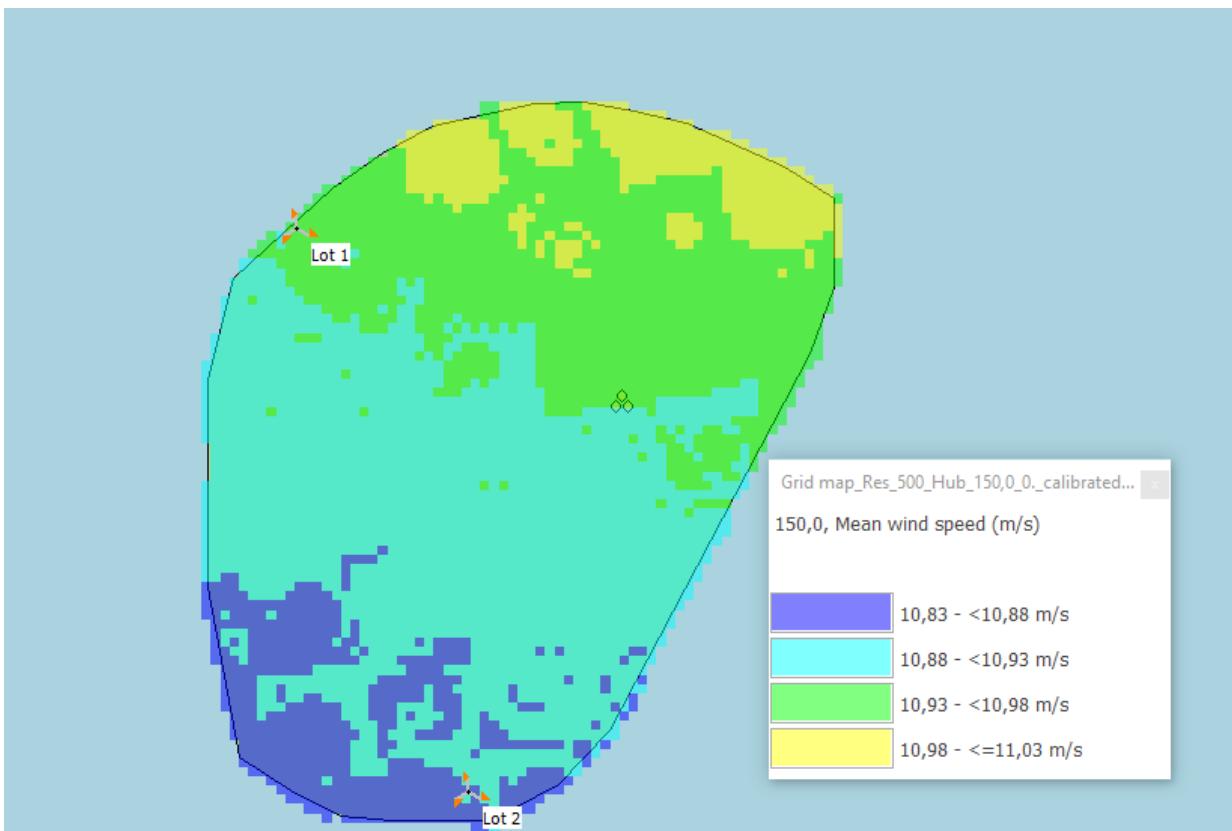


Figure 18. Wind resource map for the Energy Island North Sea OWF.



7.2 Wind Resource Model for Position 3

This site parameter assessment includes data for a third position beside the two measurement locations.

The location of Position 3 was selected as the most remote location from Lot 1 and Lot 2 within the OWF. Coordinates for Position 3 are presented in Table 23. The location is 29 km east of Lot 1 and 37 km northeast of Lot 2.

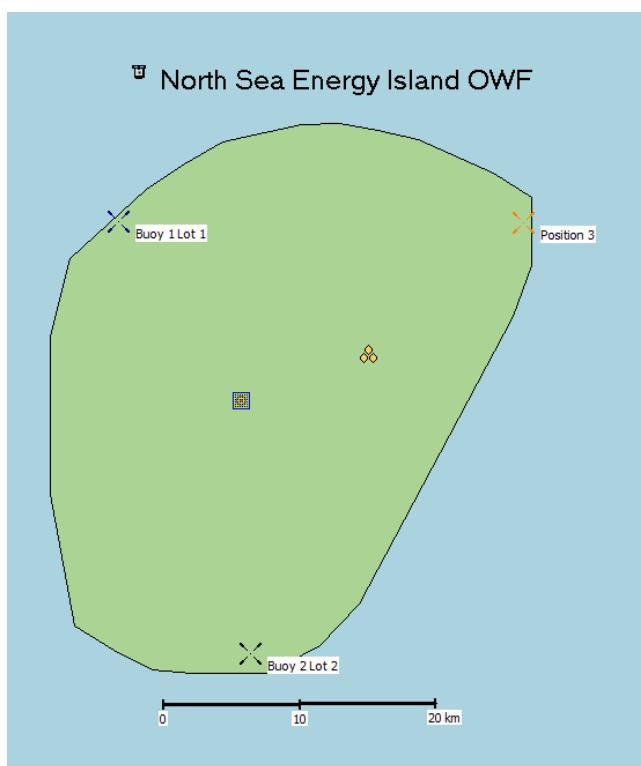


Figure 19. Location of measurement points and the selected Position 3.

Table 23. Coordinates for Position 3.

	UTM WGS84, ZONE 32	GEOGRAPHICAL COORDINATES WGS84		
Position 3	363,889	6,278,127	6.7813°	56.6275°

For Position 3 a long-term time series has been produced for 150 m ASL.

This is achieved through the gradient file method available in windPRO. With this method observed data are moved around the site using a wind resource map. From the wind resource map, the Weibull A parameter of the Weibull distribution is picked up from the location of the observed data and the prediction location and the ratio is applied to the observed time series. A specific ratio is found for each of 12 direction sectors. No change is made to the wind direction data.



For Position 3 the resulting time series at 150 m was generated using the long-term corrected time series for Lot 2 at 150 m (Primary model 2y) and the recalibrated wind resource map.

In principle, with this method, a time series can be extracted for any location on the site using the wind data time series and the gradient file. Both are included as deliverables.

The time series for Position 3 includes wind speed and wind direction for 20 years in an hourly resolution.

The arithmetic mean wind speed at Position 3 is 10.88 m/s. The Weibull distributions are presented in Table 24. Details can be found in Appendix C.

Table 24. Weibull parameters of the long-term wind data, Position 3.

POSITION 3	PERIOD [Y]	ARITHMETIC MEAN WIND SPEEDS [M/S]	WEIBULL MEAN [M/S]	WEIBULL - A PARAMETER [M/S]	WEIBULL - K PARAMETER
150 m	20	10.88	10.97	12.38	2.356



8 Siting Parameters

This chapter outlines the requested siting parameters for assessment of structural integrity of wind turbines in accordance with the relevant design standards: IEC 61400-1 Ed. 4 [2], IEC 61400-3-1 Ed. 1 [3], IEC 61400-15-1 CD [7], DS 472 Ed 2. [6], and EN1991-1-4 including the Danish Annex DK NA EN1991-1-4 [4] [5].

For siting parameters that require turbine specific information, the following has been assumed.

Table 25. Turbine specific information used for siting parameters.

TURBINE SPECIFICATION	VALUE
Hub height	150 m
Rotor diameter	240 m
Cut-in wind speed	3 m/s
Cut-out wind speed	25 m/s
Wind turbine class	II

8.1 Normal Wind Conditions

Normal wind conditions have been derived in accordance with IEC 61400-3-1 Ed. 1 [3], IEC 61400-1 Ed. 4 [2] and IEC 61400-15-1 CD [7]. All parameters except for the wind speed distribution have been estimated as omnidirectional characteristic values. This is in line with the IEC 61400-3-1, which allows omnidirectional values to be considered for offshore sites that are far away from the coast where the environment generally exhibits little directional variation.

Due to the site location being offshore, the terrain is classified as “not complex” (terrain complexity factor is 1.0) and the wind flow is assumed without any inclination (flow inclination 0°).

8.1.1 Wind Speed Distribution

The 10-minute mean wind speed probability distribution at hub height is modelled by a Weibull distribution for each direction [2]. The distributions are estimated based on long-term corrected data from the LiDARs. Note that the temporal resolution of this data is 1 hour, but according to IEC 61400-3-1 the long-term probability distribution of mean wind speed may be assumed to be independent of averaging periods between 10 minutes and 3 hours. The results are summarized in the Table 26 to Table 28 below. Mean wind speed is derived from the Weibull distribution. Details can be found in Appendix C.



Table 26. Weibull distribution parameters based on long-term corrected LIDAR data at 150 m ASL, Position 1 – Lot 1. Wind speeds are derived from the Weibull distribution.

POSITION 1 – LOT 1 SECTOR	A PARAMETER [M/S]	K PARAMETER [-]	FREQUENCY [%]	MEAN WIND SPEED [M/S]
Mean	12.35	2.355	100.00	10.94
0-N	9.44	1.826	3.90	8.39
1-NNE	8.70	1.838	3.01	7.73
2-ENE	11.12	2.493	4.71	9.86
3-E	11.94	2.539	6.80	10.60
4-ESE	12.28	2.525	7.27	10.90
5-SSE	12.80	2.686	6.53	11.38
6-S	12.27	2.352	7.74	10.87
7-SSW	13.13	2.419	10.62	11.64
8-WSW	12.90	2.334	12.40	11.43
9-W	12.47	2.326	11.76	11.05
10-WNW	12.43	2.417	13.48	11.02
11-NNW	13.20	2.570	11.77	11.72



Table 27. Weibull distribution parameters based on long-term corrected LIDAR data at 150 m ASL, Position 2 – Lot 2. Wind speeds are derived from the Weibull distribution.

POSITION 2 – LOT 2 SECTOR	A PARAMETER [M/S]	K PARAMETER [-]	FREQUENCY [%]	MEAN WIND SPEED [M/S]
Mean	12.26	2.348	100.00	10.86
0-N	9.32	1.830	3.81	8.29
1-NNE	8.92	1.962	3.33	7.91
2-ENE	11.09	2.544	4.91	9.84
3-E	11.20	2.387	6.33	9.93
4-ESE	12.57	2.744	7.40	11.19
5-SSE	12.57	2.713	6.61	11.18
6-S	12.12	2.267	7.74	10.73
7-SSW	13.12	2.373	10.82	11.63
8-WSW	13.17	2.430	12.66	11.68
9-W	12.39	2.321	12.08	10.98
10-WNW	12.26	2.386	13.44	10.86
11-NNW	12.96	2.505	10.87	11.50



Table 28. Weibull distribution parameters based on long-term corrected LIDAR data at 150 m ASL, Position 3. Wind speeds are derived from the Weibull distribution.

POSITION 3 SECTOR	A PARAMETER [M/S]	K PARAMETER [-]	FREQUENCY [%]	MEAN WIND SPEED [M/S]
Mean	12.38	2.356	100.00	10.97
0-N	9.20	1.830	3.90	8.18
1-NNE	9.02	1.811	3.01	8.02
2-ENE	11.47	2.459	4.71	10.17
3-E	11.93	2.538	6.80	10.59
4-ESE	12.21	2.519	7.27	10.84
5-SSE	12.85	2.681	6.53	11.42
6-S	12.38	2.347	7.74	10.97
7-SSW	13.04	2.426	10.62	11.56
8-WSW	12.88	2.336	12.40	11.41
9-W	12.49	2.323	11.76	11.06
10-WNW	12.54	2.416	13.48	11.12
11-NNW	13.23	2.573	11.77	11.75

8.1.2 Normal Wind Profile (NWP)

The site-specific normal wind profile is characterised by the mean wind shear power law coefficient (α_c). According to IEC 61400-1 Ed. 4 [2] the site-specific omnidirectional characteristic wind shear should be evaluated as the energy-weighted average of the sector-wise values.

In the main report [1] the power coefficient describing the shear is presented based on 1 year of measurements. It is also presented, how shear is a function of season. With 3 months of data missing on both Lot 1 and Lot 2, the second year of data includes a seasonal bias. The bias is cancelled by calculating the shear in 2 months bins. For the March-April bin and for the May-June bin, the shear is based only the first year of data, while for the remaining bins, shear is based on data from both years. The monthly shear is presented in Table 29.



For Position 3, the Position 1 shear can be assumed.

Table 29. Site specific omnidirectional wind shear exponent by season. Shear values in italics are based on first year of measurements.

POSITION	WIND SHEAR POWER LAW EXPONENT [-]	JAN-FEB	MAR-APR	MAY-JUN	JUL-AUG	SEP-OCT	NOV-DEC	YEAR
Position 1 – Lot 1	Hub height range 120 m to 180 m	0.110	<i>0.082</i>	<i>0.076</i>	0.060	0.070	0.060	0.076
	Rotor range 30m to 270m	0.095	<i>0.101</i>	<i>0.096</i>	0.081	0.077	0.060	0.085
Position 2 – Lot 2	Hub height range 120 m to 180 m	0.112	<i>0.082</i>	<i>0.081</i>	0.066	0.075	0.051	0.078
	Rotor range 30m to 270m	0.093	<i>0.098</i>	<i>0.104</i>	0.083	0.076	0.056	0.085

Table 30. Site specific omnidirectional wind shear exponent.

WIND SHEAR POWER LAW EXPONENT [-]	POSITION 1 – Lot 1	POSITION 2 – Lot 2
Hub height range 120 m to 180 m	0.076	0.078
Rotor range 30m to 270m	0.085	0.085

8.1.3 Normal Turbulence Model (NTM)

TURBULENCE MODEL AND FIT

The main report presents a turbulence model for the Energy Island North Seas OWF based on FINO3 measurements. The addition of a second year of onsite LiDAR data has no impact on the turbulence model.



8.1.4 Air Density

Air density during normal wind conditions is characterised by its average value at hub height, which is here set to 150 m.

Based on long-term mean temperature found in section 8.1.5, air density is calculated at 150 m elevation assuming standard pressure at this height of 996 hPa. The resulting air density is 1.229 kg/m³ for both Position 1 and 2. This is used as primary result.

Mean air density (150 m)	1.23 kg/m ³
--------------------------	------------------------

8.1.5 Air Temperature

Air temperature has been measured at Lot 1 (Position 1) and Lot 2 (Position 2) for 2 years. The average temperature measured during that period was 10.5°C at Lot 1 and 10.6°C at Lot 2. The temperature has been long-term corrected with EMD-WRF Europe+ data from the buoy locations to 9.9°C on lot 1 and 10.0°C on Lot 2. These temperatures conform with temperatures at surrounding meteorological stations.

The temperature at 150 m has been found using the atmospheric lapse rate of -6.43 K/km derived from the EMD-WRF Europe+ data. The result is 9.0°C at both lots at 150m ASL.

The EMD-WRF timeseries at 100 m has been calibrated to represent the LiDAR position at 150m height by applying and offset 0.6°C on Lot 1 and 0.5°C on Lot 2 (difference between EMD-WRF Europe+ and measurements). The resulting timeseries has then been used to estimate how many hours the temperature is outside the normal and extreme temperature ranges defined in the IEC 61400-3-1 as -10°C to 30°C and -15°C to 40°C, respectively. The results are summarized in Table 31 and Table 32. The probability of temperatures falling outside the defined ranges is assessed by Gaussian distributions fitted to either the 10% highest or lowest temperatures [13].

For Position 3, temperature at Position 1 can be assumed.



Table 31. Temperature assessment at Position 1 – Lot 1 (150m).

CHECK	TMIN [°C]	TMAX [°C]	< TMIN [H/YEAR]	> TMAX [H/YEAR]	TOTAL HOURS OUTSIDE RANGE [H/YEAR]
Normal range	-10.0	30.0	0.100	0.022	0.122
Extreme range	-15.0	40.0	0.000	0.000	0.000
Mean air temperature					9.0°C
Standard deviation air temperature					5.0°C
Maximum temperature					27.2°C
Minimum temperature					-6.8°C

Table 32. Temperature assessment at Position 2 – Lot 2 (150m).

CHECK	TMIN [°C]	TMAX [°C]	< TMIN [H/YEAR]	> TMAX [H/YEAR]	TOTAL HOURS OUTSIDE RANGE [H/YEAR]
Normal range	-10.0	30.0	0.174	0.032	0.207
Extreme range	-15.0	40.0	0.001	0.000	0.001
Mean air temperature					9.0°C
Standard deviation air temperature					5.0°C
Maximum temperature					29.2°C
Minimum temperature					-7.1°C

8.1.6 Extreme Wind Speed Model (EWM)

The extreme wind model is unchanged compared to the main report [1].

Both Lot 1 and Lot 2 datasets contain an almost 3-month gap during the second year of measurements. As the gap is during spring which normally has a low concentration of extreme wind speeds, the Peak Over Threshold (POT) will not be biased when updating the result to 2 years of data.

This is presented in Table 34.



The preferred method remains the Danish Standard with results presented in Table 33.

Table 33. Extreme wind speed results (150 m).

TIME HORIZON	EXTREME WIND SPEED [M/S]
1-year	29.1
50-year	51.8

Table 34. Extreme wind speed alternative results using different methods (150 m).

EXTREME WIND METHOD	50-YEAR EXTREME WIND SPEED [M/S]
EN1991-1-4 + WEng + DS472	51.8 (main result)
AM Mesoscale (20y) + Spectral correction (theoretical)	42.2 (WS170 & WS181)
AM Mesoscale (20y) + Spectral correction (site specific)	43.2 (WS170), 43.6 (WS181)
POT (N=20, $\Delta t_{min}=4$ days) based on 2 years of data	42.5 (WS170), 43.3 (WS181)

8.1.7 Wind Shear at Extreme Wind Speed

The site-specific wind profile associated with extreme wind speed events has been estimated based on the on-site LiDAR data at Lot 1 and Lot 2. For the revalidation, the shear version wind speed plots at 150 m above sea level are extended to cover two years of data. The wind shear exponent is estimated for each time step and then averaged in 0.5 m/s bins. Notice the linear increase in shear from around 0.03 at 3 m/s, to 0.11 around 15 m/s. Above 15 m/s wind shear appear to drop but with noticeable scatter. Observed shear data are typically quite noisy as they are based on measurement across multiple heights and accumulate errors from multiple sources.

The conclusion from the main report of an extreme wind shear of 0.11 is still valid with comment that the value is likely between 0.075 and 0.125.

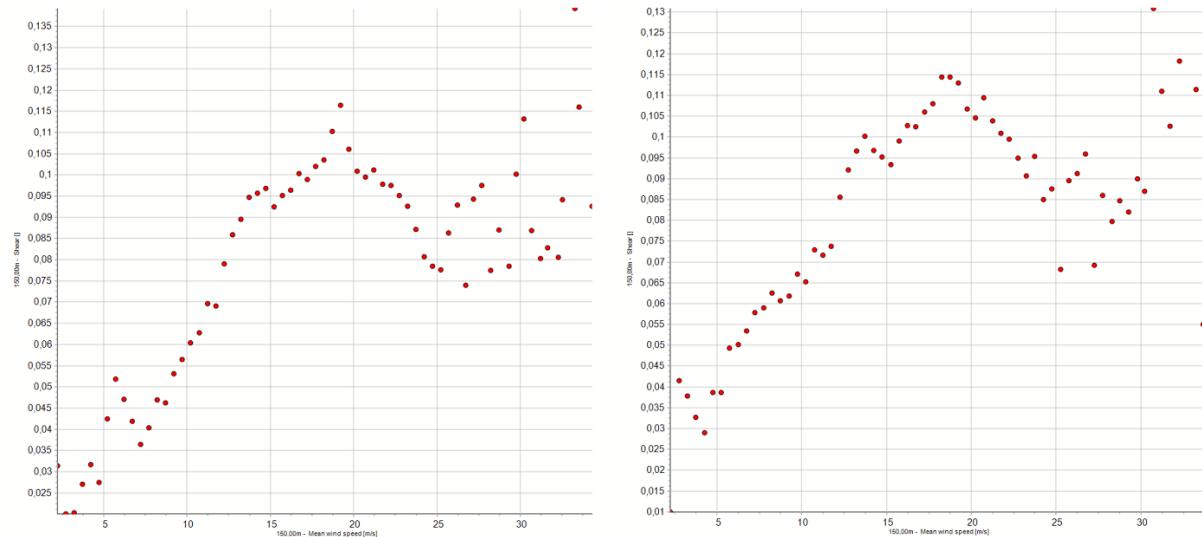


Figure 20. Observed wind shear versus wind speed (0.5 m/s bins) at the two North Sea Energy Island buoys, Lot 1 (right) and Lot 2 (left). For both buoys the wind shear clearly levels off at around 0.11 for wind speeds above ca. 15m/s. At lower wind speeds the wind shear increases linearly with wind speed.

Given these observations the expected wind shear at extreme wind speeds is summarized below.

Expected wind shear at extreme wind speeds	0.11
--	------

8.1.8 Extreme Wind Shear (EWS)

To estimate the site-specific extreme wind shear, it is recommended to use equations (27) and (28) in section 6.3.3.7 of the IEC 61400-1 [2] with site-specific values for the ambient turbulence standard deviation together with the site-specific wind shear exponent.

8.1.9 Turbulence at Extreme Wind speed

The turbulence model is not based on site measurements, therefore turbulence at extreme wind speed is not changed from the main report [1].

8.1.10 Extreme Turbulence Model (ETM)

The extreme turbulence model is not based on site measurements; therefore, the extreme turbulence model is not changed from the main report [1].

8.1.11 Air Density for Extreme Wind

The air density for extreme wind conditions is found based on average temperature at high wind speed events. This is calculated as 1.24 kg/m³ for both Position 1 and 2 and has not changed from the main



report. Alternatively, the air density for extreme wind conditions can be taken from GASP [21], which results in a value of 1.22 kg/m^3 .

It was decided to proceed with the air density for extreme wind speeds from the buoys.

Air density for extreme wind speeds (150 m)	1.24 kg/m³
--	------------------------------



8.2 Summary Table of Siting Parameters

The requested omnidirectional siting parameters are summarized in the table below.

Table 35. Summary table of siting parameters (150m).

Parameter	POSITION 1	POSITION 2	POSITION 3
Mean wind speed	10.94 m/s	10.86 m/s	10.97 m/s
Weibull distribution, A parameter (scale)	12.35 m/s	12.26 m/s	12.38 m/s
Weibull distribution, k parameter (shape)	2.36	2.35	2.36
Normal wind profile power law exponent	0.085	0.085	0.085
Turbulence intensity mean value (TI_μ) at a 10-min average wind speed of 15m/s*	5.1%	5.1%	5.1%
Turbulence intensity standard deviation (TI_σ) at a 10-min average wind speed of 15m/s*	2.0%	2.0%	2.0%
Turbulence intensity 90% quantile at a 10-min average wind speed of 15m/s*	7.7%	7.7%	7.7%
Mean air density	1.23 kg/m ³	1.23 kg/m ³	1.23 kg/m ³
Mean air temperature	9.0°C	9.0°C	9.0°C
50-year extreme wind speed	51.8 m/s	51.8 m/s	51.8 m/s
1-year extreme wind speed	29.1 m/s	29.1 m/s	29.1 m/s
Wind shear for extreme wind speed extrapolation	0.11	0.11	0.11
Characteristic turbulence intensity at 50-year extreme wind speed	13.0%	13.0%	13.0%
Air density for extreme wind	1.24 kg/m ³	1.24 kg/m ³	1.24 kg/m ³

*Turbulence values at other wind speeds can be found in Appendix D.



9 Data Package

EMD has submitted datasets in support of this study. These are as far as it is possible provided in accessible formats.

9.1 Raw Buoy Data

The raw data from the three buoys, WS170, WS181 and WS191 are provided as presented to EMD. These are the monthly data conforming to the description in this report.

The files are located in the folder Raw buoy data.

Four sets of data files are provided for each buoy. These the files used in this study:

- LiDAR buoy other parameters
 - Containing temperature data
- LiDAR buoy position data
 - Containing a time series record of the buoy location.
- LiDAR buoy wind parameters
 - Containing wind speed and wind direction data
- LiDAR buoy wind stats
 - Containing a record of returned data packages (data quality signal)

Please refer to Fugro's documentation for details on the content and data structure of the files [22]

For convenience, the raw data files are combined in a single text file. The text file can be imported directly into windPRO, but as an open format, it is generally accessible. Please note that maximum wind speed and vertical wind speed are only prepared for 150 m height data series. The datasets include a manual quality filtering by EMD.

- Lot 1 raw data 2y.txt
- Lot 2 raw data 2y.txt

Both datasets are included as windPRO Meteo objects in an Object export file

- Raw buoy data 2y.wpobjects

The object export files can be imported into windPRO 4.0 by right-clicking in the Object list and select Import -> Import from windPRO object import file.



9.2 Filtered and Repaired LiDAR Data

Datasets for the filtered and repaired datasets are provided. The filter and repair process is described in section 3.4.3. The two datasets represent two years of data, though with a gap from medio March 2023 to medio June 2023. The text file can be imported directly into windPRO, but as an open format, it is generally accessible.

- Lot 1 complete 2y.txt
- Lot 2 complete 2y.txt

The text file includes measurements at all heights. Measurements on the buoy (non-LiDAR data) are for practical reasons set at 4 m. The dataset is organized in columns, grouped by height. Data for a given height with SampleStatus flagged as "1" is disabled by EMD.

The content of the columns is explained in Table 36.

Both datasets are included as windPRO Meteo objects in an Object export file

- Complete 2y buoy data.wpobjects

The object export files can be imported into windPRO 4.0 by right-clicking in the Object list and select Import -> Import from windPRO object import file.



Table 36. Column explanation for data time series.

COLUMN LABEL	DESCRIPTION
TimeStamp	Date and time, dd/mm/yyyy hh.mm
MeanWindSpeedUID_xx,xm	Mean wind speed at height xx.x m, m/s
DirectionUID_xx,xm	Wind direction at height xx.x m, m/s
TurbIntUID_xx,xm	Turbulence intensity at height xx.x m
OtherUID_xx	Number of datapackages received at height xx.x m, m/s
WindSpeedVerticalUID_xx,xm	Vertical wind speed at height xx.x m, m/s
MaxWindspeedUID_xx,xm	Maximum wind speed at height xx.x m, m/s
OtherUID_xx,xm	Info flag at height xx.x m
TemperatureUID_4.0m,xm	Temperature at 4m, °C
RelativeHumidity_UID_4.0m,xm	Relative humidity at 4m, %
PressureUID_4.0m,xm	Pressure at 4m, hPa
Comment_xx,xm	Comments for height xx.x m (not used)
TimeStampStatus_12,0m	Internal setting for WindPRO
SampleStatus_12,0m	Status flag on entire sample: 0: OK, 1: disabled, 2: below limit, 4: above limit, 8: duplicate, 16: null value, 32: missing, 128: other error
DataStatus_yyyy_xx,xm	Status flag for parameter yyyy flagged at height xx.x m. Settings as for Sample Status.
DataStatus.....	Datastatus for other parameters.



9.3 Long-term Corrected LiDAR data

The long-term corrected time series at Position 1, 2 and 3 are included in the data package. Position 1 and 2 (WS179 and WS181) include all LiDAR measurement heights. Position 3 only includes the 150 m height.

- Position 1 Lot 1 LTC.txt
- Position 2 Lot 2 LTC.txt
- Position 3 LTC.txt

Parameters included are wind speed and wind direction. Data format follows the format described above. The text file can be imported directly into windPRO, but as an open format, it is generally accessible.

All three datasets are included as windPRO Meteo objects in an Object export file.

- LTC Position 1-3 2y.wpobjects

The object export files can be imported into windPRO 4.0 by right-clicking in the Object list and select Import -> Import from windPRO object import file.

9.4 EMD-WRF Dataset

The EMD-WRF datasets for the Position 1 (Lot 1), Position 2 (Lot 2) and Position 3 are included in the data package. Compared to the data from the main report, the datasets for Position 1 and Position 2 are extended to include 2023 data.

Text file export with selected parameters are included for each location

- EMD-WRF Position 1.txt
- EMD-WRF Position 2.txt
- EMD-WRF Position 3.txt

The data columns are described in Table 37.

All EMD-WRF datasets are included as windPRO Meteo objects in an Object export file

- EMD-WRF Position 1-3.wpobjects

The object export file can be imported into windPRO 4.0 by right-clicking in the Object list and select Import -> Import from windPRO object import file. The object export file includes more parameters than presented in the text file.



Table 37. Column explanation for EMD-WRF data time series.

COLUMN LABEL	DESCRIPTION
TimeStamp	Date and time, dd/mm/yyyy hh.mm
MeanWindSpeedUID_xx,xm	Mean wind speed at height xx.x m, m/s
DirectionUID_xx,xm	Wind direction at height xx.x m, m/s
TurbIntUID_xx,xm	Turbulence intensity at height xx.x m
TemperatureUID_100,0m	Temperature at height xx.x m
Comment_xx,xm	Comments for height xx.x m (not used)
TimeStampStatus_12,0m	Internal setting for WindPRO
SampleStatus_12,0m	Status flag on entire sample: 0: OK, 1: disabled, 2: below limit, 4: above limit, 8: duplicate, 16: null value, 32: missing, 128: other error
DataStatus_yyyy_xx,xm	Status flag for parameter yyyy flagged at height xx.x m. Settings as for Sample Status.
DataStatus	Datastatus for other parameters.

9.5 Turbulence Data

The FINO3 dataset was used as primary data for the turbulence analysis. Data for the measurement heights 91, 71 and 51 m are included in the data package.

- FINO3 4y combined anemometers.txt

Parameters included are wind speed, wind direction and turbulence intensity. Data format follows the format described above. The text file can be imported directly into windPRO, but as an open format, it is generally accessible.

The FINO3 dataset is included as windPRO Meteo objects in an Object export file.

- FINO3 4y combined anemometers.wpobjects

The object export file can be imported into windPRO 3.6 by right-clicking in the Object list and select Import -> Import from windPRO object import file. The object export file includes more parameters than presented in the text file.



9.6 Wind Resource Map/Gradient File

The wind resource map used as a gradient file in section 7.1 is provided as an .rsf file (recognized WAsP format).

- Grid map_Res_500_Hub_150,0_0._calibrated_Res map recalibrated buoy 1+2 interp linear 2y _150,0m.rsf



10 References

- [1] EMD, "Site Wind Conditions Assessment - Energy Island North Sea," May 2023.
- [2] IEC, International Standard IEC 61400-1 ed. 4: Wind Turbines - Part 1: Design Requirements, 2019.
- [3] IEC, International Standard IEC 61400-3-1 ed. 1, Wind Energy generation systems - Part 3-1: Design requirements for fixed offshore wind turbines, 2019.
- [4] Eurocode, EN1991-1-4: Eurocode 1: Actions on structures - Part 1-4: General actions - Wind actions., 2005.
- [5] Eurocode, EN1991-1-4 DK NA, 2007.
- [6] Dansk Standard, DS 472 Ed. 2: Forudsætninger for vindmøllekonstruktioner i Danmark, 2007.
- [7] IEC, IEC, IEC CD 61400-15-1, Wind energy generation systems – Part 15-1: Site suitability input conditions for wind power plants, 2021.
- [8] Energinet, "Scope of Services - Site Wind Conditions Assessment," 2022.
- [9] Fugro, "Energy Islands Floating LiDAR Measurements, Monthly reports for Lot 1, Lot 2, volume 1-24," 2022-2024.
- [10] Fugro, "Summary Report of Major Events, Energy Islands - Floating LiDAR Measurements, 8 volumes," 2022-2023.
- [11] DNV, "ZX862, Independent analysis and reporting of ZX LiDARs performance verification executed by Zephir Ltd. At the UK Remote Sensing Test Site," 2021.
- [12] DNV, "WS191, Independent performance verification of Seawatch Wind Lidar Buoy at Frøya, Norway," 2022.
- [13] EMD International A/S, "WindPRO 4.0 User Manual," 2023.
- [14] DNV-GL, "Type ZX300 LIDAR, Remote Sensing Device Type-specific Classification Summary, Report No.: GLGH-4275 18 14741 258-R-0003, Rev. D," 2018.
- [15] DNV, "WS170, Independent performance verification of Seawatch Wind Lidar Buoy at the LEG offshore platform," 2021.
- [16] DNV, "WS181, Independent performance verification of Seawatch Wind Lidar Buoy at Frøya, Norway," 2021.
- [17] Carbon Trust , "Carbon Trust Offshore wind Accelerator Roadmap for the Commercial Acceptance of Floating LiDAR Technology, Version 2.0," 2018.
- [18] OWA, "Lidar Uncertainty Standard Review Methodology Review and Recommendations, OWA Report 2017-001," 2018.
- [19] S. Liléo, E. Berge, O. Undheim, R. Klinkert and R. Bredesen, "Long-term correction of wind speed measurements - State of the art, guidelines and future work," Kjeller Vindteknikk, Norway, 2013.
- [20] J. e. a. Wohland, "Mitigating a century of European renewable variability with transmission and informed siting," *Environ. Res. Lett.*, vol. 16, no. 064026, 2021.
- [21] X. G. e. a. Larsén, "DTU Wind Energy E-Report-0208: Calculation of Global Atlas of Siting Parameters," 2020.
- [22] Fugro Norway AS, "SWLB measurements at Energy Islands, C75486_Project_Measurement_Plan_All_Lots 05," 2022.



Appendix A. Verification and Classification Uncertainty

Verification uncertainty at 140 m height for WS170 [15].

WS170 height 140 m													
BIN lower [m/s]	BIN upper [m/s]	# of 10 min data sets	V _{std} [m/s]	V _{ref} [m/s]	V _{maxstd} [m/s]	V _{minstd} [m/s]	Std _{Vstd} [m/s]	Std _{Vstd/Vn} [m/s]	Mean deviation [%]	RSD Mounting uncertainty [%]	Separation Uncertainty [%]	V _{ref} Uncertainty [%]	V _{std} Uncertainty (k=1) [%]
3.75	4.25	119	4.01	3.98	5.14	3.45	0.25	0.023	0.69%	0.50%	0.01%	2.51%	2.71%
4.25	4.75	146	4.48	4.51	5.99	3.34	0.30	0.025	-0.65%	0.50%	0.01%	2.51%	2.70%
4.75	5.25	167	4.98	4.99	5.92	4.23	0.25	0.019	-0.32%	0.50%	0.01%	2.51%	2.61%
5.25	5.75	184	5.45	5.49	6.55	4.52	0.25	0.018	-0.81%	0.50%	0.01%	2.51%	2.71%
5.75	6.25	180	5.94	6.01	7.14	5.18	0.26	0.019	-1.24%	0.50%	0.01%	2.51%	2.86%
6.25	6.75	192	6.38	6.49	7.49	5.86	0.26	0.018	-1.57%	0.50%	0.01%	2.51%	3.07%
6.75	7.25	181	6.84	6.98	7.68	6.17	0.25	0.019	-1.95%	0.50%	0.01%	2.51%	3.23%
7.25	7.75	130	7.27	7.47	8.26	6.07	0.33	0.029	-2.66%	0.50%	0.01%	2.51%	3.71%
7.75	8.25	92	7.75	7.98	8.54	6.70	0.31	0.032	-2.93%	0.50%	0.01%	2.51%	3.92%
8.25	8.75	82	8.31	8.50	9.60	7.41	0.32	0.035	-2.24%	0.50%	0.01%	2.51%	3.42%
8.75	9.25	88	8.78	8.99	9.76	8.03	0.29	0.031	-2.34%	0.50%	0.01%	2.51%	3.49%
9.25	9.75	72	9.33	9.48	10.60	8.35	0.39	0.046	-1.63%	0.50%	0.01%	2.51%	3.07%
9.75	10.25	72	9.76	9.98	10.93	8.78	0.43	0.050	-2.22%	0.50%	0.01%	2.51%	3.43%
10.25	10.75	89	10.34	10.53	11.14	9.25	0.33	0.035	-1.75%	0.50%	0.01%	2.51%	3.12%
10.75	11.25	82	10.80	10.99	11.81	9.68	0.38	0.042	-1.59%	0.50%	0.01%	2.51%	3.09%
11.25	11.75	73	11.30	11.46	12.16	10.72	0.32	0.038	0.70%	0.50%	0.01%	2.51%	2.70%
11.75	12.25	45	11.71	12.02	12.41	10.18	0.42	0.063	-2.60%	0.50%	0.01%	2.51%	3.69%
12.25	12.75	55	12.26	12.50	13.42	11.19	0.46	0.063	-1.89%	0.50%	0.01%	2.51%	3.22%
12.75	13.25	38	12.92	12.99	13.74	11.71	0.36	0.058	-0.59%	0.50%	0.01%	2.51%	2.66%
13.25	13.75	33	13.29	13.48	14.22	11.80	0.51	0.089	-1.38%	0.50%	0.01%	2.51%	2.98%
13.75	14.25	18	13.59	14.01	14.47	12.97	0.49	0.116	-3.05%	0.50%	0.01%	2.51%	4.07%
14.25	14.75	23	14.50	14.52	15.89	13.73	0.53	0.111	-0.10%	0.50%	0.01%	2.51%	2.67%
14.75	15.25	22	14.66	15.01	15.70	13.79	0.45	0.095	-2.32%	0.50%	0.01%	2.51%	3.52%
15.25	15.75	12	15.14	15.58	15.97	13.81	0.55	0.160	-2.78%	0.50%	0.01%	2.51%	3.93%
15.75	16.25	17	15.75	15.94	16.36	14.66	0.50	0.121	-1.22%	0.50%	0.01%	2.51%	2.94%

Verification uncertainty at 120 m height for WS181 [16].

WS181 height 120 m														
BIN lower [m/s]	BIN upper [m/s]	# of 10 min data sets	V _{std} [m/s]	V _{ref} [m/s]	V _{mm} [m/s]	V _{maxstd} [m/s]	V _{minstd} [m/s]	Std _{Vstd} [m/s]	Std _{Vstd/Vn} [m/s]	Mean deviation [%]	RSD Mounting uncertainty [%]	Separation Uncertainty [%]	V _{ref} Uncertainty [%]	V _{std} Uncertainty (k=1) [%]
3.75	4.25	115	4.07	4.00	5.65	3.04	0.36	0.033	1.68%	0.50%	0.19%	1.84%	2.67%	
4.25	4.75	118	4.56	4.48	5.47	3.63	0.30	0.028	1.83%	0.50%	0.19%	1.76%	2.66%	
4.75	5.25	113	5.11	4.99	6.38	4.20	0.34	0.032	2.36%	0.50%	0.19%	1.67%	3.00%	
5.25	5.75	107	5.61	5.49	7.28	4.58	0.41	0.040	2.19%	0.50%	0.19%	1.64%	2.88%	
5.75	6.25	89	6.12	6.01	7.59	5.59	0.32	0.034	1.86%	0.50%	0.19%	1.73%	2.65%	
6.25	6.75	70	6.55	6.48	7.30	5.99	0.30	0.036	0.94%	0.50%	0.19%	1.65%	2.05%	
6.75	7.25	81	7.08	7.00	7.98	6.21	0.31	0.035	1.08%	0.50%	0.19%	1.52%	2.00%	
7.25	7.75	100	7.51	7.50	8.99	6.74	0.33	0.033	0.17%	0.50%	0.19%	1.55%	1.71%	
7.75	8.25	100	8.12	8.00	9.47	7.35	0.32	0.032	1.57%	0.50%	0.19%	1.49%	2.27%	
8.25	8.75	110	8.55	8.49	9.51	7.70	0.38	0.036	0.73%	0.50%	0.19%	1.47%	1.78%	
8.75	9.25	102	9.03	9.02	10.01	7.93	0.38	0.038	0.14%	0.50%	0.19%	1.52%	1.67%	
9.25	9.75	114	9.58	9.50	10.53	8.51	0.37	0.034	0.79%	0.50%	0.19%	1.44%	1.76%	
9.75	10.25	65	10.00	9.97	10.77	9.20	0.34	0.042	0.29%	0.50%	0.19%	1.43%	1.61%	
10.25	10.75	62	10.55	10.48	11.44	9.92	0.34	0.043	0.66%	0.50%	0.19%	1.47%	1.75%	
10.75	11.25	91	11.09	10.96	12.19	8.88	0.44	0.046	1.12%	0.50%	0.19%	1.45%	1.95%	
11.25	11.75	70	11.53	11.50	12.46	9.56	0.47	0.056	0.32%	0.50%	0.19%	1.47%	1.67%	
11.75	12.25	52	12.01	11.99	13.74	11.12	0.45	0.063	0.16%	0.50%	0.19%	1.49%	1.68%	
12.25	12.75	38	12.62	12.52	13.41	11.78	0.38	0.061	0.76%	0.50%	0.19%	1.54%	1.86%	
12.75	13.25	44	13.07	12.97	14.23	12.38	0.41	0.062	0.80%	0.50%	0.19%	1.50%	1.85%	
13.25	13.75	35	13.54	13.50	14.31	12.99	0.35	0.059	0.30%	0.50%	0.19%	1.69%	1.85%	
13.75	14.25	30	14.07	14.02	14.77	13.17	0.40	0.073	0.32%	0.50%	0.19%	1.66%	1.85%	
14.25	14.75	53												
14.75	15.25	58												
15.25	15.75	45												
15.75	16.25	22												



Verification uncertainty at 120 m height for WS191 [12]

WS191 height 120 m													
BIN lower [m/s]	BIN upper [m/s]	# of 10 min data sets	V _{FLS} [m/s]	V _{REF} [m/s]	V _{FLSmax} [m/s]	V _{FLSmin} [m/s]	Std _{V_{FLS}} [m/s]	Std _{V_{FLS}} / \sqrt{n} [m/s]	Mean deviation [%]	Mounting uncertainty [%]	Separation Uncertainty [%]	V _{REF} Uncertainty (k=1) [%]	V _{FLS} Uncertainty [%]
3.75	4.25	70	4.08	3.99	4.98	3.39	0.35	0.041	2.15%	0.50%	0.18%	1.68%	2.96%
4.25	4.75	50	4.66	4.52	6.27	3.97	0.36	0.051	3.08%	0.50%	0.18%	1.60%	3.68%
4.75	5.25	61	5.06	4.96	7.87	4.15	0.50	0.064	2.04%	0.50%	0.18%	1.57%	2.92%
5.25	5.75	49	5.58	5.49	6.72	3.83	0.44	0.063	1.70%	0.50%	0.18%	1.68%	2.69%
5.75	6.25	61	6.20	6.04	7.59	5.26	0.45	0.057	2.54%	0.50%	0.18%	1.70%	3.24%
6.25	6.75	60	6.64	6.49	7.47	5.79	0.33	0.043	2.34%	0.50%	0.18%	1.80%	3.07%
6.75	7.25	66	7.14	7.00	8.52	5.75	0.45	0.055	2.04%	0.50%	0.18%	1.76%	2.85%
7.25	7.75	66	7.63	7.51	8.45	5.85	0.47	0.058	1.54%	0.50%	0.18%	1.63%	2.43%
7.75	8.25	59	8.14	8.03	9.28	7.36	0.36	0.047	1.34%	0.50%	0.18%	1.56%	2.20%
8.25	8.75	70	8.54	8.50	9.47	7.08	0.43	0.052	0.43%	0.50%	0.18%	1.48%	1.74%
8.75	9.25	62	9.03	8.97	9.77	8.31	0.32	0.041	0.73%	0.50%	0.18%	1.36%	1.70%
9.25	9.75	48	9.56	9.54	10.62	8.76	0.39	0.056	0.25%	0.50%	0.18%	1.36%	1.60%
9.75	10.25	45	10.04	9.99	11.09	9.32	0.41	0.062	0.50%	0.50%	0.18%	1.38%	1.67%
10.25	10.75	50	10.69	10.50	12.26	9.57	0.52	0.074	1.83%	0.50%	0.18%	1.34%	2.43%
10.75	11.25	62	11.17	11.03	12.08	9.71	0.47	0.059	1.31%	0.50%	0.18%	1.38%	2.05%
11.25	11.75	56	11.61	11.52	13.48	10.07	0.47	0.063	0.85%	0.50%	0.18%	2.04%	2.34%
11.75	12.25	55	12.17	11.99	13.16	11.26	0.44	0.059	1.51%	0.50%	0.18%	1.36%	2.15%
12.25	12.75	53	12.62	12.52	14.35	11.45	0.53	0.073	0.83%	0.50%	0.18%	1.39%	1.80%
12.75	13.25	47	13.30	12.98	15.24	11.93	0.64	0.093	2.44%	0.50%	0.18%	1.49%	2.99%
13.25	13.75	51	13.64	13.50	14.76	12.09	0.56	0.078	1.05%	0.50%	0.18%	1.43%	1.94%
13.75	14.25	39	14.00	13.94	15.16	11.98	0.64	0.103	0.42%	0.50%	0.18%	1.49%	1.79%
14.25	14.75	34	14.61	14.51	16.10	13.41	0.58	0.099	0.68%	0.50%	0.18%	1.49%	1.85%
14.75	15.25	17	15.13	15.05	15.73	14.75	0.26	0.062	0.50%	0.50%	0.18%	1.49%	1.71%
15.25	15.75	23	15.90	15.48	17.09	14.48	0.72	0.150	2.76%	0.50%	0.18%	1.49%	3.31%
15.75	16.25	26	16.29	16.02	18.08	15.34	0.57	0.112	1.69%	0.50%	0.18%	1.49%	2.42%



Type specific classification uncertainty from classification report for ZX300 by DNV-GL [14]

Heights [m]	ZX300 Type Class Table								Preliminary accuracy [%]	Type specific class [%]	Standard uncertainty [%]				
	Max influence (m x Range)														
	EVs Temperature Gradient [%]	Air Temperature [%]	Turbulence Intensity [%]	Wind Veer [%]	Wind Shear [%]	Air Density [%]	Rain [%]	Flow inclination angle [%]							
135	-1.85	-1.81	0.46	0.60	-2.48	*	-0.59	0.71	3.78	2.67	1.54				
130	-2.03	-1.34	0.62	0.57	-1.14	*	-0.60	1.17	3.11	2.20	1.27				
125	-1.80	-1.37	0.70	0.59	-1.20	*	-0.96	1.07	3.07	2.17	1.25				
120	-1.91	-1.13	0.78	0.58	-0.61	*	-0.92	0.96	2.83	2.00	1.16				
115	-1.97	-0.90	0.87	0.57	-0.02	*	-0.87	0.86	2.70	1.91	1.10				
110	-2.03	-0.66	0.95	0.57	0.57	*	-0.80	0.76	2.71	1.92	1.11				
105	-2.09	-0.42	1.04	0.56	1.16	*	-0.77	0.65	2.88	2.04	1.18				
100	-1.52	2.50	1.71	0.00	1.02	-0.45	-0.01	0.55	3.61	2.55	1.47				
95	-1.18	1.96	1.47	0.12	1.17	-0.33	0.20	0.22	2.99	2.12	1.22				
90	-0.82	1.42	1.43	0.23	1.31	-0.20	0.23	-0.11	2.57	1.81	1.05				
85	-0.46	0.91	1.40	0.34	1.52	-0.07	0.25	-0.66	2.43	1.72	0.99				
80	-0.10	0.57	1.50	0.47	1.68	0.05	0.28	-0.63	2.47	1.75	1.01				
75	0.11	0.61	1.61	0.60	2.23	0.18	0.30	-0.59	2.96	2.10	1.21				
70	0.14	1.11	1.33	0.72	2.79	0.31	0.28	-0.56	3.43	2.43	1.40				
65	0.23	1.35	1.09	0.89	2.36	0.75	0.26	-0.52	3.21	2.27	1.31				
60	0.23	1.77	0.86	1.04	2.05	1.13	0.24	-0.49	3.28	2.32	1.34				
55	0.25	2.07	0.71	0.45	1.91	1.51	0.23	*	3.32	2.34	1.35				
50	0.28	1.03	0.52	0.61	1.60	1.89	0.28	*	2.83	2.00	1.15				
45	0.32	0.41	0.39	0.77	1.29	2.27	0.31	*	2.82	2.00	1.15				
40	0.16	-0.22	0.27	0.93	0.99	2.66	0.35	*	3.03	2.14	1.24				
35	0.10	-0.61	0.41	0.45	0.13	0.48	0.38	*	1.07	0.75	0.44				
30	0.03	-0.76	0.53	0.34	-0.44	-0.41	0.41	*	1.23	0.87	0.50				
25	0.02	-0.78	0.67	0.29	-1.01	-1.30	0.45	*	2.01	1.42	0.82				
20	0.00	-0.71	0.82	0.23	-1.58	-2.18	0.48	*	2.95	2.09	1.21				

* EV was not assessed in the height



**Appendix B. Filtered and Repaired Dataset:
Position 1 (Lot 1), Position 2 (Lot
2)**



Project:

Energy Island North Sea

Licensed user:

EMD International A/S

Niels Jernes Vej 10

DK-9220 Aalborg Ø

+45 6916 4850

Thomas Sørensen / ts@emd.dk

Calculated:

06/03/2024 09.29

Meteo data report - Frequency distribution (TAB file data)**Mast:** Lot 1 complete 2y ; Complete period **Period:** Full period: 15/11/2021 - 15/11/2023 (24,0 months)**Frequency distribution (TAB file data)**

270,00m - Subst

Bin	Start	End	Sum	0-N	1-NNE	2-ENE	3-E	4-ESE	5-SSE	6-S	7-SSW	8-WSW	9-W	10-WNW	11-NNW
Mean			11,49	7,86	6,57	8,42	11,66	12,07	11,85	11,16	11,70	11,72	11,89	12,15	12,46
0	0,49	2	0	2	0	0	0	0	0	0	0	0	0	0	0
1	0,50	1,49	741	87	79	91	75	48	54	49	47	47	29	59	76
2	1,50	2,49	1818	182	129	216	157	136	151	143	171	138	120	132	143
3	2,50	3,49	2532	249	254	240	141	213	149	136	225	278	180	223	244
4	3,50	4,49	3569	297	277	241	221	288	188	220	229	424	400	452	332
5	4,50	5,49	4306	365	288	250	255	257	217	238	304	638	569	528	397
6	5,50	6,49	5018	400	281	251	262	308	207	388	485	580	704	686	466
7	6,50	7,49	5841	352	257	234	328	326	240	526	621	766	785	794	612
8	7,50	8,49	6202	294	231	216	313	311	305	614	708	1003	777	795	635
9	8,50	9,49	5807	204	149	171	235	316	311	562	692	940	838	745	644
10	9,50	10,49	5955	202	82	184	339	382	235	492	732	894	810	928	675
11	10,50	11,49	6120	154	60	178	339	435	357	356	659	890	938	946	808
12	11,50	12,49	6128	122	52	175	316	568	408	320	620	816	952	962	807
13	12,50	13,49	5784	117	36	117	337	448	472	376	567	755	838	960	761
14	13,50	14,49	5223	80	35	145	278	411	442	372	524	720	704	805	707
15	14,50	15,49	4640	77	23	131	177	479	343	350	519	610	682	659	590
16	15,50	16,49	4226	79	13	104	92	477	318	326	469	519	689	586	554
17	16,50	17,49	3356	56	11	56	87	318	248	247	429	469	467	484	484
18	17,50	18,49	2889	50	11	35	117	246	271	201	387	450	389	386	346
19	18,50	19,49	2270	30	2	29	91	167	189	181	260	340	358	256	367
20	19,50	20,49	1897	13	2	20	56	119	120	148	212	315	268	232	392
21	20,50	21,49	1623	18	5	2	68	97	75	100	155	315	220	248	320
22	21,50	22,49	1289	9	3	1	87	60	67	77	126	211	196	251	201
23	22,50	23,49	903	2	3	2	73	45	47	54	78	104	110	189	196
24	23,50	24,49	765	10	1	4	60	72	27	33	65	107	91	181	114
25	24,50	25,49	556	2	2	1	71	98	12	26	37	56	54	125	72
26	25,50	26,49	350	0	3	6	69	57	1	12	26	43	31	51	51
27	26,50	27,49	225	2	7	3	57	26	1	7	12	21	23	43	23
28	27,50	28,49	117	0	3	5	33	6	0	0	8	12	17	23	10
29	28,50	29,49	67	1	2	3	7	3	0	0	1	13	9	17	11
30	29,50	30,49	67	0	1	3	13	1	0	0	0	10	8	26	5
31	30,50	31,49	81	0	0	0	35	0	0	0	0	4	13	20	9
32	31,50	32,49	50	0	0	0	19	0	0	0	0	0	9	18	4
33	32,50	33,49	31	0	0	0	6	0	0	0	0	0	6	15	4
34	33,50	34,49	11	0	0	0	1	0	0	0	0	0	4	6	0
35	34,50	35,49	6	0	0	0	0	0	0	0	0	0	2	3	1
36	35,50	36,49	1	0	0	0	0	0	0	0	0	0	1	0	0
37	36,50	37,49	0	0	0	0	0	0	0	0	0	0	0	0	0
38	37,50	38,49	0	0	0	0	0	0	0	0	0	0	0	0	0
39	38,50	39,49	0	0	0	0	0	0	0	0	0	0	0	0	0
40	39,50	40,49	0	0	0	0	0	0	0	0	0	0	0	0	0
41	40,50	0	0	0	0	0	0	0	0	0	0	0	0	0	0



Project:

Energy Island North Sea

Licensed user:

EMD International A/S

Niels Jernes Vej 10

DK-9220 Aalborg Ø

+45 6916 4850

Thomas Sørensen / ts@emd.dk

Calculated:

06/03/2024 09.29

Meteo data report - Frequency distribution (TAB file data)**Mast:** Lot 1 complete 2y ; Complete period **Period:** Full period: 15/11/2021 - 15/11/2023 (24,0 months)**Frequency distribution (TAB file data)**

240,00m - Subst															
Bin	Start	End	Sum	0-N	1-NNE	2-ENE	3-E	4-ESE	5-SSE	6-S	7-SSW	8-WSW	9-W	10-WNW	11-NNW
Mean			11,39	7,90	6,56	8,36	11,68	11,95	11,84	11,10	11,59	11,60	11,77	11,97	12,35
0	0,49	1	0	1	0	0	0	0	0	0	0	0	0	0	0
1	0,50	1,49	742	81	79	102	73	58	44	50	44	39	32	60	80
2	1,50	2,49	1823	174	121	220	154	134	145	152	168	152	133	138	132
3	2,50	3,49	2595	228	269	261	133	226	163	156	230	265	184	241	239
4	3,50	4,49	3616	298	285	245	214	291	183	192	240	432	403	479	354
5	4,50	5,49	4412	347	281	268	264	258	229	257	322	642	590	533	421
6	5,50	6,49	5018	409	273	256	277	295	204	380	504	582	683	664	491
7	6,50	7,49	5935	366	263	228	328	347	229	527	668	749	803	801	626
8	7,50	8,49	6240	315	238	212	320	316	314	605	679	1027	777	806	631
9	8,50	9,49	5911	180	149	181	239	345	310	589	691	947	856	797	627
10	9,50	10,49	6062	220	83	168	351	392	251	491	718	893	852	947	696
11	10,50	11,49	6074	147	47	196	334	460	337	387	628	885	935	907	811
12	11,50	12,49	6194	126	56	168	301	550	379	347	639	850	965	1012	801
13	12,50	13,49	5844	103	34	129	350	464	491	367	546	750	831	977	802
14	13,50	14,49	5214	86	33	133	287	390	453	413	555	725	702	748	689
15	14,50	15,49	4676	78	30	139	191	521	356	347	496	618	697	648	555
16	15,50	16,49	4244	75	8	113	107	474	315	338	492	494	682	559	587
17	16,50	17,49	3426	64	11	51	94	314	281	249	431	487	498	468	478
18	17,50	18,49	2841	45	11	37	119	228	276	191	393	418	408	381	334
19	18,50	19,49	2235	20	8	34	91	159	180	201	260	330	319	236	397
20	19,50	20,49	1881	18	2	13	55	113	112	132	182	349	284	247	374
21	20,50	21,49	1540	21	2	4	73	95	70	96	164	286	205	242	282
22	21,50	22,49	1178	5	3	2	99	53	70	81	101	151	168	232	213
23	22,50	23,49	887	6	2	5	66	56	25	47	80	121	106	194	179
24	23,50	24,49	682	3	2	2	56	81	30	28	54	85	74	157	110
25	24,50	25,49	491	5	1	3	72	87	6	19	27	58	52	93	68
26	25,50	26,49	313	3	5	2	76	50	2	10	23	22	33	49	38
27	26,50	27,49	185	0	7	4	54	21	0	3	12	13	15	36	20
28	27,50	28,49	94	1	3	7	20	6	0	0	6	10	9	25	7
29	28,50	29,49	73	0	2	3	16	2	0	0	0	12	13	14	11
30	29,50	30,49	68	0	0	1	20	0	0	0	0	5	7	27	8
31	30,50	31,49	63	0	0	0	25	0	0	0	0	2	9	20	7
32	31,50	32,49	41	0	0	0	14	0	0	0	0	0	7	15	5
33	32,50	33,49	24	0	0	0	7	0	0	0	0	0	5	8	4
34	33,50	34,49	8	0	0	0	2	0	0	0	0	0	2	2	2
35	34,50	35,49	4	0	0	0	0	0	0	0	0	0	3	1	0
36	35,50	36,49	1	0	0	0	0	0	0	0	0	0	1	0	0
37	36,50	37,49	1	0	0	0	0	0	0	0	0	0	1	0	0
38	37,50	38,49	1	0	0	0	0	0	0	0	0	0	0	1	0
39	38,50	39,49	0	0	0	0	0	0	0	0	0	0	0	0	0
40	39,50	40,49	0	0	0	0	0	0	0	0	0	0	0	0	0
41	40,50	0	0	0	0	0	0	0	0	0	0	0	0	0	0



Project:

Energy Island North Sea

Licensed user:

EMD International A/S

Niels Jernes Vej 10

DK-9220 Aalborg Ø

+45 6916 4850

Thomas Sørensen / ts@emd.dk

Calculated:

06/03/2024 09.29

Meteo data report - Frequency distribution (TAB file data)**Mast:** Lot 1 complete 2y ; Complete period **Period:** Full period: 15/11/2021 - 15/11/2023 (24,0 months)**Frequency distribution (TAB file data)**

200,00m - Subst															
Bin	Start	End	Sum	0-N	1-NNE	2-ENE	3-E	4-ESE	5-SSE	6-S	7-SSW	8-WSW	9-W	10-WNW	11-NNW
Mean			11,25	7,83	6,47	8,37	11,61	11,86	11,75	11,02	11,43	11,40	11,59	11,80	12,15
0	0,49	4	1	3	0	0	0	0	0	0	0	0	0	0	0
1	0,50	1,49	764	76	84	111	72	47	52	57	35	48	40	63	79
2	1,50	2,49	1854	173	138	224	158	127	157	140	180	140	143	136	138
3	2,50	3,49	2597	213	278	255	163	219	158	161	248	261	179	223	239
4	3,50	4,49	3758	305	281	227	224	325	175	190	232	478	434	520	367
5	4,50	5,49	4452	355	298	284	243	256	233	254	314	639	590	538	448
6	5,50	6,49	5170	434	255	274	298	293	204	388	532	588	706	682	516
7	6,50	7,49	6051	353	261	246	343	328	243	543	720	780	772	823	639
8	7,50	8,49	6069	286	234	207	345	293	295	565	673	974	778	784	635
9	8,50	9,49	5995	184	139	182	236	370	313	631	695	947	857	787	654
10	9,50	10,49	6279	226	92	189	362	417	280	522	719	921	874	982	695
11	10,50	11,49	6226	153	49	193	335	486	326	364	637	951	961	910	861
12	11,50	12,49	6205	110	54	172	334	567	389	362	618	860	948	1020	771
13	12,50	13,49	5951	97	41	142	376	425	518	378	578	835	824	940	797
14	13,50	14,49	5369	91	39	137	293	446	479	414	583	759	685	774	669
15	14,50	15,49	4730	68	21	138	193	525	409	365	520	575	737	630	549
16	15,50	16,49	4223	74	10	114	113	488	324	315	501	499	651	523	611
17	16,50	17,49	3426	64	15	45	107	307	298	262	424	505	482	483	434
18	17,50	18,49	2690	46	7	45	109	200	249	216	347	404	391	332	344
19	18,50	19,49	2169	23	5	29	90	142	172	176	249	337	331	249	366
20	19,50	20,49	1843	16	3	14	68	110	85	138	202	355	245	228	379
21	20,50	21,49	1400	12	2	0	79	82	73	106	136	202	199	241	268
22	21,50	22,49	1005	6	2	2	92	52	55	49	83	118	131	218	197
23	22,50	23,49	794	6	2	5	70	63	39	35	66	112	86	167	143
24	23,50	24,49	623	3	2	4	61	84	9	21	33	63	77	150	116
25	24,50	25,49	436	2	2	3	82	79	8	18	30	36	35	87	54
26	25,50	26,49	233	3	5	3	73	36	1	5	13	13	15	34	32
27	26,50	27,49	155	1	5	7	50	17	0	2	10	12	13	23	15
28	27,50	28,49	76	0	2	4	17	4	0	0	2	13	7	23	4
29	28,50	29,49	63	0	3	3	15	0	0	0	0	3	9	22	8
30	29,50	30,49	53	0	0	1	23	0	0	0	0	0	3	19	7
31	30,50	31,49	60	0	0	0	27	0	0	0	0	0	11	13	9
32	31,50	32,49	31	0	0	0	9	0	0	0	0	0	8	13	1
33	32,50	33,49	20	0	0	0	3	0	0	0	0	0	3	10	4
34	33,50	34,49	2	0	0	0	1	0	0	0	0	0	1	0	0
35	34,50	35,49	1	0	0	0	0	0	0	0	0	0	0	1	0
36	35,50	36,49	1	0	0	0	0	0	0	0	0	0	1	0	0
37	36,50	37,49	0	0	0	0	0	0	0	0	0	0	0	0	0
38	37,50	38,49	0	0	0	0	0	0	0	0	0	0	0	0	0
39	38,50	39,49	0	0	0	0	0	0	0	0	0	0	0	0	0
40	39,50	40,49	0	0	0	0	0	0	0	0	0	0	0	0	0
41	40,50	0	0	0	0	0	0	0	0	0	0	0	0	0	0



Project:

Energy Island North Sea

Licensed user:

EMD International A/S

Niels Jernes Vej 10

DK-9220 Aalborg Ø

+45 6916 4850

Thomas Sørensen / ts@emd.dk

Calculated:

06/03/2024 09.29

Meteo data report - Frequency distribution (TAB file data)**Mast:** Lot 1 complete 2y ; Complete period **Period:** Full period: 15/11/2021 - 15/11/2023 (24,0 months)**Frequency distribution (TAB file data)**

180,00m - Subst															
Bin	Start	End	Sum	0-N	1-NNE	2-ENE	3-E	4-ESE	5-SSE	6-S	7-SSW	8-WSW	9-W	10-WNW	11-NNW
Mean			11,15	7,80	6,45	8,39	11,57	11,80	11,71	10,91	11,30	11,33	11,46	11,65	12,08
0	0,49	4	1	0	1	0	0	0	0	0	0	0	0	1	0
1	0,50	1,49	753	85	81	103	67	50	53	50	41	45	48	70	60
2	1,50	2,49	1908	181	150	224	151	126	136	151	197	152	145	143	152
3	2,50	3,49	2605	214	265	268	180	223	159	177	239	237	185	235	223
4	3,50	4,49	3814	304	286	224	222	345	166	188	236	494	431	536	382
5	4,50	5,49	4492	350	304	305	239	252	220	244	320	610	612	565	471
6	5,50	6,49	5269	441	245	275	299	298	237	416	534	603	717	689	515
7	6,50	7,49	6101	363	263	237	356	311	251	557	728	781	777	816	661
8	7,50	8,49	6015	280	225	222	331	299	276	594	631	981	781	771	624
9	8,50	9,49	6148	208	152	170	265	372	313	654	709	947	848	847	663
10	9,50	10,49	6284	217	89	186	368	426	284	506	721	918	901	960	708
11	10,50	11,49	6446	153	56	192	372	499	355	396	670	1001	992	924	836
12	11,50	12,49	6228	114	47	175	338	529	404	362	607	866	966	1052	768
13	12,50	13,49	6024	109	30	141	381	427	551	424	609	819	807	940	786
14	13,50	14,49	5471	90	38	143	307	456	504	424	582	788	695	780	664
15	14,50	15,49	4702	79	18	138	187	564	367	353	536	575	745	593	547
16	15,50	16,49	4194	83	15	116	134	496	318	309	488	499	648	502	586
17	16,50	17,49	3379	53	13	59	117	276	328	282	404	491	465	462	429
18	17,50	18,49	2667	41	6	37	127	197	218	212	337	408	399	322	363
19	18,50	19,49	2168	26	4	34	78	144	157	181	248	365	302	254	375
20	19,50	20,49	1668	8	3	9	63	93	84	128	191	306	228	215	340
21	20,50	21,49	1334	11	1	4	82	90	71	79	107	176	185	246	282
22	21,50	22,49	935	8	2	5	82	41	52	46	78	121	104	206	190
23	22,50	23,49	770	2	4	3	77	70	28	35	50	91	102	163	145
24	23,50	24,49	549	8	1	2	65	85	14	14	26	46	68	135	85
25	24,50	25,49	369	1	4	6	80	78	3	11	19	22	20	66	59
26	25,50	26,49	209	5	4	2	60	31	0	6	15	20	9	32	25
27	26,50	27,49	136	0	8	7	48	11	0	0	4	16	9	22	11
28	27,50	28,49	83	0	1	2	20	4	0	0	2	7	8	28	11
29	28,50	29,49	47	0	2	1	17	2	0	0	0	0	5	17	3
30	29,50	30,49	54	0	0	5	20	0	0	0	0	12	13	4	
31	30,50	31,49	56	0	0	1	21	0	0	0	0	0	5	19	10
32	31,50	32,49	31	0	0	0	13	0	0	0	0	0	4	10	4
33	32,50	33,49	9	0	0	0	2	0	0	0	0	0	4	3	0
34	33,50	34,49	3	0	0	0	1	0	0	0	0	0	1	1	0
35	34,50	35,49	1	0	0	0	0	0	0	0	0	0	1	0	0
36	35,50	36,49	0	0	0	0	0	0	0	0	0	0	0	0	0
37	36,50	37,49	0	0	0	0	0	0	0	0	0	0	0	0	0
38	37,50	38,49	0	0	0	0	0	0	0	0	0	0	0	0	0
39	38,50	39,49	0	0	0	0	0	0	0	0	0	0	0	0	0
40	39,50	40,49	0	0	0	0	0	0	0	0	0	0	0	0	0
41	40,50	0	0	0	0	0	0	0	0	0	0	0	0	0	0



Project:

Energy Island North Sea

Licensed user:

EMD International A/S

Niels Jernes Vej 10

DK-9220 Aalborg Ø

+45 6916 4850

Thomas Sørensen / ts@emd.dk

Calculated:

06/03/2024 09.29

Meteo data report - Frequency distribution (TAB file data)**Mast:** Lot 1 complete 2y ; Complete period **Period:** Full period: 15/11/2021 - 15/11/2023 (24,0 months)**Frequency distribution (TAB file data)**

150,00m - Subst																		
Bin	Start	End	Sum	0-N	1-NNE	2-ENE	3-E	4-ESE	5-SSE	6-S	7-SSW	8-WSW	9-W	10-WNW	11-NNW	11,89	11,89	
0	0,49	2	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	
1	0,50	1,49	766	71	101	103	60	43	55	56	40	54	46	68	69			
2	1,50	2,49	1946	191	139	234	161	135	142	155	201	155	134	150	149			
3	2,50	3,49	2640	217	270	240	187	254	154	186	223	236	192	248	233			
4	3,50	4,49	3860	290	288	230	205	336	159	201	218	522	455	557	399			
5	4,50	5,49	4611	360	309	316	254	254	230	258	352	595	630	567	486			
6	5,50	6,49	5441	463	248	265	296	319	220	438	565	623	728	698	578			
7	6,50	7,49	6158	361	252	257	358	286	300	563	705	832	756	830	658			
8	7,50	8,49	6147	280	220	218	366	332	265	609	687	1012	752	764	642			
9	8,50	9,49	6116	196	149	160	271	386	293	657	667	954	885	844	654			
10	9,50	10,49	6562	210	95	212	393	437	276	545	735	981	919	1016	743			
11	10,50	11,49	6525	147	49	200	386	509	388	404	711	948	1009	930	844			
12	11,50	12,49	6478	109	47	170	357	519	495	384	625	942	937	1093	800			
13	12,50	13,49	6332	114	46	162	403	464	636	471	652	892	813	921	758			
14	13,50	14,49	5348	78	36	139	338	479	435	407	602	695	726	772	641			
15	14,50	15,49	4779	80	20	147	199	588	329	381	551	582	734	613	555			
16	15,50	16,49	4043	76	11	115	130	437	312	334	468	482	632	474	572			
17	16,50	17,49	3232	62	9	55	127	277	284	259	412	447	478	423	399			
18	17,50	18,49	2602	33	10	33	124	172	218	229	296	410	388	314	375			
19	18,50	19,49	2040	27	4	21	81	108	138	152	250	362	297	217	383			
20	19,50	20,49	1532	13	2	18	78	112	79	111	135	240	196	226	322			
21	20,50	21,49	1170	10	2	3	74	68	74	55	106	141	141	245	251			
22	21,50	22,49	875	2	3	4	92	50	49	41	58	110	108	177	181			
23	22,50	23,49	668	6	3	2	78	70	19	27	27	64	75	162	135			
24	23,50	24,49	435	4	1	5	65	86	10	8	27	18	33	102	76			
25	24,50	25,49	313	1	4	3	77	69	4	12	16	21	13	57	36			
26	25,50	26,49	191	3	3	4	70	23	0	1	7	20	15	24	21			
27	26,50	27,49	99	0	3	4	37	8	0	0	2	6	3	25	11			
28	27,50	28,49	61	0	6	5	15	1	0	0	0	2	6	19	7			
29	28,50	29,49	51	0	0	3	20	0	0	0	1	0	9	10	8			
30	29,50	30,49	67	0	0	0	31	0	0	0	0	0	10	17	9			
31	30,50	31,49	41	0	0	0	17	0	0	0	0	0	7	12	5			
32	31,50	32,49	14	0	0	1	4	0	0	0	0	0	1	7	1			
33	32,50	33,49	4	0	0	0	0	1	0	0	0	0	1	1	1			
34	33,50	34,49	2	0	0	0	0	1	0	0	0	0	0	0	1	0		
35	34,50	35,49	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
36	35,50	36,49	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
37	36,50	37,49	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
38	37,50	38,49	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
39	38,50	39,49	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
40	39,50	40,49	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
41	40,50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		



Project:

Energy Island North Sea

Licensed user:

EMD International A/S

Niels Jernes Vej 10

DK-9220 Aalborg Ø

+45 6916 4850

Thomas Sørensen / ts@emd.dk

Calculated:

06/03/2024 09.29

Meteo data report - Frequency distribution (TAB file data)**Mast:** Lot 1 complete 2y ; Complete period **Period:** Full period: 15/11/2021 - 15/11/2023 (24,0 months)**Frequency distribution (TAB file data)**

120,00m - Subst															
Bin	Start	End	Sum	0-N	1-NNE	2-ENE	3-E	4-ESE	5-SSE	6-S	7-SSW	8-WSW	9-W	10-WNW	11-NNW
Mean			10,79	7,68	6,46	8,37	11,47	11,52	11,19	10,47	10,87	10,79	11,08	11,29	11,72
0	0,49	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	0,50	1,49	787	92	96	100	56	47	66	49	56	48	40	86	51
2	1,50	2,49	1966	185	137	232	171	134	150	146	178	174	134	149	176
3	2,50	3,49	2691	238	245	240	191	231	154	222	214	238	195	262	261
4	3,50	4,49	3910	252	290	236	225	335	171	198	253	561	474	551	364
5	4,50	5,49	4844	390	307	357	250	262	242	265	394	639	623	586	529
6	5,50	6,49	5513	455	249	279	286	312	238	500	574	600	713	743	564
7	6,50	7,49	6221	400	235	278	335	275	322	568	728	837	771	801	671
8	7,50	8,49	6310	268	204	221	369	320	281	646	702	1067	794	785	653
9	8,50	9,49	6364	211	150	156	332	426	336	663	709	920	932	879	650
10	9,50	10,49	6802	208	97	217	428	432	345	528	764	1050	941	1040	752
11	10,50	11,49	6851	144	61	224	396	526	454	483	719	975	1017	982	870
12	11,50	12,49	6879	110	40	181	400	553	660	449	715	1019	929	1069	754
13	12,50	13,49	6379	123	49	175	404	480	585	449	676	857	836	998	747
14	13,50	14,49	5217	82	35	166	374	500	321	405	636	660	731	718	589
15	14,50	15,49	4576	86	15	123	202	560	317	372	520	487	725	572	597
16	15,50	16,49	3944	61	8	120	148	396	272	362	430	497	622	483	545
17	16,50	17,49	3066	64	10	48	127	258	257	249	357	454	433	422	387
18	17,50	18,49	2457	33	11	26	102	156	195	201	298	403	382	262	388
19	18,50	19,49	1783	18	3	18	89	123	107	110	199	283	217	247	369
20	19,50	20,49	1346	16	4	15	65	87	80	65	120	188	164	230	312
21	20,50	21,49	1017	7	2	9	88	62	73	50	66	118	113	223	206
22	21,50	22,49	763	3	4	4	90	43	33	32	36	58	105	181	174
23	22,50	23,49	573	6	1	1	80	84	16	15	31	38	45	139	117
24	23,50	24,49	375	3	3	5	69	78	6	13	13	22	21	79	63
25	24,50	25,49	254	4	6	7	75	57	3	3	7	16	9	40	27
26	25,50	26,49	152	0	3	5	68	17	1	0	6	7	4	25	16
27	26,50	27,49	71	0	5	4	24	5	0	0	1	3	8	14	7
28	27,50	28,49	50	0	3	3	15	0	0	0	1	0	3	17	8
29	28,50	29,49	58	0	0	2	26	1	0	0	0	0	4	18	7
30	29,50	30,49	54	1	0	2	21	0	0	0	0	11	11	8	
31	30,50	31,49	30	0	0	0	14	0	0	0	0	2	12	2	
32	31,50	32,49	7	0	0	0	4	0	0	0	0	1	1	1	
33	32,50	33,49	3	0	0	1	1	0	0	0	0	0	1	0	
34	33,50	34,49	0	0	0	0	0	0	0	0	0	0	0	0	
35	34,50	35,49	0	0	0	0	0	0	0	0	0	0	0	0	
36	35,50	36,49	0	0	0	0	0	0	0	0	0	0	0	0	
37	36,50	37,49	0	0	0	0	0	0	0	0	0	0	0	0	
38	37,50	38,49	0	0	0	0	0	0	0	0	0	0	0	0	
39	38,50	39,49	0	0	0	0	0	0	0	0	0	0	0	0	
40	39,50	40,49	0	0	0	0	0	0	0	0	0	0	0	0	
41	40,50	0	0	0	0	0	0	0	0	0	0	0	0	0	



Project:

Energy Island North Sea

Licensed user:

EMD International A/S

Niels Jernes Vej 10

DK-9220 Aalborg Ø

+45 6916 4850

Thomas Sørensen / ts@emd.dk

Calculated:

06/03/2024 09.29

Meteo data report - Frequency distribution (TAB file data)**Mast:** Lot 1 complete 2y ; Complete period **Period:** Full period: 15/11/2021 - 15/11/2023 (24,0 months)**Frequency distribution (TAB file data)**

100,00m - Subst															
Bin	Start	End	Sum	0-N	1-NNE	2-ENE	3-E	4-ESE	5-SSE	6-S	7-SSW	8-WSW	9-W	10-WNW	11-NNW
Mean			10,62	7,61	6,44	8,28	11,37	11,42	10,85	10,27	10,66	10,57	10,91	11,16	11,55
0	0,49	4	0	0	2	0	0	1	0	0	0	0	0	1	0
1	0,50	1,49	762	88	91	99	50	47	48	57	58	48	40	74	62
2	1,50	2,49	2005	217	139	212	170	141	153	144	182	163	143	163	178
3	2,50	3,49	2756	245	241	239	203	242	162	225	218	267	194	256	264
4	3,50	4,49	4105	269	296	252	240	315	192	233	278	592	479	578	381
5	4,50	5,49	4830	367	309	350	253	288	223	263	389	631	642	594	521
6	5,50	6,49	5670	462	271	309	257	317	284	511	599	612	725	734	589
7	6,50	7,49	6301	405	218	273	367	275	338	568	767	854	759	803	674
8	7,50	8,49	6517	264	198	210	364	339	324	673	740	1105	793	809	698
9	8,50	9,49	6711	212	149	178	404	445	374	696	740	940	978	934	661
10	9,50	10,49	6962	197	107	220	432	441	406	542	783	1082	943	1019	790
11	10,50	11,49	7205	151	59	239	422	535	557	513	771	1040	1041	1015	862
12	11,50	12,49	7021	100	46	191	431	600	686	446	753	1006	918	1068	776
13	12,50	13,49	6121	116	54	199	398	479	443	416	721	785	781	994	735
14	13,50	14,49	5120	89	28	164	371	527	291	441	606	606	757	658	582
15	14,50	15,49	4470	79	17	128	189	534	274	360	481	526	759	521	602
16	15,50	16,49	3789	73	7	92	140	380	251	342	419	477	577	511	520
17	16,50	17,49	2895	58	11	35	128	221	243	222	329	442	422	383	401
18	17,50	18,49	2333	40	6	21	111	159	167	177	305	401	303	251	392
19	18,50	19,49	1598	17	6	23	81	114	90	93	137	233	202	251	351
20	19,50	20,49	1185	12	2	7	68	91	89	46	81	142	148	227	272
21	20,50	21,49	968	8	2	2	95	59	51	50	60	101	115	223	202
22	21,50	22,49	685	5	5	6	92	60	24	21	38	38	59	174	163
23	22,50	23,49	503	5	1	2	79	83	10	17	23	26	33	124	100
24	23,50	24,49	318	2	4	6	60	78	6	7	14	13	17	59	52
25	24,50	25,49	231	4	4	2	86	49	2	3	8	14	8	31	20
26	25,50	26,49	121	0	4	3	46	17	1	0	4	2	5	25	14
27	26,50	27,49	63	0	4	8	19	3	0	0	0	1	7	16	5
28	27,50	28,49	54	0	2	3	21	0	0	0	0	0	6	16	6
29	28,50	29,49	67	0	0	0	32	0	0	0	0	0	9	18	8
30	29,50	30,49	37	0	0	1	18	0	0	0	0	0	5	11	2
31	30,50	31,49	19	0	0	0	12	0	0	0	0	0	0	5	2
32	31,50	32,49	2	0	0	1	0	0	0	0	0	0	0	1	0
33	32,50	33,49	2	0	0	0	0	1	0	0	0	0	0	1	0
34	33,50	34,49	0	0	0	0	0	0	0	0	0	0	0	0	0
35	34,50	35,49	0	0	0	0	0	0	0	0	0	0	0	0	0
36	35,50	36,49	0	0	0	0	0	0	0	0	0	0	0	0	0
37	36,50	37,49	0	0	0	0	0	0	0	0	0	0	0	0	0
38	37,50	38,49	0	0	0	0	0	0	0	0	0	0	0	0	0
39	38,50	39,49	0	0	0	0	0	0	0	0	0	0	0	0	0
40	39,50	40,49	0	0	0	0	0	0	0	0	0	0	0	0	0
41	40,50	0	0	0	0	0	0	0	0	0	0	0	0	0	0



Project:

Energy Island North Sea

Licensed user:

EMD International A/S

Niels Jernes Vej 10

DK-9220 Aalborg Ø

+45 6916 4850

Thomas Sørensen / ts@emd.dk

Calculated:

06/03/2024 09.29

Meteo data report - Frequency distribution (TAB file data)**Mast:** Lot 1 complete 2y ; Complete period **Period:** Full period: 15/11/2021 - 15/11/2023 (24,0 months)**Frequency distribution (TAB file data)**

90,00m - Subst															
Bin	Start	End	Sum	0-N	1-NNE	2-ENE	3-E	4-ESE	5-SSE	6-S	7-SSW	8-WSW	9-W	10-WNW	11-NNW
Mean			10,51	7,58	6,43	8,25	11,26	11,35	10,62	10,16	10,49	10,44	10,81	11,06	11,46
0	0,49	3	0	0	0	0	0	0	0	1	0	1	0	0	1
1	0,50	1,49	794	107	93	98	55	46	56	60	64	41	39	78	57
2	1,50	2,49	2012	197	154	215	176	130	142	137	186	169	146	169	191
3	2,50	3,49	2827	249	245	236	204	244	167	224	238	286	204	261	269
4	3,50	4,49	4118	250	294	246	237	322	216	232	283	594	496	593	355
5	4,50	5,49	5009	378	322	364	273	282	232	266	444	662	644	608	534
6	5,50	6,49	5833	475	272	304	264	324	316	541	630	618	707	731	651
7	6,50	7,49	6409	411	230	295	360	275	336	578	795	878	794	795	662
8	7,50	8,49	6700	272	197	189	361	366	365	722	784	1068	870	802	704
9	8,50	9,49	6801	209	140	195	412	458	395	696	718	962	975	966	675
10	9,50	10,49	7261	218	108	232	462	476	437	570	835	1117	991	1039	776
11	10,50	11,49	7327	135	57	238	427	606	626	501	758	1077	1002	1055	845
12	11,50	12,49	7035	96	43	208	422	580	657	496	762	983	892	1113	783
13	12,50	13,49	5987	119	71	200	416	474	370	412	725	760	781	955	704
14	13,50	14,49	5120	91	23	158	354	538	264	441	617	585	774	656	619
15	14,50	15,49	4340	80	23	129	191	520	247	379	446	507	728	528	562
16	15,50	16,49	3645	66	7	72	121	375	261	278	388	487	575	489	526
17	16,50	17,49	2875	57	10	23	127	212	209	233	342	447	422	397	396
18	17,50	18,49	2177	29	7	24	106	149	152	168	289	368	281	243	361
19	18,50	19,49	1514	24	3	22	77	119	93	75	124	207	198	220	352
20	19,50	20,49	1228	18	3	9	79	96	86	43	83	135	147	240	289
21	20,50	21,49	877	7	2	6	90	50	46	47	53	73	91	214	198
22	21,50	22,49	639	4	2	1	99	67	24	23	30	30	67	153	139
23	22,50	23,49	467	4	4	6	69	82	9	13	23	24	31	112	90
24	23,50	24,49	334	5	3	8	67	75	3	7	13	18	18	65	52
25	24,50	25,49	199	1	5	3	81	40	3	1	5	5	10	23	22
26	25,50	26,49	111	0	4	3	50	14	0	0	2	3	5	19	11
27	26,50	27,49	62	0	6	7	14	2	0	0	0	0	6	16	11
28	27,50	28,49	61	0	0	2	25	1	0	0	0	0	9	17	7
29	28,50	29,49	46	0	0	0	23	0	0	0	0	0	8	12	3
30	29,50	30,49	42	0	0	1	23	0	0	0	0	0	1	15	2
31	30,50	31,49	11	0	0	0	8	0	0	0	0	0	0	2	1
32	31,50	32,49	2	0	0	0	1	0	0	0	0	0	1	0	0
33	32,50	33,49	1	0	0	0	0	0	0	0	0	0	0	1	0
34	33,50	34,49	0	0	0	0	0	0	0	0	0	0	0	0	0
35	34,50	35,49	0	0	0	0	0	0	0	0	0	0	0	0	0
36	35,50	36,49	0	0	0	0	0	0	0	0	0	0	0	0	0
37	36,50	37,49	0	0	0	0	0	0	0	0	0	0	0	0	0
38	37,50	38,49	0	0	0	0	0	0	0	0	0	0	0	0	0
39	38,50	39,49	0	0	0	0	0	0	0	0	0	0	0	0	0
40	39,50	40,49	0	0	0	0	0	0	0	0	0	0	0	0	0
41	40,50	0	0	0	0	0	0	0	0	0	0	0	0	0	0



Project:

Energy Island North Sea

Licensed user:

EMD International A/S

Niels Jernes Vej 10

DK-9220 Aalborg Ø

+45 6916 4850

Thomas Sørensen / ts@emd.dk

Calculated:

06/03/2024 09.29

Meteo data report - Frequency distribution (TAB file data)**Mast:** Lot 1 complete 2y ; Complete period **Period:** Full period: 15/11/2021 - 15/11/2023 (24,0 months)**Frequency distribution (TAB file data)**

60,00m - Subst															
Bin	Start	End	Sum	0-N	1-NNE	2-ENE	3-E	4-ESE	5-SSE	6-S	7-SSW	8-WSW	9-W	10-WNW	11>NNW
Mean			10,15	7,52	6,30	7,96	10,92	10,95	10,09	9,71	9,99	10,02	10,43	10,83	11,16
0	0,49	1	0	0	0	0	0	0	1	0	0	0	0	0	0
1	0,50	1,49	848	90	94	109	69	52	57	65	67	54	42	76	73
2	1,50	2,49	2094	189	160	242	166	146	110	145	188	185	172	178	213
3	2,50	3,49	3025	307	257	226	229	255	170	219	255	326	240	264	277
4	3,50	4,49	4420	246	299	279	245	346	247	253	326	638	531	602	408
5	4,50	5,49	5224	369	325	375	281	289	269	357	500	654	664	624	517
6	5,50	6,49	6225	492	274	316	302	326	360	559	745	731	740	718	662
7	6,50	7,49	6892	400	202	297	353	362	412	711	896	921	860	818	660
8	7,50	8,49	7482	285	192	244	456	398	472	828	864	1098	980	883	782
9	8,50	9,49	7281	227	149	211	452	537	448	661	854	1029	1024	995	694
10	9,50	10,49	7785	203	115	272	513	626	564	560	868	1183	997	1053	831
11	10,50	11,49	7575	130	58	292	422	660	638	510	836	1055	1033	1094	847
12	11,50	12,49	6568	104	57	235	430	550	386	432	772	865	843	1116	778
13	12,50	13,49	5631	120	44	205	409	467	293	434	690	667	773	848	681
14	13,50	14,49	4792	94	22	121	279	507	236	421	508	553	800	652	599
15	14,50	15,49	4080	68	12	78	165	460	220	343	367	533	701	520	613
16	15,50	16,49	3296	79	7	29	122	311	233	250	372	495	493	467	438
17	16,50	17,49	2577	54	8	25	109	184	176	193	326	413	337	332	420
18	17,50	18,49	1789	26	7	22	119	134	123	103	167	217	245	262	364
19	18,50	19,49	1346	18	2	19	80	109	91	43	108	163	165	220	328
20	19,50	20,49	1014	14	4	5	89	69	67	50	57	80	107	219	253
21	20,50	21,49	717	6	0	7	92	57	33	28	27	42	64	199	162
22	21,50	22,49	568	7	4	3	88	82	18	13	16	27	46	149	115
23	22,50	23,49	381	6	1	7	64	94	7	9	17	14	19	81	62
24	23,50	24,49	232	0	8	10	78	54	1	1	6	5	10	27	32
25	24,50	25,49	129	0	4	2	58	24	0	0	6	1	8	14	12
26	25,50	26,49	85	0	6	7	30	6	0	0	1	1	7	17	10
27	26,50	27,49	59	0	1	3	16	1	0	0	0	0	10	19	9
28	27,50	28,49	52	0	0	0	25	1	0	0	0	0	4	19	3
29	28,50	29,49	42	0	0	1	29	0	0	0	0	0	1	8	3
30	29,50	30,49	19	0	0	0	15	0	0	0	0	0	1	1	2
31	30,50	31,49	1	0	0	0	1	0	0	0	0	0	0	0	0
32	31,50	32,49	0	0	0	0	0	0	0	0	0	0	0	0	0
33	32,50	33,49	1	0	0	0	0	0	0	0	0	0	0	1	0
34	33,50	34,49	0	0	0	0	0	0	0	0	0	0	0	0	0
35	34,50	35,49	0	0	0	0	0	0	0	0	0	0	0	0	0
36	35,50	36,49	0	0	0	0	0	0	0	0	0	0	0	0	0
37	36,50	37,49	0	0	0	0	0	0	0	0	0	0	0	0	0
38	37,50	38,49	0	0	0	0	0	0	0	0	0	0	0	0	0
39	38,50	39,49	0	0	0	0	0	0	0	0	0	0	0	0	0
40	39,50	40,49	0	0	0	0	0	0	0	0	0	0	0	0	0
41	40,50	0	0	0	0	0	0	0	0	0	0	0	0	0	0



Project:

Energy Island North Sea

Licensed user:

EMD International A/S

Niels Jernes Vej 10

DK-9220 Aalborg Ø

+45 6916 4850

Thomas Sørensen / ts@emd.dk

Calculated:

06/03/2024 09.29

Meteo data report - Frequency distribution (TAB file data)**Mast:** Lot 1 complete 2y ; Complete period **Period:** Full period: 15/11/2021 - 15/11/2023 (24,0 months)**Frequency distribution (TAB file data)**

40,00m - Subst															
Bin	Start	End	Sum	0-N	1-NNE	2-ENE	3-E	4-ESE	5-SSE	6-S	7-SSW	8-WSW	9-W	10-WNW	11-NNW
0	0,49	3	0	1	2	0	0	0	0	0	0	0	0	0	0
1	0,50	1,49	910	101	98	120	78	47	53	75	70	66	44	87	71
2	1,50	2,49	2160	204	161	252	164	157	109	158	187	200	166	199	203
3	2,50	3,49	3198	290	274	229	238	266	196	241	274	358	239	283	310
4	3,50	4,49	4708	260	301	297	260	392	256	251	380	676	581	632	422
5	4,50	5,49	5594	391	321	439	295	324	295	437	591	634	678	645	544
6	5,50	6,49	6623	497	272	322	328	380	419	600	844	761	820	728	652
7	6,50	7,49	7582	371	195	279	424	428	552	821	990	1046	937	851	688
8	7,50	8,49	7871	281	209	265	518	504	460	822	938	1081	1032	950	811
9	8,50	9,49	7740	225	153	270	518	595	536	627	916	1101	1022	1050	727
10	9,50	10,49	8012	189	98	338	494	631	603	561	891	1209	1062	1071	865
11	10,50	11,49	7258	120	50	280	460	604	520	463	834	976	966	1130	855
12	11,50	12,49	6278	106	54	193	409	507	307	428	747	795	856	1070	806
13	12,50	13,49	5329	97	34	148	347	463	251	419	587	637	847	807	692
14	13,50	14,49	4435	110	25	101	255	461	210	409	387	525	769	603	580
15	14,50	15,49	3942	79	12	56	154	406	221	312	367	550	657	523	605
16	15,50	16,49	3059	58	13	20	114	264	228	234	386	472	405	434	431
17	16,50	17,49	2151	40	9	29	119	159	165	119	232	315	271	300	393
18	17,50	18,49	1557	18	7	22	101	112	113	59	102	161	216	245	401
19	18,50	19,49	1185	11	2	12	84	110	78	48	81	108	131	244	276
20	19,50	20,49	858	5	3	9	91	62	46	31	43	52	70	223	223
21	20,50	21,49	637	6	4	4	91	78	24	22	19	20	58	178	133
22	21,50	22,49	432	5	2	5	82	97	14	11	8	21	25	97	65
23	22,50	23,49	262	4	4	6	78	64	2	2	13	2	17	35	35
24	23,50	24,49	161	1	2	6	73	24	2	0	6	2	7	19	19
25	24,50	25,49	92	0	7	8	35	5	0	0	1	0	10	16	10
26	25,50	26,49	69	0	5	0	28	2	0	0	0	0	10	19	5
27	26,50	27,49	47	0	0	1	19	0	0	0	0	0	3	16	8
28	27,50	28,49	42	0	0	0	30	0	0	0	0	0	1	9	2
29	28,50	29,49	17	0	0	0	16	0	0	0	0	0	0	1	0
30	29,50	30,49	5	0	0	0	3	0	0	0	0	0	0	2	0
31	30,50	31,49	0	0	0	0	0	0	0	0	0	0	0	0	0
32	31,50	32,49	0	0	0	0	0	0	0	0	0	0	0	0	0
33	32,50	33,49	0	0	0	0	0	0	0	0	0	0	0	0	0
34	33,50	34,49	0	0	0	0	0	0	0	0	0	0	0	0	0
35	34,50	35,49	0	0	0	0	0	0	0	0	0	0	0	0	0
36	35,50	36,49	0	0	0	0	0	0	0	0	0	0	0	0	0
37	36,50	37,49	0	0	0	0	0	0	0	0	0	0	0	0	0
38	37,50	38,49	0	0	0	0	0	0	0	0	0	0	0	0	0
39	38,50	39,49	0	0	0	0	0	0	0	0	0	0	0	0	0
40	39,50	40,49	0	0	0	0	0	0	0	0	0	0	0	0	0
41	40,50	0	0	0	0	0	0	0	0	0	0	0	0	0	0



Project:

Energy Island North Sea

Licensed user:

EMD International A/S

Niels Jernes Vej 10

DK-9220 Aalborg Ø

+45 6916 4850

Thomas Sørensen / ts@emd.dk

Calculated:

06/03/2024 09.29

Meteo data report - Frequency distribution (TAB file data)**Mast:** Lot 1 complete 2y ; Complete period **Period:** Full period: 15/11/2021 - 15/11/2023 (24,0 months)**Frequency distribution (TAB file data)**

30,00m - Subst																
Bin	Start	End	Sum	0-N	1-NNE	2-ENE	3-E	4-ESE	5-SSE	6-S	7-SSW	8-WSW	9-W	10-WNW	11-NNW	
0	0,49	1	0	9,60	7,18	6,12	7,50	10,29	10,23	9,39	9,07	9,28	9,46	9,93	10,33	10,72
1	0,50	1,49	955	103	104	124	76	58	58	77	72	79	43	86	75	
2	1,50	2,49	2212	205	164	239	185	147	119	176	188	196	173	197	223	
3	2,50	3,49	3339	299	263	242	257	295	202	229	282	396	273	287	314	
4	3,50	4,49	4938	266	323	317	274	429	260	274	439	658	602	659	437	
5	4,50	5,49	5854	423	328	437	305	310	382	472	671	668	681	646	531	
6	5,50	6,49	6999	470	260	312	379	427	479	673	865	827	878	760	669	
7	6,50	7,49	7977	392	202	312	515	487	532	858	1039	1108	961	875	696	
8	7,50	8,49	7938	255	207	274	514	515	514	808	956	1088	1024	964	819	
9	8,50	9,49	7934	256	153	282	520	604	535	612	917	1186	1065	1046	758	
10	9,50	10,49	8174	181	97	324	532	660	605	547	936	1189	1082	1148	873	
11	10,50	11,49	6992	116	56	245	420	554	412	448	794	947	963	1128	909	
12	11,50	12,49	6134	118	53	186	366	485	275	435	744	743	877	1053	799	
13	12,50	13,49	5116	117	30	141	357	470	218	431	484	586	855	775	652	
14	13,50	14,49	4419	95	16	87	234	434	219	381	400	580	787	564	622	
15	14,50	15,49	3827	76	12	35	138	398	233	277	411	540	588	538	581	
16	15,50	16,49	2833	50	10	18	124	244	215	205	335	443	343	385	461	
17	16,50	17,49	1905	35	9	31	116	155	138	80	166	221	260	272	422	
18	17,50	18,49	1467	11	4	17	101	124	111	50	98	158	176	239	378	
19	18,50	19,49	1023	14	2	13	93	86	59	51	55	75	91	229	255	
20	19,50	20,49	754	3	6	4	103	64	45	23	30	24	75	209	168	
21	20,50	21,49	546	7	2	4	84	92	16	12	12	27	46	142	102	
22	21,50	22,49	349	5	0	7	90	94	4	4	13	10	16	52	54	
23	22,50	23,49	198	1	6	9	85	38	2	0	3	2	12	22	18	
24	23,50	24,49	128	0	10	6	52	11	0	0	4	0	11	18	16	
25	24,50	25,49	80	0	2	6	21	3	0	0	1	0	14	25	8	
26	25,50	26,49	49	0	1	1	25	0	0	0	0	0	2	18	2	
27	26,50	27,49	43	0	0	2	29	0	0	0	0	0	1	9	2	
28	27,50	28,49	24	0	0	1	18	0	0	0	0	0	1	3	1	
29	28,50	29,49	5	0	0	0	5	0	0	0	0	0	0	0	0	
30	29,50	30,49	2	0	0	0	1	0	0	0	0	0	0	1	0	
31	30,50	31,49	0	0	0	0	0	0	0	0	0	0	0	0	0	
32	31,50	32,49	0	0	0	0	0	0	0	0	0	0	0	0	0	
33	32,50	33,49	0	0	0	0	0	0	0	0	0	0	0	0	0	
34	33,50	34,49	0	0	0	0	0	0	0	0	0	0	0	0	0	
35	34,50	35,49	0	0	0	0	0	0	0	0	0	0	0	0	0	
36	35,50	36,49	0	0	0	0	0	0	0	0	0	0	0	0	0	
37	36,50	37,49	0	0	0	0	0	0	0	0	0	0	0	0	0	
38	37,50	38,49	0	0	0	0	0	0	0	0	0	0	0	0	0	
39	38,50	39,49	0	0	0	0	0	0	0	0	0	0	0	0	0	
40	39,50	40,49	0	0	0	0	0	0	0	0	0	0	0	0	0	
41	40,50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	



Project:
Energy Island North Sea

Licensed user:
EMD International A/S
Niels Jernes Vej 10
DK-9220 Aalborg Ø
+45 6916 4850
Thomas Sørensen / ts@emd.dk
Calculated:
06/03/2024 09.29

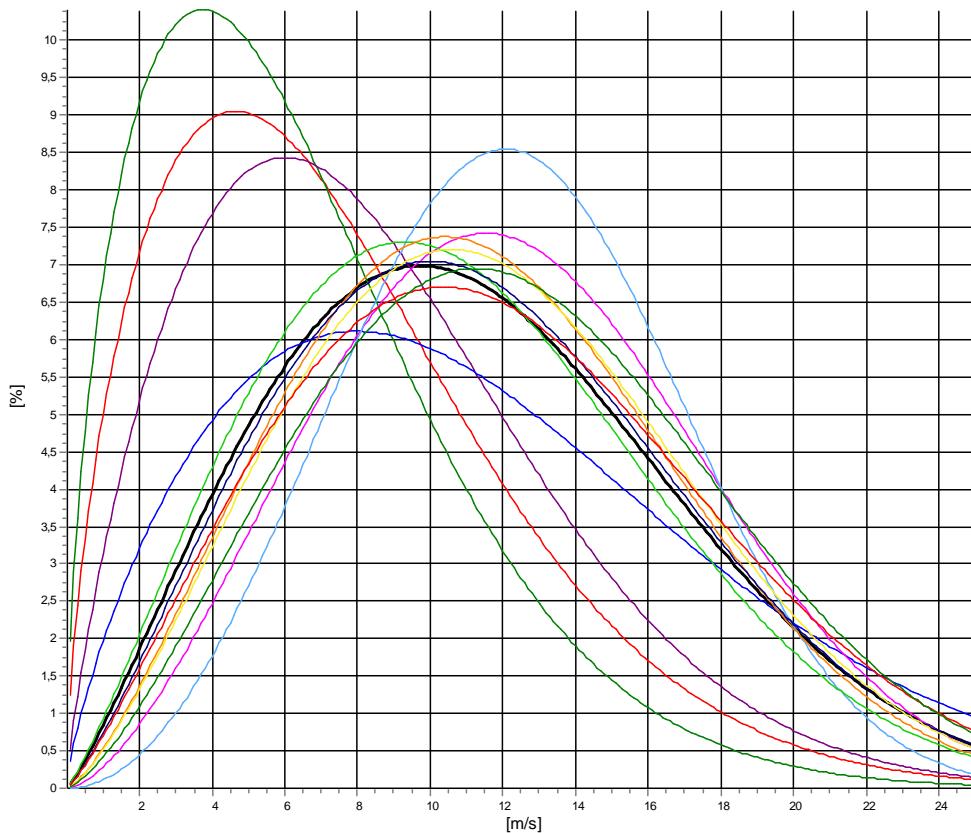
Meteo data report - Weibull data overview

Mast: Lot 1 complete 2y ; Complete period **Period:** Full period: 15/11/2021 - 15/11/2023 (24,0 months)

Height: **270,00m** - **Subst**

Weibull data

Sector	A [m/s]	k	f	Mean wind speed [m/s]
0-N	8,44	1,615	3,82	7,56
1-NNE	7,24	1,558	2,55	6,51
2-ENE	9,51	1,788	3,44	8,46
3-E	12,97	1,748	5,32	11,55
4-ESE	13,95	2,578	7,43	12,39
5-SSE	13,80	3,012	6,03	12,33
6-S	12,39	2,164	7,24	10,97
7-SSW	13,12	2,367	10,36	11,63
8-WSW	13,09	2,221	13,80	11,59
9-W	13,39	2,358	13,60	11,86
10-WNW	13,65	2,197	14,19	12,09
11>NNW	14,09	2,404	12,23	12,49
Mean	12,96	2,166	100,00	11,48



All A: 13,0 m/s k: 2,17 Vm: 11,5 m/s	N A: 8,4 m/s k: 1,61 Vm: 7,6 m/s	NNE A: 7,2 m/s k: 1,56 Vm: 6,5 m/s	ENE A: 9,5 m/s k: 1,79 Vm: 8,5 m/s
E A: 13,0 m/s k: 1,75 Vm: 11,5 m/s	ESE A: 13,9 m/s k: 2,58 Vm: 12,4 m/s	SSE A: 13,8 m/s k: 3,01 Vm: 12,3 m/s	S A: 12,4 m/s k: 2,16 Vm: 11,0 m/s
SSW A: 13,1 m/s k: 2,37 Vm: 11,6 m/s	WSW A: 13,1 m/s k: 2,22 Vm: 11,6 m/s	W A: 13,4 m/s k: 2,36 Vm: 11,9 m/s	WNW A: 13,7 m/s k: 2,20 Vm: 12,1 m/s
NNW A: 14,1 m/s k: 2,40 Vm: 12,5 m/s			



Project:
Energy Island North Sea

Licensed user:
EMD International A/S
Niels Jernes Vej 10
DK-9220 Aalborg Ø
+45 6916 4850
Thomas Sørensen / ts@emd.dk
Calculated:
06/03/2024 09.29

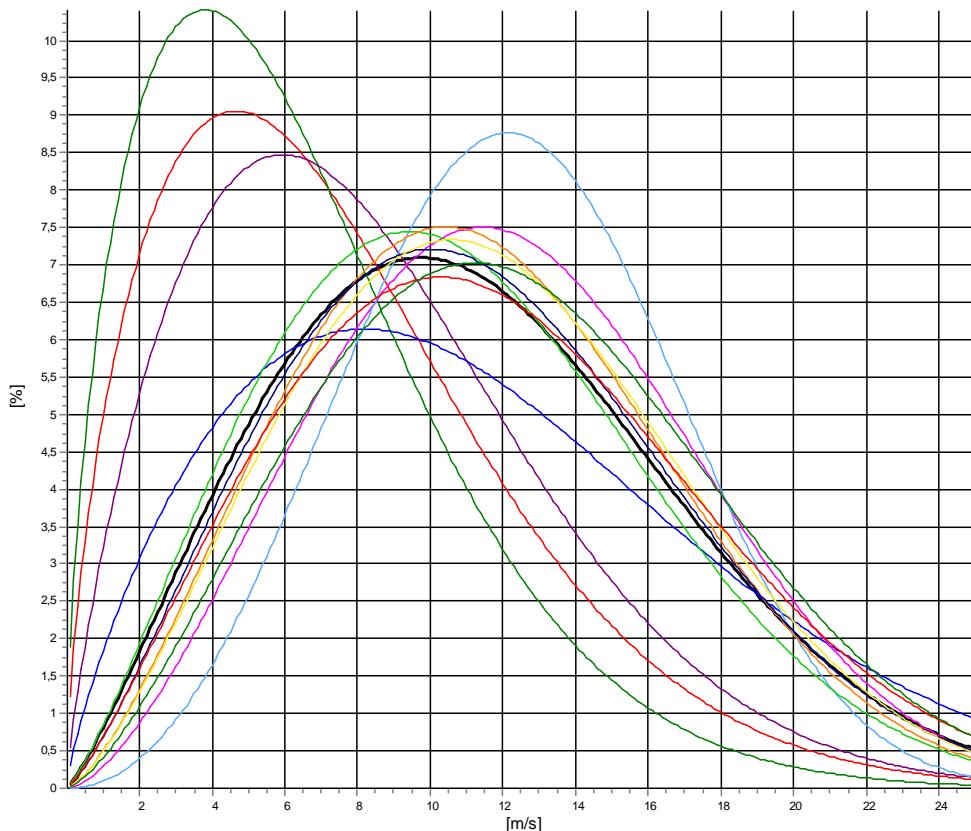
Meteo data report - Weibull data overview

Mast: Lot 1 complete 2y ; Complete period **Period:** Full period: 15/11/2021 - 15/11/2023 (24,0 months)

Height: 240,00m - Subst

Weibull data

Sector	A [m/s]	k	f	Mean wind speed [m/s]
0-N	8,44	1,618	3,78	7,56
1-NNE	7,26	1,569	2,55	6,52
2-ENE	9,44	1,780	3,52	8,40
3-E	13,02	1,778	5,39	11,58
4-ESE	13,82	2,584	7,49	12,28
5-SSE	13,78	3,094	6,02	12,32
6-S	12,36	2,213	7,34	10,95
7-SSW	13,04	2,403	10,32	11,56
8-WSW	12,97	2,263	13,68	11,49
9-W	13,28	2,389	13,62	11,77
10-WNW	13,47	2,216	14,08	11,93
11>NNW	13,99	2,418	12,22	12,41
Mean	12,87	2,192	100,00	11,40



All A: 12,9 m/s k: 2,19 Vm: 11,4 m/s	N A: 8,4 m/s k: 1,62 Vm: 7,6 m/s	NNE A: 7,3 m/s k: 1,57 Vm: 6,5 m/s	ENE A: 9,4 m/s k: 1,78 Vm: 8,4 m/s
E A: 13,0 m/s k: 1,78 Vm: 11,6 m/s	ESE A: 13,8 m/s k: 2,58 Vm: 12,3 m/s	SSE A: 13,8 m/s k: 3,09 Vm: 12,3 m/s	S A: 12,4 m/s k: 2,21 Vm: 10,9 m/s
SSW A: 13,0 m/s k: 2,40 Vm: 11,6 m/s	WSW A: 13,0 m/s k: 2,26 Vm: 11,5 m/s	W A: 13,3 m/s k: 2,39 Vm: 11,8 m/s	WNW A: 13,5 m/s k: 2,22 Vm: 11,9 m/s
NNW A: 14,0 m/s k: 2,42 Vm: 12,4 m/s			



Project:
Energy Island North Sea

Licensed user:
EMD International A/S
Niels Jernes Vej 10
DK-9220 Aalborg Ø
+45 6916 4850
Thomas Sørensen / ts@emd.dk
Calculated:
06/03/2024 09.29

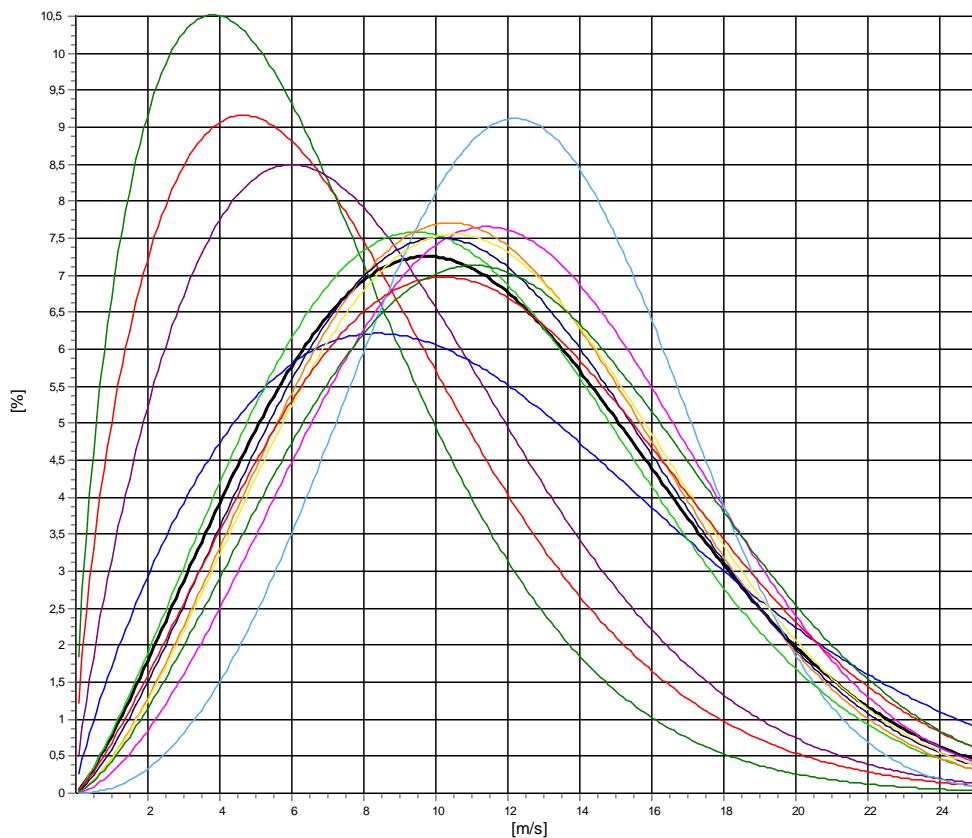
Meteo data report - Weibull data overview

Mast: Lot 1 complete 2y ; Complete period **Period:** Full period: 15/11/2021 - 15/11/2023 (24,0 months)

Height: 200,00m - Subst

Weibull data

Sector	A [m/s]	k	f	Mean wind speed [m/s]
0-N	8,36	1,626	3,72	7,49
1-NNE	7,20	1,580	2,57	6,46
2-ENE	9,45	1,793	3,59	8,41
3-E	13,02	1,818	5,58	11,57
4-ESE	13,70	2,621	7,48	12,17
5-SSE	13,70	3,218	6,11	12,27
6-S	12,26	2,244	7,36	10,86
7-SSW	12,87	2,446	10,33	11,41
8-WSW	12,80	2,344	13,69	11,34
9-W	13,08	2,434	13,47	11,60
10-WNW	13,31	2,241	13,93	11,79
11-NNW	13,77	2,414	12,17	12,21
Mean	12,73	2,226	100,00	11,27



All A: 12,7 m/s k: 2,23 Vm: 11,3 m/s	N A: 8,4 m/s k: 1,63 Vm: 7,5 m/s	NNE A: 7,2 m/s k: 1,58 Vm: 6,5 m/s	ENE A: 9,5 m/s k: 1,79 Vm: 8,4 m/s
E A: 13,0 m/s k: 1,82 Vm: 11,6 m/s	ESE A: 13,7 m/s k: 2,62 Vm: 12,2 m/s	SSE A: 13,7 m/s k: 3,22 Vm: 12,3 m/s	S A: 12,3 m/s k: 2,24 Vm: 10,9 m/s
SSW A: 12,9 m/s k: 2,45 Vm: 11,4 m/s	WSW A: 12,8 m/s k: 2,34 Vm: 11,3 m/s	W A: 13,1 m/s k: 2,43 Vm: 11,6 m/s	NNW A: 13,8 m/s k: 2,41 Vm: 12,2 m/s
NNW A: 13,8 m/s k: 2,41 Vm: 12,2 m/s			



Project:
Energy Island North Sea

Licensed user:
EMD International A/S
Niels Jernes Vej 10
DK-9220 Aalborg Ø
+45 6916 4850
Thomas Sørensen / ts@emd.dk
Calculated:
06/03/2024 09.29

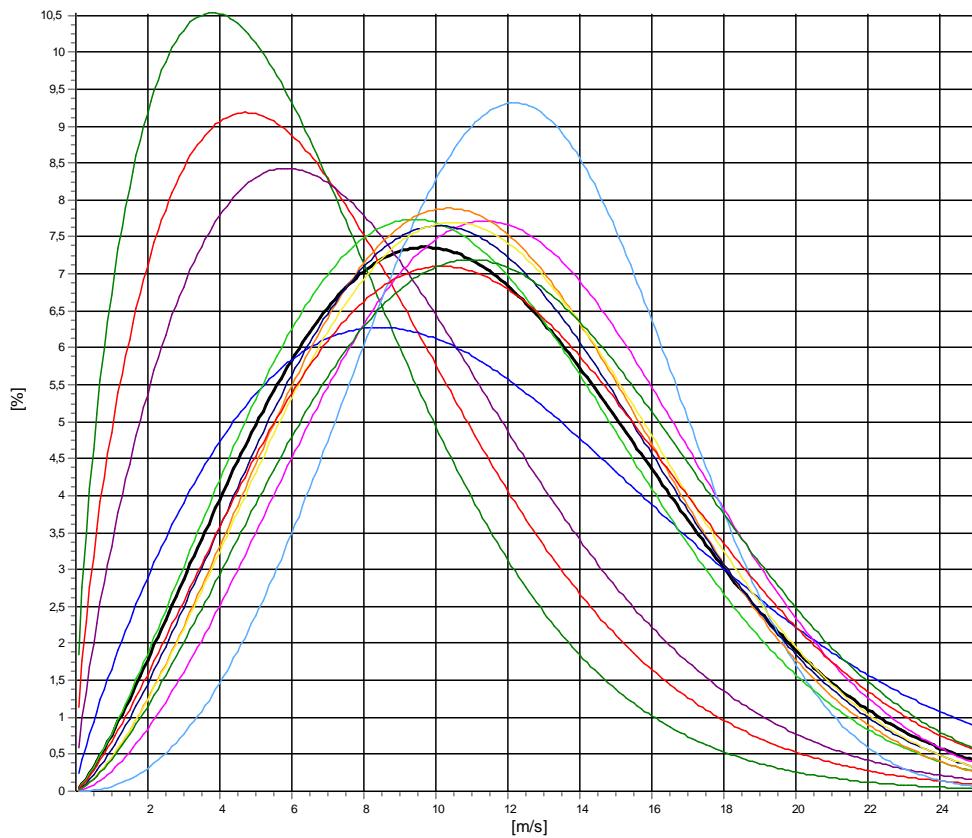
Meteo data report - Weibull data overview

Mast: Lot 1 complete 2y ; Complete period **Period:** Full period: 15/11/2021 - 15/11/2023 (24,0 months)

Height: **180,00m** - **Subst**

Weibull data

Sector	A	k	f	Mean wind speed
	[m/s]			[m/s]
0-N	8,38	1,642	3,78	7,49
1-NNE	7,19	1,578	2,55	6,45
2-ENE	9,44	1,761	3,63	8,40
3-E	12,96	1,835	5,69	11,52
4-ESE	13,65	2,631	7,47	12,13
5-SSE	13,62	3,273	6,10	12,21
6-S	12,13	2,275	7,48	10,75
7-SSW	12,74	2,483	10,26	11,30
8-WSW	12,71	2,380	13,62	11,26
9-W	12,95	2,459	13,45	11,48
10-WNW	13,17	2,262	13,90	11,66
11>NNW	13,68	2,420	12,08	12,13
Mean	12,63	2,244	100,00	11,19



All A: 12,6 m/s k: 2,24 Vm: 11,2 m/s	N A: 8,4 m/s k: 1,64 Vm: 7,5 m/s	NNE A: 7,2 m/s k: 1,58 Vm: 6,5 m/s	ENE A: 9,4 m/s k: 1,76 Vm: 8,4 m/s
E A: 13,0 m/s k: 1,83 Vm: 11,5 m/s	ESE A: 13,6 m/s k: 2,63 Vm: 12,1 m/s	SSE A: 13,6 m/s k: 3,27 Vm: 12,2 m/s	S A: 12,1 m/s k: 2,27 Vm: 10,7 m/s
SSW A: 12,7 m/s k: 2,48 Vm: 11,3 m/s	WSW A: 12,7 m/s k: 2,38 Vm: 11,3 m/s	W A: 12,9 m/s k: 2,46 Vm: 11,5 m/s	WNW A: 13,2 m/s k: 2,26 Vm: 11,7 m/s
NNW A: 13,7 m/s k: 2,42 Vm: 12,1 m/s			



Project:
Energy Island North Sea

Licensed user:
EMD International A/S
Niels Jernes Vej 10
DK-9220 Aalborg Ø
+45 6916 4850
Thomas Sørensen / ts@emd.dk
Calculated:
06/03/2024 09.29

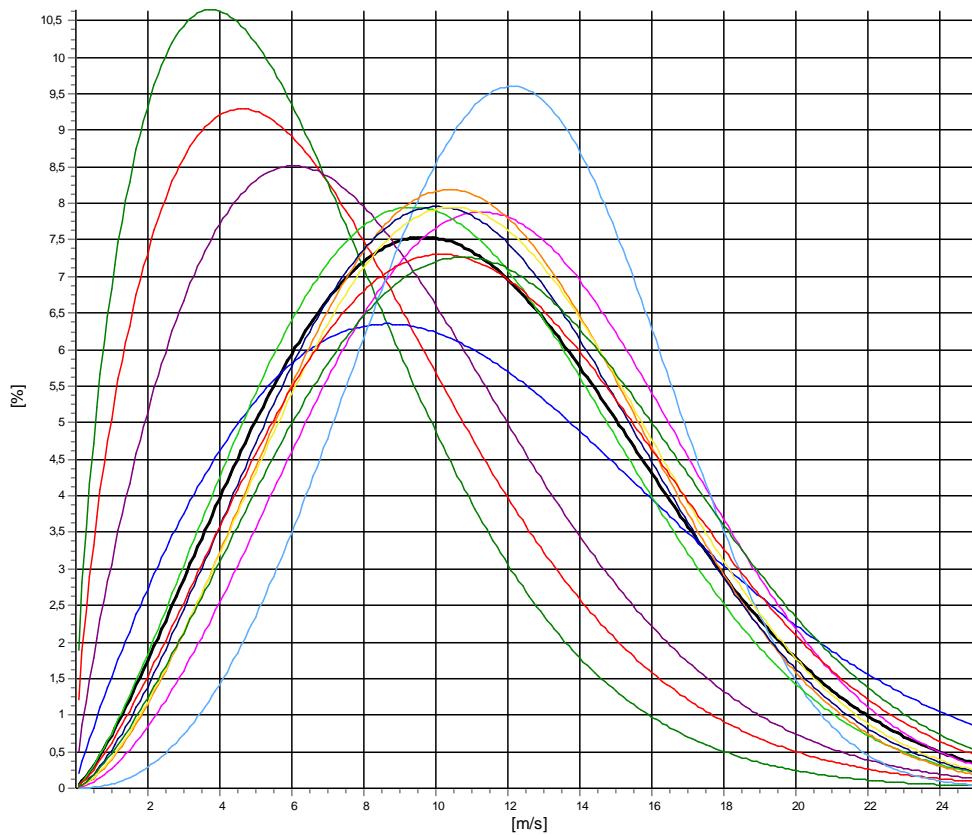
Meteo data report - Weibull data overview

Mast: Lot 1 complete 2y ; Complete period **Period:** Full period: 15/11/2021 - 15/11/2023 (24,0 months)

Height: **150,00m** - **Subst**

Weibull data

Sector	A [m/s]	k	f	Mean wind speed [m/s]
0-N	8,25	1,631	3,73	7,39
1-NNE	7,11	1,578	2,56	6,38
2-ENE	9,47	1,805	3,65	8,42
3-E	12,98	1,878	5,88	11,53
4-ESE	13,46	2,658	7,48	11,97
5-SSE	13,47	3,343	6,10	12,09
6-S	11,95	2,311	7,62	10,59
7-SSW	12,58	2,563	10,25	11,17
8-WSW	12,47	2,443	13,54	11,05
9-W	12,78	2,519	13,31	11,34
10-WNW	12,99	2,307	13,81	11,51
11-NNW	13,46	2,400	12,07	11,93
Mean	12,47	2,278	100,00	11,04



All A: 12,5 m/s k: 2,28 Vm: 11,0 m/s	N A: 8,3 m/s k: 1,63 Vm: 7,4 m/s	NNE A: 7,1 m/s k: 1,58 Vm: 6,4 m/s	ENE A: 9,5 m/s k: 1,81 Vm: 8,4 m/s
E A: 13,0 m/s k: 1,88 Vm: 11,5 m/s	ESE A: 13,5 m/s k: 2,66 Vm: 12,0 m/s	SSE A: 13,5 m/s k: 3,34 Vm: 12,1 m/s	S A: 12,0 m/s k: 2,31 Vm: 10,6 m/s
SSW A: 12,6 m/s k: 2,56 Vm: 11,2 m/s	WSW A: 12,5 m/s k: 2,44 Vm: 11,1 m/s	W A: 12,8 m/s k: 2,52 Vm: 11,3 m/s	NNW A: 13,5 m/s k: 2,40 Vm: 11,9 m/s
			WNW A: 13,0 m/s k: 2,31 Vm: 11,5 m/s



Project:
Energy Island North Sea

Licensed user:
EMD International A/S
Niels Jernes Vej 10
DK-9220 Aalborg Ø
+45 6916 4850
Thomas Sørensen / ts@emd.dk
Calculated:
06/03/2024 09.29

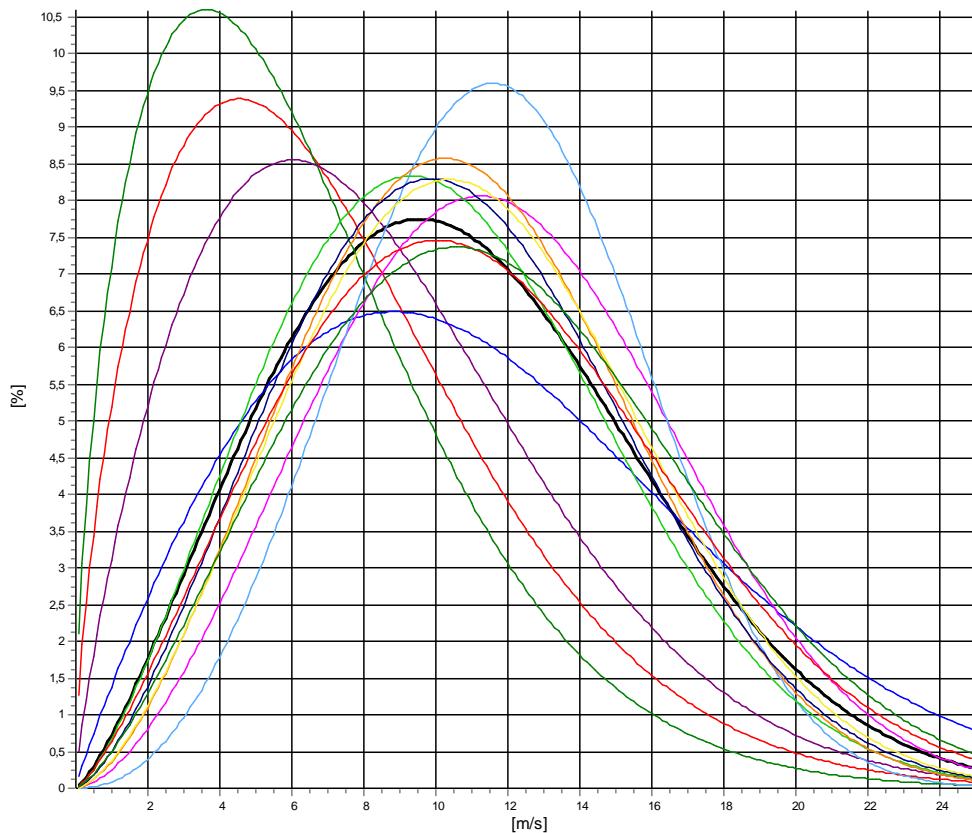
Meteo data report - Weibull data overview

Mast: Lot 1 complete 2y ; Complete period **Period:** Full period: 15/11/2021 - 15/11/2023 (24,0 months)

Height: **120,00m** - **Subst**

Weibull data

Sector	A [m/s]	k	f	Mean wind speed [m/s]
0-N	8,17	1,626	3,79	7,31
1-NNE	7,10	1,549	2,49	6,39
2-ENE	9,43	1,803	3,78	8,38
3-E	12,93	1,928	6,05	11,47
4-ESE	13,34	2,700	7,40	11,86
5-SSE	13,01	3,211	6,23	11,65
6-S	11,71	2,391	7,71	10,38
7-SSW	12,30	2,635	10,30	10,93
8-WSW	12,15	2,491	13,38	10,77
9-W	12,53	2,585	13,14	11,12
10-WNW	12,78	2,321	13,83	11,33
11-NNW	13,25	2,394	11,90	11,75
Mean	12,24	2,304	100,00	10,84



All A: 12,2 m/s k: 2,30 Vm: 10,8 m/s	N A: 8,2 m/s k: 1,63 Vm: 7,3 m/s	NNE A: 7,1 m/s k: 1,55 Vm: 6,4 m/s	ENE A: 9,4 m/s k: 1,80 Vm: 8,4 m/s
E A: 12,9 m/s k: 1,93 Vm: 11,5 m/s	ESE A: 13,3 m/s k: 2,70 Vm: 11,9 m/s	SSE A: 13,0 m/s k: 3,21 Vm: 11,7 m/s	S A: 11,7 m/s k: 2,39 Vm: 10,4 m/s
SSW A: 12,3 m/s k: 2,64 Vm: 10,9 m/s	WSW A: 12,1 m/s k: 2,49 Vm: 10,8 m/s	W A: 12,5 m/s k: 2,59 Vm: 11,1 m/s	WNW A: 12,8 m/s k: 2,32 Vm: 11,3 m/s
NNW A: 13,3 m/s k: 2,39 Vm: 11,7 m/s			



Project:
Energy Island North Sea

Licensed user:
EMD International A/S
Niels Jernes Vej 10
DK-9220 Aalborg Ø
+45 6916 4850
Thomas Sørensen / ts@emd.dk
Calculated:
06/03/2024 09.29

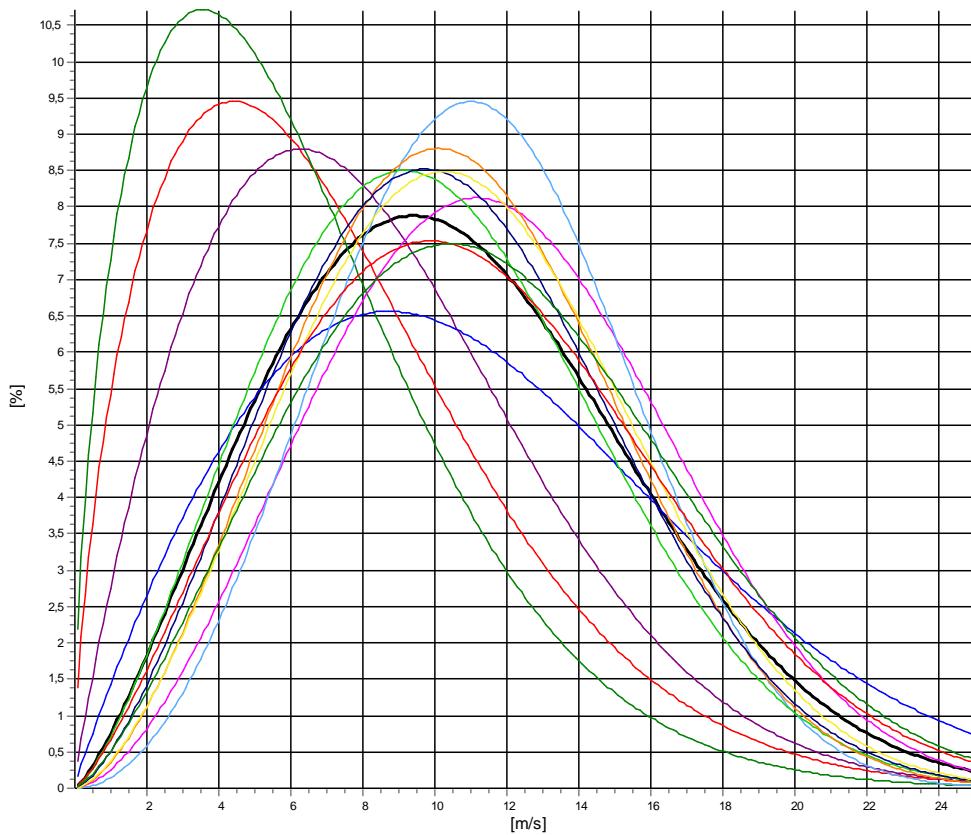
Meteo data report - Weibull data overview

Mast: Lot 1 complete 2y ; Complete period **Period:** Full period: 15/11/2021 - 15/11/2023 (24,0 months)

Height: **100,00m** - **Subst**

Weibull data

Sector	A [m/s]	k	f	Mean wind speed [m/s]
0-N	8,07	1,609	3,81	7,23
1-NNE	7,01	1,543	2,49	6,31
2-ENE	9,39	1,881	3,80	8,33
3-E	12,76	1,927	6,17	11,32
4-ESE	13,24	2,702	7,48	11,77
5-SSE	12,55	3,030	6,22	11,21
6-S	11,47	2,391	7,73	10,17
7-SSW	12,06	2,661	10,39	10,72
8-WSW	11,90	2,512	13,29	10,56
9-W	12,33	2,615	12,98	10,96
10-WNW	12,62	2,313	13,72	11,18
11>NNW	13,05	2,401	11,91	11,57
Mean	12,04	2,305	100,00	10,66



All A: 12,0 m/s k: 2,31 Vm: 10,7 m/s	N A: 8,1 m/s k: 1,61 Vm: 7,2 m/s	NNE A: 7,0 m/s k: 1,54 Vm: 6,3 m/s	ENE A: 9,4 m/s k: 1,88 Vm: 8,3 m/s
E A: 12,8 m/s k: 1,93 Vm: 11,3 m/s	ESE A: 13,2 m/s k: 2,70 Vm: 11,8 m/s	SSE A: 12,5 m/s k: 3,03 Vm: 11,2 m/s	S A: 11,5 m/s k: 2,39 Vm: 10,2 m/s
SSW A: 12,1 m/s k: 2,66 Vm: 10,7 m/s	WSW A: 11,9 m/s k: 2,51 Vm: 10,6 m/s	W A: 12,3 m/s k: 2,61 Vm: 11,0 m/s	WNW A: 12,6 m/s k: 2,31 Vm: 11,2 m/s
NWW A: 13,1 m/s k: 2,40 Vm: 11,6 m/s			



Project:
Energy Island North Sea

Licensed user:
EMD International A/S
Niels Jernes Vej 10
DK-9220 Aalborg Ø
+45 6916 4850
Thomas Sørensen / ts@emd.dk
Calculated:
06/03/2024 09.29

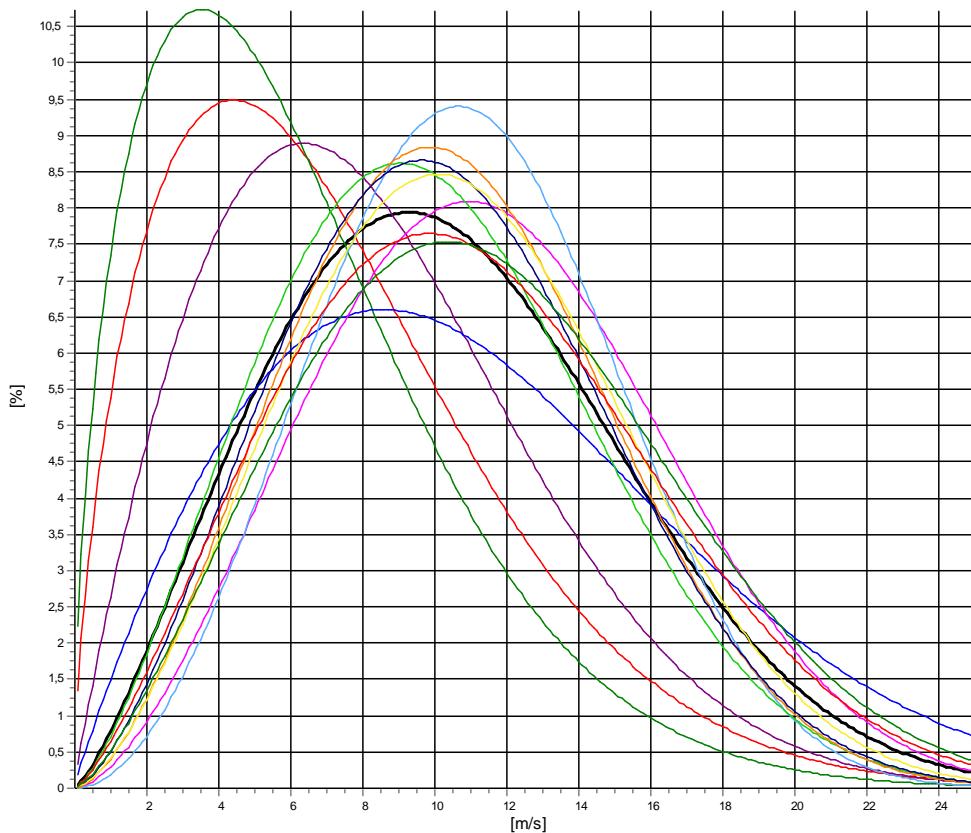
Meteo data report - Weibull data overview

Mast: Lot 1 complete 2y ; Complete period **Period:** Full period: 15/11/2021 - 15/11/2023 (24,0 months)

Height: **90,00m** - Subst

Weibull data

Sector	A [m/s]	k	f	Mean wind speed [m/s]
0-N	8,05	1,614	3,81	7,21
1-NNE	6,99	1,538	2,53	6,29
2-ENE	9,37	1,910	3,80	8,31
3-E	12,64	1,913	6,18	11,21
4-ESE	13,08	2,649	7,54	11,63
5-SSE	12,28	2,938	6,22	10,96
6-S	11,34	2,396	7,78	10,05
7-SSW	11,86	2,619	10,49	10,54
8-WSW	11,76	2,526	13,18	10,44
9-W	12,21	2,574	12,97	10,84
10-WNW	12,52	2,334	13,70	11,09
11>NNW	12,97	2,399	11,81	11,50
Mean	11,90	2,296	100,00	10,55



All A: 11,9 m/s k: 2,30 Vm: 10,5 m/s	N A: 8,1 m/s k: 1,61 Vm: 7,2 m/s	NNE A: 7,0 m/s k: 1,54 Vm: 6,3 m/s	ENE A: 9,4 m/s k: 1,91 Vm: 8,3 m/s
E A: 12,6 m/s k: 1,91 Vm: 11,2 m/s	ESE A: 13,1 m/s k: 2,65 Vm: 11,6 m/s	SSE A: 12,3 m/s k: 2,94 Vm: 11,0 m/s	S A: 11,3 m/s k: 2,40 Vm: 10,0 m/s
SSW A: 11,9 m/s k: 2,62 Vm: 10,5 m/s	WSW A: 11,8 m/s k: 2,53 Vm: 10,4 m/s	W A: 12,2 m/s k: 2,57 Vm: 10,8 m/s	WNW A: 12,5 m/s k: 2,33 Vm: 11,1 m/s
NNW A: 13,0 m/s k: 2,40 Vm: 11,5 m/s			



Project:
Energy Island North Sea

Licensed user:
EMD International A/S
Niels Jernes Vej 10
DK-9220 Aalborg Ø
+45 6916 4850
Thomas Sørensen / ts@emd.dk
Calculated:
06/03/2024 09.29

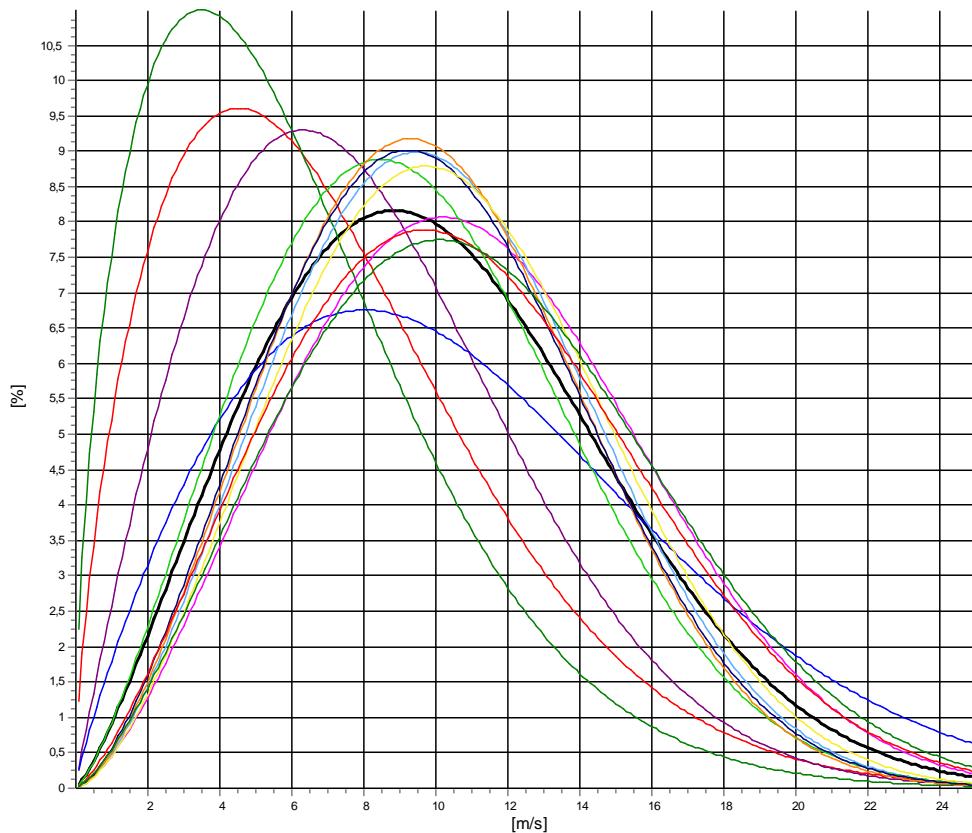
Meteo data report - Weibull data overview

Mast: Lot 1 complete 2y ; Complete period **Period:** Full period: 15/11/2021 - 15/11/2023 (24,0 months)

Height: **60,00m** - Subst

Weibull data

Sector	A [m/s]	k	f	Mean wind speed [m/s]
0-N	8,01	1,644	3,83	7,17
1-NNE	6,84	1,547	2,51	6,15
2-ENE	9,10	1,959	3,95	8,07
3-E	12,13	1,859	6,27	10,77
4-ESE	12,51	2,499	7,71	11,10
5-SSE	11,49	2,570	6,11	10,20
6-S	10,76	2,330	7,79	9,54
7-SSW	11,26	2,572	10,67	10,00
8-WSW	11,29	2,524	12,96	10,02
9-W	11,78	2,578	12,92	10,46
10-WNW	12,25	2,360	13,53	10,85
11>NNW	12,64	2,406	11,76	11,21
Mean	11,46	2,263	100,00	10,15



All A: 11,5 m/s k: 2,26 Vm: 10,1 m/s	N A: 8,0 m/s k: 1,64 Vm: 7,2 m/s	NNE A: 6,8 m/s k: 1,55 Vm: 6,2 m/s	ENE A: 9,1 m/s k: 1,96 Vm: 8,1 m/s
E A: 12,1 m/s k: 1,86 Vm: 10,8 m/s	ESE A: 12,5 m/s k: 2,50 Vm: 11,1 m/s	SSE A: 11,5 m/s k: 2,57 Vm: 10,2 m/s	S A: 10,8 m/s k: 2,33 Vm: 9,5 m/s
SSW A: 11,3 m/s k: 2,57 Vm: 10,0 m/s	WSW A: 11,3 m/s k: 2,52 Vm: 10,0 m/s	W A: 11,8 m/s k: 2,58 Vm: 10,5 m/s	WNW A: 12,2 m/s k: 2,36 Vm: 10,9 m/s
NWW A: 12,6 m/s k: 2,41 Vm: 11,2 m/s			



Project:
Energy Island North Sea

Licensed user:
EMD International A/S
Niels Jernes Vej 10
DK-9220 Aalborg Ø
+45 6916 4850
Thomas Sørensen / ts@emd.dk
Calculated:
06/03/2024 09.29

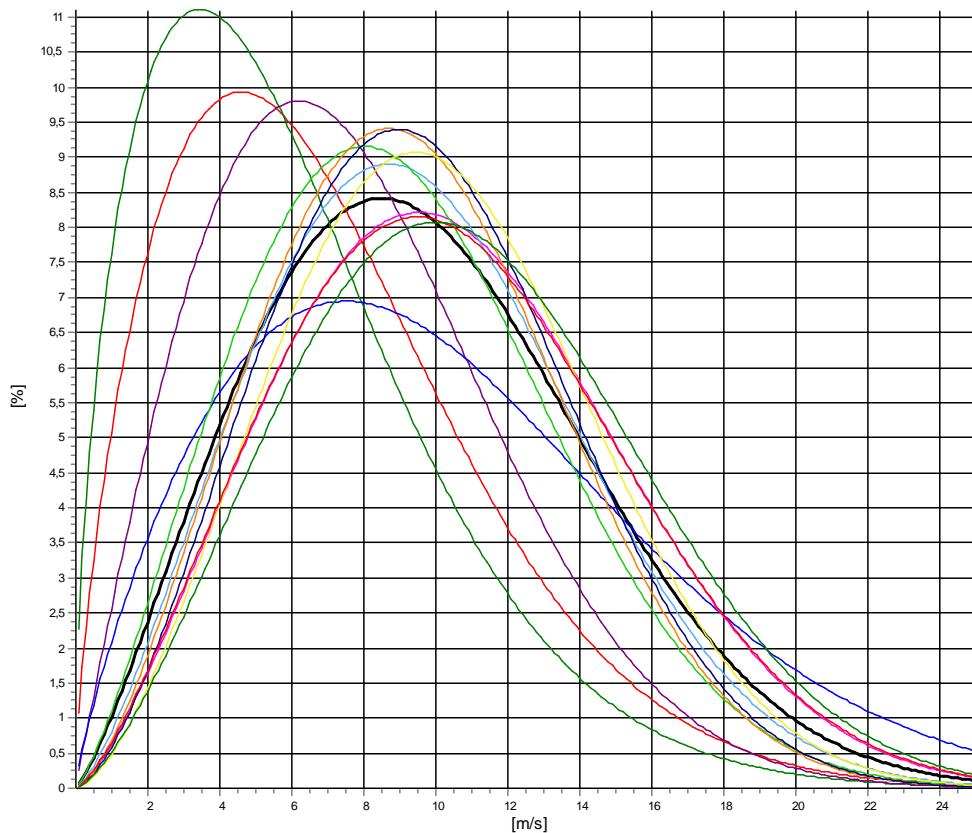
Meteo data report - Weibull data overview

Mast: Lot 1 complete 2y ; Complete period **Period:** Full period: 15/11/2021 - 15/11/2023 (24,0 months)

Height: **40,00m** - Subst

Weibull data

Sector	A [m/s]	k	f	Mean wind speed [m/s]
0-N	7,84	1,686	3,76	7,00
1-NNE	6,77	1,547	2,51	6,09
2-ENE	8,76	2,004	4,03	7,76
3-E	11,65	1,818	6,40	10,36
4-ESE	11,92	2,403	7,74	10,57
5-SSE	10,92	2,381	6,14	9,68
6-S	10,31	2,289	7,75	9,13
7-SSW	10,70	2,491	10,73	9,49
8-WSW	10,91	2,546	12,76	9,68
9-W	11,42	2,580	12,90	10,14
10-WNW	11,93	2,382	13,52	10,58
11-NNW	12,36	2,462	11,75	10,96
Mean	11,06	2,246	100,00	9,79



All A: 11,1 m/s k: 2,25 Vm: 9,8 m/s	N A: 7,8 m/s k: 1,69 Vm: 7,0 m/s	NNE A: 6,8 m/s k: 1,55 Vm: 6,1 m/s	ENE A: 8,8 m/s k: 2,00 Vm: 7,8 m/s
E A: 11,7 m/s k: 1,82 Vm: 10,4 m/s	ESE A: 11,9 m/s k: 2,40 Vm: 10,6 m/s	SSE A: 10,9 m/s k: 2,38 Vm: 9,7 m/s	S A: 10,3 m/s k: 2,29 Vm: 9,1 m/s
SSW A: 10,7 m/s k: 2,49 Vm: 9,5 m/s	WSW A: 10,9 m/s k: 2,55 Vm: 9,7 m/s	W A: 11,4 m/s k: 2,58 Vm: 10,1 m/s	WNW A: 11,9 m/s k: 2,38 Vm: 10,6 m/s
NNW A: 12,4 m/s k: 2,46 Vm: 11,0 m/s			



Project:
Energy Island North Sea

Licensed user:
EMD International A/S
Niels Jernes Vej 10
DK-9220 Aalborg Ø
+45 6916 4850
Thomas Sørensen / ts@emd.dk
Calculated:
06/03/2024 09.29

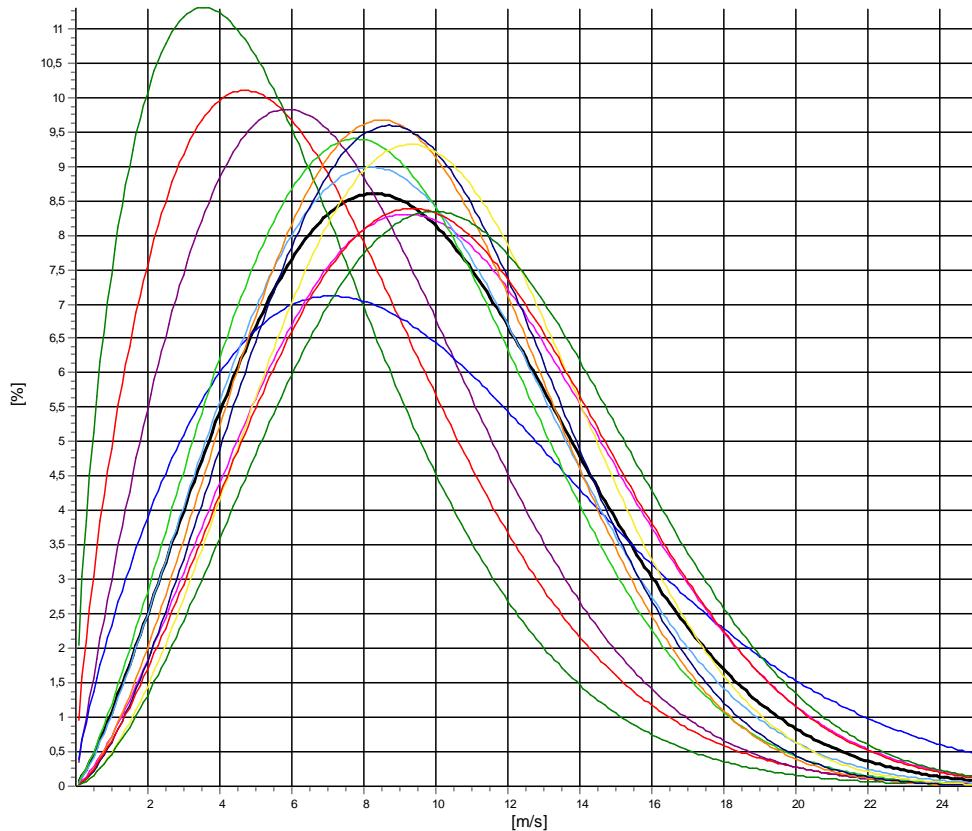
Meteo data report - Weibull data overview

Mast: Lot 1 complete 2y ; Complete period **Period:** Full period: 15/11/2021 - 15/11/2023 (24,0 months)

Height: **30,00m** - Subst

Weibull data

Sector	A [m/s]	k	f	Mean wind speed [m/s]
0-N	7,78	1,719	3,79	6,94
1-NNE	6,71	1,581	2,52	6,02
2-ENE	8,55	1,938	3,99	7,59
3-E	11,27	1,787	6,53	10,02
4-ESE	11,62	2,361	7,79	10,30
5-SSE	10,53	2,298	6,11	9,33
6-S	10,01	2,282	7,72	8,87
7-SSW	10,42	2,493	10,75	9,25
8-WSW	10,64	2,533	12,74	9,44
9-W	11,21	2,605	12,90	9,95
10-WNW	11,69	2,407	13,39	10,36
11>NNW	12,18	2,519	11,76	10,81
Mean	10,80	2,244	100,00	9,57



— All A: 10,8 m/s k: 2,24 Vm: 9,6 m/s — N A: 7,8 m/s k: 1,72 Vm: 6,9 m/s — NNE A: 6,7 m/s k: 1,58 Vm: 6,0 m/s — ENE A: 8,6 m/s k: 1,94 Vm: 7,6 m/s
— E A: 11,3 m/s k: 1,79 Vm: 10,0 m/s — ESE A: 11,6 m/s k: 2,36 Vm: 10,3 m/s — SSE A: 10,5 m/s k: 2,30 Vm: 9,3 m/s — S A: 10,0 m/s k: 2,28 Vm: 8,9 m/s
— SSW A: 10,4 m/s k: 2,49 Vm: 9,2 m/s — WSW A: 10,6 m/s k: 2,53 Vm: 9,4 m/s — W A: 11,2 m/s k: 2,61 Vm: 10,0 m/s — WNW A: 11,7 m/s k: 2,41 Vm: 10,4 m/s
— NNW A: 12,2 m/s k: 2,52 Vm: 10,8 m/s



Project:

Energy Island North Sea

Licensed user:

EMD International A/S

Niels Jernes Vej 10

DK-9220 Aalborg Ø

+45 6916 4850

Thomas Sørensen / ts@emd.dk

Calculated:

06/03/2024 09.34

Meteo data report - Frequency distribution (TAB file data)**Mast:** Lot 2 complete 2y ; Complete period **Period:** Full period: 15/11/2021 - 15/11/2023 (24,0 months)**Frequency distribution (TAB file data)**

270,00m - Subst

Bin	Start	End	Sum	0-N	1-NNE	2-ENE	3-E	4-ESE	5-SSE	6-S	7-SSW	8-WSW	9-W	10-WNW	11-NNW	12,17
Mean			11,39	7,93	6,81	8,42	10,90	12,04	11,70	11,07	11,78	11,94	11,70	12,03	12,17	
0	0,49	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	0,50	1,49	689	59	58	67	47	39	54	52	65	62	63	53	70	
2	1,50	2,49	1641	152	151	176	148	104	101	94	138	151	154	146	126	
3	2,50	3,49	2559	204	214	301	215	157	215	181	181	235	217	224	215	
4	3,50	4,49	3788	342	250	245	347	277	233	223	237	386	453	413	382	
5	4,50	5,49	4601	340	304	250	239	316	266	359	340	545	658	539	445	
6	5,50	6,49	5225	411	290	258	224	279	253	435	561	625	724	690	475	
7	6,50	7,49	5778	380	346	242	291	348	222	481	631	727	798	738	574	
8	7,50	8,49	6112	281	175	219	268	428	308	548	747	981	820	774	563	
9	8,50	9,49	6055	201	221	278	310	304	287	498	684	897	862	804	709	
10	9,50	10,49	6261	202	153	232	287	361	323	487	772	904	946	889	705	
11	10,50	11,49	6119	116	59	237	300	397	364	410	675	894	969	920	778	
12	11,50	12,49	6216	102	53	210	316	576	395	421	607	997	928	968	643	
13	12,50	13,49	5724	97	46	149	307	500	465	387	557	849	796	865	706	
14	13,50	14,49	4896	85	34	103	178	461	453	327	470	723	664	724	674	
15	14,50	15,49	4604	83	25	125	104	510	432	308	457	662	699	595	604	
16	15,50	16,49	4018	91	19	95	90	463	335	297	445	529	654	579	421	
17	16,50	17,49	3383	63	7	70	61	320	303	255	450	483	532	464	375	
18	17,50	18,49	2724	46	1	29	93	210	255	207	404	436	464	299	280	
19	18,50	19,49	2300	29	1	25	101	142	152	166	323	367	349	249	396	
20	19,50	20,49	1975	12	0	3	85	107	119	150	244	371	254	239	391	
21	20,50	21,49	1466	15	1	6	52	61	90	94	189	292	201	214	251	
22	21,50	22,49	1290	10	1	3	58	58	46	84	154	243	195	243	195	
23	22,50	23,49	945	5	2	3	56	65	46	70	91	147	128	168	164	
24	23,50	24,49	715	5	6	2	36	91	33	30	53	106	95	166	92	
25	24,50	25,49	472	5	0	3	47	68	5	22	28	50	50	126	68	
26	25,50	26,49	336	1	3	2	56	48	1	16	29	41	38	63	38	
27	26,50	27,49	181	0	1	2	38	28	0	6	17	28	17	32	12	
28	27,50	28,49	107	0	5	1	17	12	0	2	6	9	21	26	8	
29	28,50	29,49	84	0	5	4	21	11	0	0	3	10	6	20	4	
30	29,50	30,49	92	0	4	0	28	1	0	0	5	16	6	24	8	
31	30,50	31,49	60	0	3	0	13	0	0	0	2	8	8	22	4	
32	31,50	32,49	42	0	0	0	8	0	0	0	0	3	11	17	3	
33	32,50	33,49	26	0	0	0	0	0	0	0	0	0	11	11	4	
34	33,50	34,49	6	0	0	0	0	0	0	0	0	0	4	2	0	
35	34,50	35,49	4	0	0	0	0	0	0	0	0	0	1	3	0	
36	35,50	36,49	1	0	0	0	0	0	0	0	0	0	1	0	0	
37	36,50	37,49	2	0	0	0	0	0	0	0	0	0	1	1	0	
38	37,50	38,49	0	0	0	0	0	0	0	0	0	0	0	0	0	
39	38,50	39,49	0	0	0	0	0	0	0	0	0	0	0	0	0	
40	39,50	40,49	0	0	0	0	0	0	0	0	0	0	0	0	0	
41	40,50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	



Project:

Energy Island North Sea

Licensed user:

EMD International A/S

Niels Jernes Vej 10

DK-9220 Aalborg Ø

+45 6916 4850

Thomas Sørensen / ts@emd.dk

Calculated:

06/03/2024 09.34

Meteo data report - Frequency distribution (TAB file data)**Mast:** Lot 2 complete 2y ; Complete period **Period:** Full period: 15/11/2021 - 15/11/2023 (24,0 months)**Frequency distribution (TAB file data)**

240,00m - Subst															
Bin	Start	End	Sum	0-N	1-NNE	2-ENE	3-E	4-ESE	5-SSE	6-S	7-SSW	8-WSW	9-W	10-WNW	11-NNW
Mean			11,30	7,86	6,76	8,56	10,76	11,95	11,74	11,06	11,64	11,80	11,61	11,87	12,07
0	0,49	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	0,50	1,49	688	58	66	63	53	42	41	50	57	70	49	70	69
2	1,50	2,49	1669	152	171	167	149	109	101	100	154	148	150	141	127
3	2,50	3,49	2620	217	215	298	225	188	200	173	192	248	209	253	202
4	3,50	4,49	3777	333	241	240	354	255	219	229	242	411	431	450	372
5	4,50	5,49	4622	335	310	228	288	300	261	345	361	538	672	526	458
6	5,50	6,49	5354	427	291	267	234	295	241	430	572	617	770	714	496
7	6,50	7,49	5873	371	330	235	318	345	236	501	675	722	814	748	578
8	7,50	8,49	6142	274	197	224	261	431	297	531	775	992	792	798	570
9	8,50	9,49	6081	206	229	277	301	321	311	492	690	900	862	818	674
10	9,50	10,49	6345	196	158	211	335	327	333	482	768	931	987	887	730
11	10,50	11,49	6257	130	63	255	280	448	368	415	685	945	959	946	763
12	11,50	12,49	6227	111	44	229	339	544	396	427	595	980	930	957	675
13	12,50	13,49	5696	87	43	138	299	505	497	384	586	824	784	839	710
14	13,50	14,49	5026	97	36	112	180	483	501	349	477	742	653	733	663
15	14,50	15,49	4542	85	21	138	122	518	398	277	465	639	732	589	558
16	15,50	16,49	3992	97	13	97	73	463	333	302	448	556	626	565	419
17	16,50	17,49	3473	65	10	66	77	326	317	255	460	495	560	450	392
18	17,50	18,49	2700	36	1	41	98	201	252	211	423	450	406	299	282
19	18,50	19,49	2220	20	1	22	91	144	159	168	293	347	349	250	376
20	19,50	20,49	1955	12	2	7	98	109	105	152	243	356	242	243	386
21	20,50	21,49	1465	13	0	6	45	48	80	108	198	298	212	220	237
22	21,50	22,49	1169	4	3	4	56	64	61	80	139	187	172	214	185
23	22,50	23,49	879	6	4	3	46	60	38	58	78	133	112	192	149
24	23,50	24,49	631	3	1	1	40	88	25	32	45	76	69	155	96
25	24,50	25,49	459	2	3	4	57	68	5	17	37	49	53	106	58
26	25,50	26,49	251	1	4	3	48	39	1	13	10	31	34	43	24
27	26,50	27,49	155	0	3	3	31	20	0	2	11	18	22	33	12
28	27,50	28,49	107	0	6	2	27	13	0	1	7	12	11	21	7
29	28,50	29,49	98	0	2	0	32	6	0	0	8	14	7	23	6
30	29,50	30,49	74	0	4	1	20	0	0	0	2	12	4	24	7
31	30,50	31,49	47	0	2	0	9	0	0	0	0	2	12	17	5
32	31,50	32,49	26	0	0	0	4	0	0	0	1	1	7	11	2
33	32,50	33,49	25	0	0	0	4	0	0	0	0	0	10	11	0
34	33,50	34,49	4	0	0	0	0	0	0	0	0	0	2	2	0
35	34,50	35,49	0	0	0	0	0	0	0	0	0	0	0	0	0
36	35,50	36,49	3	0	0	0	0	0	0	0	0	0	1	2	0
37	36,50	37,49	0	0	0	0	0	0	0	0	0	0	0	0	0
38	37,50	38,49	0	0	0	0	0	0	0	0	0	0	0	0	0
39	38,50	39,49	0	0	0	0	0	0	0	0	0	0	0	0	0
40	39,50	40,49	0	0	0	0	0	0	0	0	0	0	0	0	0
41	40,50	0	0	0	0	0	0	0	0	0	0	0	0	0	0



Project:

Energy Island North Sea

Licensed user:

EMD International A/S

Niels Jernes Vej 10

DK-9220 Aalborg Ø

+45 6916 4850

Thomas Sørensen / ts@emd.dk

Calculated:

06/03/2024 09.34

Meteo data report - Frequency distribution (TAB file data)**Mast:** Lot 2 complete 2y ; Complete period **Period:** Full period: 15/11/2021 - 15/11/2023 (24,0 months)**Frequency distribution (TAB file data)**

200,00m - Subst															
Bin	Start	End	Sum	0-N	1-NNE	2-ENE	3-E	4-ESE	5-SSE	6-S	7-SSW	8-WSW	9-W	10-WNW	11-NNW
Mean			11,15	7,79	6,70	8,54	10,73	11,91	11,67	10,93	11,45	11,61	11,44	11,64	11,95
0	0,49	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	0,50	1,49	687	63	61	55	48	60	36	49	67	61	51	74	62
2	1,50	2,49	1680	164	170	184	152	92	84	112	144	134	164	153	127
3	2,50	3,49	2694	224	224	301	220	203	202	189	194	263	201	274	199
4	3,50	4,49	3875	325	260	236	372	269	218	247	224	438	445	468	373
5	4,50	5,49	4667	339	326	237	262	294	268	330	396	541	666	544	464
6	5,50	6,49	5487	419	288	272	270	269	228	457	609	644	775	728	528
7	6,50	7,49	6023	396	339	237	350	368	234	491	704	749	822	764	569
8	7,50	8,49	6182	256	214	224	257	416	283	562	745	1005	823	806	591
9	8,50	9,49	6091	223	203	282	315	344	312	486	719	891	832	820	664
10	9,50	10,49	6408	194	148	209	326	348	374	487	751	926	982	933	730
11	10,50	11,49	6366	120	73	268	286	455	373	445	675	970	974	943	784
12	11,50	12,49	6313	110	37	225	337	578	407	431	602	1036	933	946	671
13	12,50	13,49	5648	90	51	143	317	470	507	376	536	824	781	875	678
14	13,50	14,49	5278	89	29	110	211	533	572	333	555	771	717	704	654
15	14,50	15,49	4587	90	26	149	119	553	395	290	486	648	694	585	552
16	15,50	16,49	4020	92	15	82	92	492	331	286	463	514	650	568	435
17	16,50	17,49	3401	53	6	66	77	322	327	284	428	513	547	426	352
18	17,50	18,49	2624	28	1	49	98	188	226	229	404	407	405	269	320
19	18,50	19,49	2229	24	1	17	82	146	152	184	306	378	309	239	391
20	19,50	20,49	1820	13	0	3	81	83	86	143	230	351	207	255	368
21	20,50	21,49	1354	16	1	4	73	54	65	98	169	250	213	200	211
22	21,50	22,49	1002	2	3	6	61	61	56	70	96	159	130	200	158
23	22,50	23,49	803	7	1	4	41	64	35	43	65	120	109	185	129
24	23,50	24,49	594	8	3	3	33	102	10	23	37	52	70	159	94
25	24,50	25,49	328	0	2	5	65	56	3	14	18	31	35	56	43
26	25,50	26,49	196	0	4	6	40	36	0	8	7	22	27	27	19
27	26,50	27,49	110	1	4	2	20	19	0	1	7	12	6	27	11
28	27,50	28,49	117	0	7	0	38	8	0	0	8	19	8	23	6
29	28,50	29,49	87	0	5	1	32	3	0	0	4	11	7	16	8
30	29,50	30,49	48	0	1	0	14	2	0	0	0	0	5	22	4
31	30,50	31,49	37	0	1	0	10	0	0	0	1	0	8	14	3
32	31,50	32,49	24	0	0	0	2	0	0	0	0	0	8	11	3
33	32,50	33,49	13	0	0	0	3	0	0	0	0	0	4	6	0
34	33,50	34,49	4	0	0	0	0	0	0	0	0	0	1	3	0
35	34,50	35,49	1	0	0	0	0	0	0	0	0	0	1	0	0
36	35,50	36,49	0	0	0	0	0	0	0	0	0	0	0	0	0
37	36,50	37,49	0	0	0	0	0	0	0	0	0	0	0	0	0
38	37,50	38,49	0	0	0	0	0	0	0	0	0	0	0	0	0
39	38,50	39,49	0	0	0	0	0	0	0	0	0	0	0	0	0
40	39,50	40,49	0	0	0	0	0	0	0	0	0	0	0	0	0
41	40,50	0	0	0	0	0	0	0	0	0	0	0	0	0	0



Project:

Energy Island North Sea

Licensed user:

EMD International A/S

Niels Jernes Vej 10

DK-9220 Aalborg Ø

+45 6916 4850

Thomas Sørensen / ts@emd.dk

Calculated:

06/03/2024 09.34

Meteo data report - Frequency distribution (TAB file data)**Mast:** Lot 2 complete 2y ; Complete period **Period:** Full period: 15/11/2021 - 15/11/2023 (24,0 months)**Frequency distribution (TAB file data)**

180,00m - Subst															
Bin	Start	End	Sum	0-N	1-NNE	2-ENE	3-E	4-ESE	5-SSE	6-S	7-SSW	8-WSW	9-W	10-WNW	11-NNW
Mean			11,06	7,78	6,68	8,64	10,68	11,89	11,54	10,90	11,31	11,49	11,31	11,54	11,84
0	0,49	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	0,50	1,49	702	65	54	58	53	54	43	51	59	69	54	85	57
2	1,50	2,49	1731	176	188	163	150	92	101	105	150	152	151	155	148
3	2,50	3,49	2709	216	226	302	233	189	207	182	196	262	218	280	198
4	3,50	4,49	3947	326	271	232	377	301	210	247	221	441	461	487	373
5	4,50	5,49	4664	327	299	243	252	279	273	317	412	554	683	542	483
6	5,50	6,49	5531	449	275	295	276	260	236	464	619	611	768	728	550
7	6,50	7,49	6111	392	340	247	345	341	231	505	761	776	820	793	560
8	7,50	8,49	6230	256	203	215	292	442	271	594	710	1011	833	793	610
9	8,50	9,49	6170	223	206	276	326	338	346	495	745	877	839	840	659
10	9,50	10,49	6391	179	148	223	311	355	336	470	755	937	954	954	769
11	10,50	11,49	6522	137	70	253	307	467	408	478	679	1029	1001	935	758
12	11,50	12,49	6414	103	44	234	328	576	444	459	633	970	968	955	700
13	12,50	13,49	5677	94	49	157	335	495	523	382	518	848	735	871	670
14	13,50	14,49	5364	84	29	114	226	534	558	330	588	796	759	686	660
15	14,50	15,49	4581	100	21	148	114	613	358	286	510	614	677	596	544
16	15,50	16,49	4051	83	23	95	94	476	323	332	461	559	627	563	415
17	16,50	17,49	3358	66	5	68	97	288	314	286	427	499	542	424	342
18	17,50	18,49	2595	30	0	42	92	194	218	227	402	437	403	246	304
19	18,50	19,49	2181	15	2	19	94	147	144	180	277	353	263	269	418
20	19,50	20,49	1726	21	0	5	73	78	75	151	210	335	229	209	340
21	20,50	21,49	1221	9	0	4	69	48	73	83	140	191	172	240	192
22	21,50	22,49	1029	6	2	7	61	63	60	56	90	166	136	205	177
23	22,50	23,49	726	7	1	4	43	75	21	31	63	94	91	176	120
24	23,50	24,49	478	6	3	3	36	87	6	20	19	42	60	120	76
25	24,50	25,49	294	2	3	3	57	58	4	17	8	28	24	54	36
26	25,50	26,49	165	0	1	7	44	28	0	4	12	14	15	23	17
27	26,50	27,49	136	0	7	3	30	21	0	1	4	21	5	30	14
28	27,50	28,49	84	0	6	0	26	6	0	0	5	15	5	16	5
29	28,50	29,49	69	0	3	3	22	5	0	0	1	4	6	15	10
30	29,50	30,49	65	0	4	3	21	0	0	0	0	0	10	23	4
31	30,50	31,49	39	0	0	1	9	0	0	0	1	0	7	19	2
32	31,50	32,49	14	0	0	0	1	0	0	0	0	0	7	4	2
33	32,50	33,49	9	0	0	0	0	2	0	0	0	0	2	5	0
34	33,50	34,49	2	0	0	0	0	0	0	0	0	0	1	1	0
35	34,50	35,49	0	0	0	0	0	0	0	0	0	0	0	0	0
36	35,50	36,49	0	0	0	0	0	0	0	0	0	0	0	0	0
37	36,50	37,49	0	0	0	0	0	0	0	0	0	0	0	0	0
38	37,50	38,49	0	0	0	0	0	0	0	0	0	0	0	0	0
39	38,50	39,49	0	0	0	0	0	0	0	0	0	0	0	0	0
40	39,50	40,49	0	0	0	0	0	0	0	0	0	0	0	0	0
41	40,50	0	0	0	0	0	0	0	0	0	0	0	0	0	0



Project:

Energy Island North Sea

Licensed user:

EMD International A/S

Niels Jernes Vej 10

DK-9220 Aalborg Ø

+45 6916 4850

Thomas Sørensen / ts@emd.dk

Calculated:

06/03/2024 09.34

Meteo data report - Frequency distribution (TAB file data)**Mast:** Lot 2 complete 2y ; Complete period **Period:** Full period: 15/11/2021 - 15/11/2023 (24,0 months)**Frequency distribution (TAB file data)**

150,00m - Subst																		
Bin	Start	End	Sum	0-N	1-NNE	2-ENE	3-E	4-ESE	5-SSE	6-S	7-SSW	8-WSW	9-W	10-WNW	11-NNW	11,68		
0	0,49	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
1	0,50	1,49	690	67	58	46	57	46	37	53	61	73	52	75	65			
2	1,50	2,49	1795	178	194	175	153	105	108	132	133	132	159	185	141			
3	2,50	3,49	2757	224	234	283	241	192	200	184	205	285	203	283	223			
4	3,50	4,49	4027	329	265	262	341	299	207	253	226	468	496	505	376			
5	4,50	5,49	4764	339	300	246	275	279	261	343	418	571	687	551	494			
6	5,50	6,49	5642	442	278	284	325	284	236	491	631	629	767	734	541			
7	6,50	7,49	6248	414	363	244	343	308	240	572	733	799	847	791	594			
8	7,50	8,49	6331	257	202	209	338	436	290	614	728	1030	827	820	580			
9	8,50	9,49	6221	222	201	287	314	334	331	519	741	889	849	895	639			
10	9,50	10,49	6433	172	139	224	317	340	353	505	751	956	972	907	797			
11	10,50	11,49	6771	131	84	260	340	497	408	506	688	1089	996	994	778			
12	11,50	12,49	6615	89	45	245	318	590	554	481	663	986	928	973	743			
13	12,50	13,49	5916	97	42	176	323	543	603	368	600	886	774	874	630			
14	13,50	14,49	5257	83	35	133	270	540	465	325	596	759	740	692	619			
15	14,50	15,49	4532	91	21	141	117	654	293	332	508	584	699	573	519			
16	15,50	16,49	4065	88	18	98	122	485	305	335	485	534	667	531	397			
17	16,50	17,49	3250	55	6	66	79	275	278	276	462	518	508	384	343			
18	17,50	18,49	2490	38	0	37	104	166	189	233	377	383	337	290	336			
19	18,50	19,49	2043	11	1	21	89	121	126	168	253	378	249	239	387			
20	19,50	20,49	1541	18	1	2	82	81	78	112	182	260	192	209	324			
21	20,50	21,49	1132	7	1	9	68	53	69	70	100	179	154	219	203			
22	21,50	22,49	912	7	3	4	61	56	50	41	78	128	128	218	138			
23	22,50	23,49	611	6	0	1	37	81	17	25	37	52	80	173	102			
24	23,50	24,49	372	2	5	2	38	81	6	18	16	28	31	84	61			
25	24,50	25,49	236	2	2	8	60	53	0	7	8	20	10	37	29			
26	25,50	26,49	163	0	1	5	45	29	0	2	6	18	7	34	16			
27	26,50	27,49	100	0	2	2	29	12	0	0	5	14	5	18	13			
28	27,50	28,49	69	0	4	3	26	5	0	0	4	1	5	12	9			
29	28,50	29,49	79	0	6	1	35	1	0	0	1	1	6	24	4			
30	29,50	30,49	47	0	3	1	12	0	0	0	1	0	10	16	4			
31	30,50	31,49	29	0	0	0	5	0	0	0	0	0	7	15	2			
32	31,50	32,49	12	0	0	1	2	0	0	0	0	0	5	4	0			
33	32,50	33,49	3	0	0	0	0	0	0	0	0	0	2	1	0			
34	33,50	34,49	1	0	0	0	1	0	0	0	0	0	0	0	0			
35	34,50	35,49	0	0	0	0	0	0	0	0	0	0	0	0	0			
36	35,50	36,49	0	0	0	0	0	0	0	0	0	0	0	0	0			
37	36,50	37,49	0	0	0	0	0	0	0	0	0	0	0	0	0			
38	37,50	38,49	0	0	0	0	0	0	0	0	0	0	0	0	0			
39	38,50	39,49	0	0	0	0	0	0	0	0	0	0	0	0	0			
40	39,50	40,49	0	0	0	0	0	0	0	0	0	0	0	0	0			
41	40,50	0	0	0	0	0	0	0	0	0	0	0	0	0	0			



Project:

Energy Island North Sea

Licensed user:

EMD International A/S

Niels Jernes Vej 10

DK-9220 Aalborg Ø

+45 6916 4850

Thomas Sørensen / ts@emd.dk

Calculated:

06/03/2024 09.34

Meteo data report - Frequency distribution (TAB file data)**Mast:** Lot 2 complete 2y ; Complete period **Period:** Full period: 15/11/2021 - 15/11/2023 (24,0 months)**Frequency distribution (TAB file data)**

120,00m - Subst															
Bin	Start	End	Sum	0-N	1-NNE	2-ENE	3-E	4-ESE	5-SSE	6-S	7-SSW	8-WSW	9-W	10-WNW	11-NNW
Mean			10,71	7,63	6,61	8,61	10,71	11,70	11,03	10,35	10,98	10,92	10,90	11,23	11,49
0	0,49	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	0,50	1,49	701	67	57	51	41	44	38	59	59	80	60	72	73
2	1,50	2,49	1799	170	202	185	131	90	106	123	151	156	157	176	152
3	2,50	3,49	2861	214	263	285	240	202	214	202	182	304	220	292	243
4	3,50	4,49	4025	320	271	258	326	322	200	258	233	477	483	509	368
5	4,50	5,49	4957	377	297	265	287	311	245	378	437	587	689	554	530
6	5,50	6,49	5868	478	269	275	366	247	251	539	658	642	821	738	584
7	6,50	7,49	6338	379	351	249	367	321	267	591	709	863	851	821	569
8	7,50	8,49	6419	265	187	255	332	402	338	671	747	1020	826	784	592
9	8,50	9,49	6485	228	212	264	340	344	359	563	783	901	911	903	677
10	9,50	10,49	6836	169	157	225	344	370	410	543	774	1062	1006	941	835
11	10,50	11,49	6849	123	71	292	357	537	444	559	655	1097	991	995	728
12	11,50	12,49	6941	87	56	223	344	640	698	443	741	1057	938	969	745
13	12,50	13,49	5880	85	42	198	377	539	560	348	607	870	717	876	661
14	13,50	14,49	5062	107	45	142	250	568	360	346	615	677	715	665	572
15	14,50	15,49	4530	97	19	118	150	594	269	363	510	583	748	579	500
16	15,50	16,49	3930	89	17	111	114	477	252	324	497	550	625	502	372
17	16,50	17,49	3044	46	4	64	89	262	239	284	414	442	469	361	370
18	17,50	18,49	2424	28	0	30	111	152	176	203	362	400	319	278	365
19	18,50	19,49	1813	20	2	9	90	99	102	150	191	328	217	237	368
20	19,50	20,49	1335	9	0	6	89	67	83	72	139	193	185	209	283
21	20,50	21,49	1013	8	2	9	50	53	66	54	86	166	132	209	178
22	21,50	22,49	747	8	0	2	62	65	21	28	49	55	91	235	131
23	22,50	23,49	506	4	3	5	44	85	13	19	28	33	51	121	100
24	23,50	24,49	307	2	3	5	40	70	6	14	13	19	17	67	51
25	24,50	25,49	211	0	4	9	62	46	0	2	2	21	14	26	25
26	25,50	26,49	122	0	3	2	42	22	0	0	6	14	3	21	9
27	26,50	27,49	81	0	3	2	24	13	0	0	5	2	4	15	13
28	27,50	28,49	86	0	4	1	32	7	0	0	3	2	10	22	5
29	28,50	29,49	66	0	6	1	25	0	0	0	2	0	9	17	6
30	29,50	30,49	51	0	0	0	15	0	0	0	0	0	7	26	3
31	30,50	31,49	9	0	0	0	5	0	0	0	0	0	1	3	0
32	31,50	32,49	5	0	0	0	2	0	0	0	0	0	2	1	0
33	32,50	33,49	2	0	0	0	0	0	0	0	0	0	1	1	0
34	33,50	34,49	0	0	0	0	0	0	0	0	0	0	0	0	0
35	34,50	35,49	0	0	0	0	0	0	0	0	0	0	0	0	0
36	35,50	36,49	0	0	0	0	0	0	0	0	0	0	0	0	0
37	36,50	37,49	0	0	0	0	0	0	0	0	0	0	0	0	0
38	37,50	38,49	0	0	0	0	0	0	0	0	0	0	0	0	0
39	38,50	39,49	0	0	0	0	0	0	0	0	0	0	0	0	0
40	39,50	40,49	0	0	0	0	0	0	0	0	0	0	0	0	0
41	40,50	0	0	0	0	0	0	0	0	0	0	0	0	0	0



Project:

Energy Island North Sea

Licensed user:

EMD International A/S

Niels Jernes Vej 10

DK-9220 Aalborg Ø

+45 6916 4850

Thomas Sørensen / ts@emd.dk

Calculated:

06/03/2024 09.34

Meteo data report - Frequency distribution (TAB file data)**Mast:** Lot 2 complete 2y ; Complete period **Period:** Full period: 15/11/2021 - 15/11/2023 (24,0 months)**Frequency distribution (TAB file data)**

100,00m - Subst															
Bin	Start	End	Sum	0-N	1-NNE	2-ENE	3-E	4-ESE	5-SSE	6-S	7-SSW	8-WSW	9-W	10-WNW	11-NNW
Mean			10,53	7,57	6,55	8,59	10,59	11,56	10,69	10,13	10,76	10,72	10,74	11,06	11,36
0	0,49	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	0,50	1,49	711	63	58	49	45	37	39	60	68	81	60	77	74
2	1,50	2,49	1858	169	222	192	133	99	98	131	156	152	149	197	160
3	2,50	3,49	2901	219	258	264	224	212	234	205	168	317	232	292	276
4	3,50	4,49	4167	335	296	259	342	323	205	280	261	486	513	523	344
5	4,50	5,49	5061	382	285	255	297	312	263	398	458	581	711	571	548
6	5,50	6,49	6016	446	281	291	380	275	276	537	656	697	854	744	579
7	6,50	7,49	6478	415	351	249	376	311	267	628	757	850	856	818	600
8	7,50	8,49	6635	285	185	257	355	392	413	691	759	1026	831	820	621
9	8,50	9,49	6624	211	208	267	356	369	392	577	819	920	931	905	669
10	9,50	10,49	6947	184	143	252	342	406	442	542	783	1074	1014	950	815
11	10,50	11,49	7380	119	87	289	398	573	582	593	728	1191	994	1043	783
12	11,50	12,49	8867	82	53	233	358	680	712	399	749	1013	932	945	711
13	12,50	13,49	5781	92	50	199	391	549	442	370	658	811	745	852	622
14	13,50	14,49	4944	80	39	150	253	571	288	342	584	674	744	655	564
15	14,50	15,49	4505	108	27	130	139	581	251	377	509	545	736	582	520
16	15,50	16,49	3698	92	11	94	100	432	229	319	447	553	599	456	366
17	16,50	17,49	2991	48	3	50	97	251	213	290	428	444	428	370	369
18	17,50	18,49	2139	25	0	29	88	130	151	172	301	369	280	226	368
19	18,50	19,49	1641	14	1	8	101	91	89	112	158	283	205	221	358
20	19,50	20,49	1243	7	3	11	72	72	88	54	113	189	146	221	267
21	20,50	21,49	913	9	0	5	70	51	49	39	76	97	140	207	170
22	21,50	22,49	695	8	2	5	48	82	20	30	43	48	73	199	137
23	22,50	23,49	428	4	3	4	42	73	8	18	19	24	29	122	82
24	23,50	24,49	265	2	3	8	65	68	5	8	4	17	13	46	26
25	24,50	25,49	178	0	4	4	53	31	0	0	4	14	12	31	25
26	25,50	26,49	106	0	2	4	34	29	0	0	7	6	3	11	10
27	26,50	27,49	88	0	3	1	25	9	0	0	3	2	6	24	15
28	27,50	28,49	84	0	5	1	27	6	0	0	2	1	12	19	11
29	28,50	29,49	52	0	4	0	20	0	0	0	0	0	7	20	1
30	29,50	30,49	32	0	0	0	14	0	0	0	0	5	12	1	
31	30,50	31,49	8	0	0	0	4	0	0	0	0	0	4	0	
32	31,50	32,49	3	0	0	0	1	0	0	0	0	1	1	0	
33	32,50	33,49	1	0	0	0	0	0	0	0	0	1	0	0	
34	33,50	34,49	0	0	0	0	0	0	0	0	0	0	0	0	
35	34,50	35,49	0	0	0	0	0	0	0	0	0	0	0	0	
36	35,50	36,49	0	0	0	0	0	0	0	0	0	0	0	0	
37	36,50	37,49	0	0	0	0	0	0	0	0	0	0	0	0	
38	37,50	38,49	0	0	0	0	0	0	0	0	0	0	0	0	
39	38,50	39,49	0	0	0	0	0	0	0	0	0	0	0	0	
40	39,50	40,49	0	0	0	0	0	0	0	0	0	0	0	0	
41	40,50	0	0	0	0	0	0	0	0	0	0	0	0	0	



Project:

Energy Island North Sea

Licensed user:

EMD International A/S

Niels Jernes Vej 10

DK-9220 Aalborg Ø

+45 6916 4850

Thomas Sørensen / ts@emd.dk

Calculated:

06/03/2024 09.34

Meteo data report - Frequency distribution (TAB file data)**Mast:** Lot 2 complete 2y ; Complete period **Period:** Full period: 15/11/2021 - 15/11/2023 (24,0 months)**Frequency distribution (TAB file data)**

90,00m - Subst															
Bin	Start	End	Sum	0-N	1-NNE	2-ENE	3-E	4-ESE	5-SSE	6-S	7-SSW	8-WSW	9-W	10-WNW	11-NNW
Mean			10,42	7,47	6,58	8,51	10,47	11,48	10,45	10,03	10,61	10,60	10,62	10,98	11,27
0	0,49	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	0,50	1,49	746	69	61	59	44	35	42	59	55	84	66	91	81
2	1,50	2,49	1868	165	224	195	143	92	103	130	160	166	148	187	155
3	2,50	3,49	2966	235	257	275	230	209	238	190	178	313	247	308	286
4	3,50	4,49	4259	348	304	255	347	327	223	284	281	495	519	514	362
5	4,50	5,49	5222	395	274	262	306	325	259	439	486	602	747	574	553
6	5,50	6,49	6203	458	298	279	369	277	275	583	715	725	876	757	591
7	6,50	7,49	6727	418	328	283	388	358	319	680	747	885	857	844	620
8	7,50	8,49	6820	274	193	275	370	416	466	707	767	1046	866	809	631
9	8,50	9,49	6860	218	231	275	347	359	472	595	852	946	944	948	673
10	9,50	10,49	7116	186	148	276	374	352	461	589	792	1135	994	990	819
11	10,50	11,49	7433	114	79	275	388	634	659	583	766	1160	1014	990	771
12	11,50	12,49	6950	83	53	241	414	679	668	408	770	977	950	987	720
13	12,50	13,49	5572	94	49	187	329	520	383	361	657	807	722	827	636
14	13,50	14,49	4906	88	47	144	257	576	273	378	556	621	754	651	561
15	14,50	15,49	4449	95	23	130	138	584	208	371	501	582	711	581	525
16	15,50	16,49	3635	85	9	75	79	412	225	306	459	544	592	473	376
17	16,50	17,49	2840	31	2	59	95	219	212	280	398	433	405	355	351
18	17,50	18,49	2085	28	0	25	86	140	143	163	266	362	258	214	400
19	18,50	19,49	1600	14	0	15	105	110	77	99	141	266	188	221	364
20	19,50	20,49	1184	11	0	8	77	60	86	56	110	176	155	211	234
21	20,50	21,49	879	11	2	6	59	58	35	40	65	78	122	237	166
22	21,50	22,49	625	5	2	3	49	67	20	22	42	37	69	176	133
23	22,50	23,49	402	2	3	1	48	76	12	18	7	26	34	109	66
24	23,50	24,49	268	4	5	7	61	65	3	8	9	19	17	33	37
25	24,50	25,49	175	0	5	6	54	39	1	0	5	12	9	25	19
26	25,50	26,49	86	0	2	6	25	17	0	0	1	4	7	15	9
27	26,50	27,49	86	0	5	0	32	5	0	0	6	0	6	23	9
28	27,50	28,49	73	0	5	1	26	5	0	0	1	1	10	18	6
29	28,50	29,49	61	0	4	1	22	2	0	0	0	0	8	21	3
30	29,50	30,49	15	0	0	0	3	0	0	0	0	0	1	10	1
31	30,50	31,49	9	0	0	0	8	0	0	0	0	1	0	0	0
32	31,50	32,49	2	0	0	0	0	0	0	0	0	0	0	2	0
33	32,50	33,49	1	0	0	0	0	0	0	0	0	1	0	0	0
34	33,50	34,49	0	0	0	0	0	0	0	0	0	0	0	0	0
35	34,50	35,49	0	0	0	0	0	0	0	0	0	0	0	0	0
36	35,50	36,49	0	0	0	0	0	0	0	0	0	0	0	0	0
37	36,50	37,49	0	0	0	0	0	0	0	0	0	0	0	0	0
38	37,50	38,49	0	0	0	0	0	0	0	0	0	0	0	0	0
39	38,50	39,49	0	0	0	0	0	0	0	0	0	0	0	0	0
40	39,50	40,49	0	0	0	0	0	0	0	0	0	0	0	0	0
41	40,50	0	0	0	0	0	0	0	0	0	0	0	0	0	0



Project:

Energy Island North Sea

Licensed user:

EMD International A/S

Niels Jernes Vej 10

DK-9220 Aalborg Ø

+45 6916 4850

Thomas Sørensen / ts@emd.dk

Calculated:

06/03/2024 09.34

Meteo data report - Frequency distribution (TAB file data)**Mast:** Lot 2 complete 2y ; Complete period **Period:** Full period: 15/11/2021 - 15/11/2023 (24,0 months)**Frequency distribution (TAB file data)**

60,00m - Subst															
Bin	Start	End	Sum	0-N	1-NNE	2-ENE	3-E	4-ESE	5-SSE	6-S	7-SSW	8-WSW	9-W	10-WNW	11>NNW
Mean			10,07	7,39	6,53	8,13	10,26	11,04	9,88	9,63	10,09	10,22	10,25	10,77	11,00
0	0,49	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	0,50	1,49	787	67	68	49	55	42	38	55	71	81	82	88	91
2	1,50	2,49	1974	173	221	214	137	101	112	148	166	161	182	193	166
3	2,50	3,49	3118	257	278	306	219	225	235	195	209	324	275	311	284
4	3,50	4,49	4421	346	308	276	315	352	234	302	318	504	575	521	370
5	4,50	5,49	5505	396	271	250	347	342	300	453	583	662	755	591	555
6	5,50	6,49	6627	488	321	359	387	317	311	623	754	772	912	766	617
7	6,50	7,49	7327	397	343	274	394	393	448	850	869	972	913	847	627
8	7,50	8,49	7394	295	177	298	423	480	529	721	868	1064	981	875	683
9	8,50	9,49	7354	211	231	316	387	432	520	635	933	1081	949	975	684
10	9,50	10,49	7696	173	150	300	428	475	679	653	823	1197	1029	947	842
11	10,50	11,49	7552	107	81	326	468	732	646	421	851	1101	990	1066	763
12	11,50	12,49	6277	80	65	241	311	598	404	392	735	873	915	946	717
13	12,50	13,49	5235	99	64	186	329	487	279	371	577	693	759	786	605
14	13,50	14,49	4820	102	33	114	212	564	218	424	547	618	750	642	596
15	14,50	15,49	4056	97	20	67	106	512	158	355	461	575	697	539	469
16	15,50	16,49	3319	69	6	61	77	329	206	299	441	511	518	447	355
17	16,50	17,49	2488	40	2	41	93	218	190	193	300	415	343	291	362
18	17,50	18,49	1785	25	0	21	95	122	110	115	171	300	196	239	391
19	18,50	19,49	1401	15	1	5	101	83	78	65	124	203	158	234	334
20	19,50	20,49	1014	8	2	11	68	55	62	42	78	90	135	261	202
21	20,50	21,49	722	11	1	4	63	71	31	34	38	51	69	207	142
22	21,50	22,49	497	5	3	2	46	81	11	22	19	25	52	139	92
23	22,50	23,49	311	3	2	5	58	74	8	7	9	18	21	54	52
24	23,50	24,49	189	1	4	4	68	51	1	0	2	10	10	20	18
25	24,50	25,49	114	0	6	2	31	25	0	0	5	4	9	19	13
26	25,50	26,49	98	0	8	0	37	9	0	0	6	0	11	17	10
27	26,50	27,49	74	0	4	0	27	4	0	0	3	0	8	24	4
28	27,50	28,49	66	0	4	3	25	0	0	0	0	0	8	20	6
29	28,50	29,49	20	0	0	0	13	0	0	0	0	0	1	6	0
30	29,50	30,49	7	0	0	0	3	0	0	0	0	0	1	2	1
31	30,50	31,49	0	0	0	0	0	0	0	0	0	0	0	0	0
32	31,50	32,49	0	0	0	0	0	0	0	0	0	0	0	0	0
33	32,50	33,49	0	0	0	0	0	0	0	0	0	0	0	0	0
34	33,50	34,49	0	0	0	0	0	0	0	0	0	0	0	0	0
35	34,50	35,49	0	0	0	0	0	0	0	0	0	0	0	0	0
36	35,50	36,49	0	0	0	0	0	0	0	0	0	0	0	0	0
37	36,50	37,49	0	0	0	0	0	0	0	0	0	0	0	0	0
38	37,50	38,49	0	0	0	0	0	0	0	0	0	0	0	0	0
39	38,50	39,49	0	0	0	0	0	0	0	0	0	0	0	0	0
40	39,50	40,49	0	0	0	0	0	0	0	0	0	0	0	0	0
41	40,50	0	0	0	0	0	0	0	0	0	0	0	0	0	0



Project:

Energy Island North Sea

Licensed user:

EMD International A/S

Niels Jernes Vej 10

DK-9220 Aalborg Ø

+45 6916 4850

Thomas Sørensen / ts@emd.dk

Calculated:

06/03/2024 09.34

Meteo data report - Frequency distribution (TAB file data)**Mast:** Lot 2 complete 2y ; Complete period **Period:** Full period: 15/11/2021 - 15/11/2023 (24,0 months)**Frequency distribution (TAB file data)**

40,00m - Subst															
Bin	Start	End	Sum	0-N	1-NNE	2-ENE	3-E	4-ESE	5-SSE	6-S	7-SSW	8-WSW	9-W	10-WNW	11>NNW
Mean			9,73	7,28	6,34	7,85	9,91	10,64	9,40	9,26	9,64	9,85	9,96	10,49	10,72
0	0,49	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	0,50	1,49	852	71	84	61	55	37	41	65	76	78	85	100	99
2	1,50	2,49	2068	185	223	204	143	103	121	147	189	176	201	197	179
3	2,50	3,49	3359	262	315	315	258	262	245	214	218	346	291	331	302
4	3,50	4,49	4674	371	301	270	337	339	235	331	361	557	630	551	391
5	4,50	5,49	5891	408	302	308	361	374	347	482	694	694	785	585	551
6	5,50	6,49	7101	469	353	373	384	339	420	728	832	828	949	811	615
7	6,50	7,49	7899	384	325	314	443	501	528	920	924	1071	968	880	641
8	7,50	8,49	7804	277	191	352	459	588	569	739	949	1078	1004	916	682
9	8,50	9,49	7834	202	220	328	470	497	619	639	954	1181	955	1004	765
10	9,50	10,49	7791	171	138	312	445	557	649	553	906	1212	1052	945	851
11	10,50	11,49	7188	120	85	315	394	694	466	409	816	971	1018	1134	766
12	11,50	12,49	5908	87	54	232	299	560	309	386	685	818	894	883	701
13	12,50	13,49	5068	86	62	120	297	483	223	403	573	647	794	737	643
14	13,50	14,49	4539	112	27	86	169	540	168	387	474	621	791	620	544
15	14,50	15,49	3892	102	16	53	88	472	182	354	450	583	608	545	439
16	15,50	16,49	2967	65	3	58	95	281	211	240	361	468	433	372	380
17	16,50	17,49	2167	31	1	29	90	170	156	154	239	342	277	294	384
18	17,50	18,49	1602	15	0	15	101	116	95	76	125	226	193	254	386
19	18,50	19,49	1232	14	1	7	96	76	75	50	100	138	141	247	287
20	19,50	20,49	836	10	2	9	67	51	37	36	51	52	98	256	167
21	20,50	21,49	544	6	5	1	54	81	20	28	15	32	47	162	93
22	21,50	22,49	353	7	1	5	50	91	6	7	11	16	35	63	61
23	22,50	23,49	225	2	3	5	72	47	3	2	3	12	15	29	32
24	23,50	24,49	128	0	6	5	39	33	0	0	4	4	7	19	11
25	24,50	25,49	116	0	4	3	32	18	0	0	6	1	13	28	11
26	25,50	26,49	89	0	8	2	34	5	0	0	4	0	7	24	5
27	26,50	27,49	57	0	3	0	31	0	0	0	0	0	8	14	1
28	27,50	28,49	23	0	1	1	14	0	0	0	0	0	1	5	1
29	28,50	29,49	10	0	0	0	6	0	0	0	0	0	0	4	0
30	29,50	30,49	0	0	0	0	0	0	0	0	0	0	0	0	0
31	30,50	31,49	0	0	0	0	0	0	0	0	0	0	0	0	0
32	31,50	32,49	0	0	0	0	0	0	0	0	0	0	0	0	0
33	32,50	33,49	0	0	0	0	0	0	0	0	0	0	0	0	0
34	33,50	34,49	0	0	0	0	0	0	0	0	0	0	0	0	0
35	34,50	35,49	0	0	0	0	0	0	0	0	0	0	0	0	0
36	35,50	36,49	0	0	0	0	0	0	0	0	0	0	0	0	0
37	36,50	37,49	0	0	0	0	0	0	0	0	0	0	0	0	0
38	37,50	38,49	0	0	0	0	0	0	0	0	0	0	0	0	0
39	38,50	39,49	0	0	0	0	0	0	0	0	0	0	0	0	0
40	39,50	40,49	0	0	0	0	0	0	0	0	0	0	0	0	0
41	40,50	0	0	0	0	0	0	0	0	0	0	0	0	0	0



Project:

Energy Island North Sea

Licensed user:

EMD International A/S

Niels Jernes Vej 10

DK-9220 Aalborg Ø

+45 6916 4850

Thomas Sørensen / ts@emd.dk

Calculated:

06/03/2024 09.34

Meteo data report - Frequency distribution (TAB file data)**Mast:** Lot 2 complete 2y ; Complete period **Period:** Full period: 15/11/2021 - 15/11/2023 (24,0 months)**Frequency distribution (TAB file data)**

30,00m - Subst															
Bin	Start	End	Sum	0-N	1-NNE	2-ENE	3-E	4-ESE	5-SSE	6-S	7-SSW	8-WSW	9-W	10-WNW	11>NNW
Mean			9,52	7,08	6,27	7,62	9,72	10,37	9,13	9,02	9,40	9,61	9,78	10,26	10,59
0	0,49	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	0,50	1,49	897	79	77	75	60	48	58	48	75	93	82	112	90
2	1,50	2,49	2115	196	215	214	149	96	144	153	194	185	187	207	175
3	2,50	3,49	3527	278	311	327	264	289	233	226	243	366	337	352	301
4	3,50	4,49	4923	373	323	265	360	349	272	357	411	598	643	558	414
5	4,50	5,49	6165	412	300	354	362	385	393	518	744	718	811	617	551
6	5,50	6,49	7497	479	382	359	405	384	484	827	903	894	957	821	602
7	6,50	7,49	8108	393	293	338	528	556	571	899	939	1103	970	860	658
8	7,50	8,49	8098	272	206	381	458	615	583	754	970	1150	1040	952	717
9	8,50	9,49	7937	209	190	343	455	451	673	615	1002	1232	946	989	832
10	9,50	10,49	7821	151	140	305	464	611	595	503	853	1193	1104	1045	857
11	10,50	11,49	6983	103	80	309	377	667	402	414	787	919	1009	1126	790
12	11,50	12,49	5682	90	73	168	300	524	248	398	666	749	873	884	709
13	12,50	13,49	5034	100	47	115	276	467	207	391	566	660	825	723	657
14	13,50	14,49	4480	99	23	76	150	539	172	388	466	665	780	604	518
15	14,50	15,49	3668	90	14	45	106	415	212	321	432	559	539	517	418
16	15,50	16,49	2808	56	0	54	85	261	221	217	328	424	401	343	418
17	16,50	17,49	1945	24	0	33	106	155	132	106	180	327	232	234	416
18	17,50	18,49	1518	13	0	8	106	95	90	61	128	190	168	279	380
19	18,50	19,49	1084	10	0	11	83	66	79	46	72	85	128	275	229
20	19,50	20,49	699	8	5	5	71	63	24	32	30	36	69	207	149
21	20,50	21,49	444	9	1	1	49	99	15	15	11	25	44	105	70
22	21,50	22,49	261	1	3	7	59	68	4	5	7	12	25	31	39
23	22,50	23,49	185	2	3	5	66	40	1	1	9	5	8	21	24
24	23,50	24,49	125	0	9	5	35	21	0	0	5	2	13	24	11
25	24,50	25,49	99	0	6	3	37	8	0	0	2	0	9	26	8
26	25,50	26,49	59	0	3	0	25	2	0	0	0	0	8	20	1
27	26,50	27,49	40	0	2	1	26	0	0	0	1	0	0	8	2
28	27,50	28,49	12	0	0	0	7	0	0	0	0	0	2	3	0
29	28,50	29,49	1	0	0	0	0	0	0	0	0	0	0	1	0
30	29,50	30,49	0	0	0	0	0	0	0	0	0	0	0	0	0
31	30,50	31,49	0	0	0	0	0	0	0	0	0	0	0	0	0
32	31,50	32,49	0	0	0	0	0	0	0	0	0	0	0	0	0
33	32,50	33,49	0	0	0	0	0	0	0	0	0	0	0	0	0
34	33,50	34,49	0	0	0	0	0	0	0	0	0	0	0	0	0
35	34,50	35,49	0	0	0	0	0	0	0	0	0	0	0	0	0
36	35,50	36,49	0	0	0	0	0	0	0	0	0	0	0	0	0
37	36,50	37,49	0	0	0	0	0	0	0	0	0	0	0	0	0
38	37,50	38,49	0	0	0	0	0	0	0	0	0	0	0	0	0
39	38,50	39,49	0	0	0	0	0	0	0	0	0	0	0	0	0
40	39,50	40,49	0	0	0	0	0	0	0	0	0	0	0	0	0
41	40,50	0	0	0	0	0	0	0	0	0	0	0	0	0	0



Project:
Energy Island North Sea

Licensed user:
EMD International A/S
Niels Jernes Vej 10
DK-9220 Aalborg Ø
+45 6916 4850
Thomas Sørensen / ts@emd.dk
Calculated:
06/03/2024 09.34

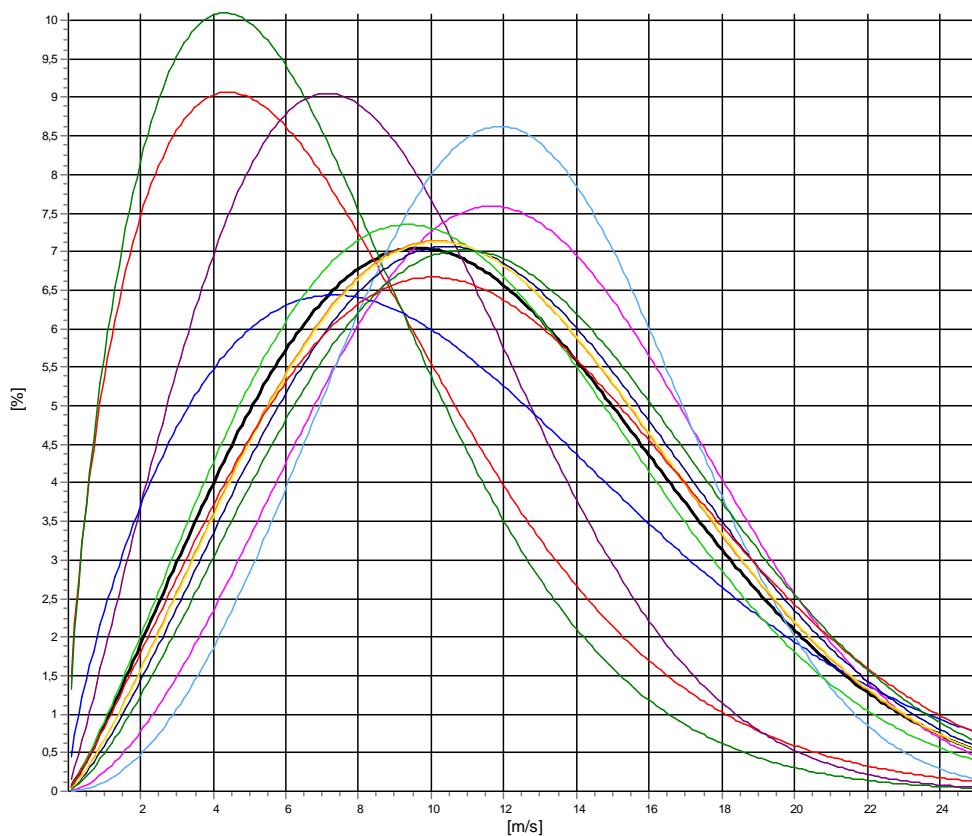
Meteo data report - Weibull data overview

Mast: Lot 2 complete 2y ; Complete period **Period:** Full period: 15/11/2021 - 15/11/2023 (24,0 months)

Height: **270,00m** - **Subst**

Weibull data

Sector	A [m/s]	k	f	Mean wind speed [m/s]
0-N	8,35	1,578	3,69	7,50
1-NNE	7,62	1,644	2,69	6,82
2-ENE	9,75	2,088	3,69	8,64
3-E	12,19	1,714	4,91	10,87
4-ESE	13,94	2,647	7,45	12,39
5-SSE	13,62	2,997	6,36	12,16
6-S	12,38	2,179	7,30	10,96
7-SSW	13,11	2,265	10,57	11,61
8-WSW	13,39	2,300	14,12	11,87
9-W	13,16	2,270	14,14	11,65
10-WNW	13,46	2,137	13,60	11,92
11>NNW	13,76	2,360	11,47	12,19
Mean	12,85	2,164	100,00	11,38



All A: 12.9 m/s k: 2.16 Vm: 11.4 m/s	N A: 8.4 m/s k: 1.58 Vm: 7.5 m/s	NNE A: 7.6 m/s k: 1.64 Vm: 6.8 m/s	ENE A: 9.8 m/s k: 2.09 Vm: 8.6 m/s
E A: 12.2 m/s k: 1.71 Vm: 10.9 m/s	ESE A: 13.9 m/s k: 2.65 Vm: 12.4 m/s	SSE A: 13.6 m/s k: 3.00 Vm: 12.2 m/s	S A: 12.4 m/s k: 2.18 Vm: 11.0 m/s
SSW A: 13.1 m/s k: 2.27 Vm: 11.6 m/s	WSW A: 13.4 m/s k: 2.30 Vm: 11.9 m/s	W A: 13.2 m/s k: 2.27 Vm: 11.7 m/s	WNW A: 13.5 m/s k: 2.14 Vm: 11.9 m/s
NNW A: 13.8 m/s k: 2.36 Vm: 12.2 m/s			



Project:
Energy Island North Sea

Licensed user:
EMD International A/S
Niels Jernes Vej 10
DK-9220 Aalborg Ø
+45 6916 4850
Thomas Sørensen / ts@emd.dk
Calculated:
06/03/2024 09.34

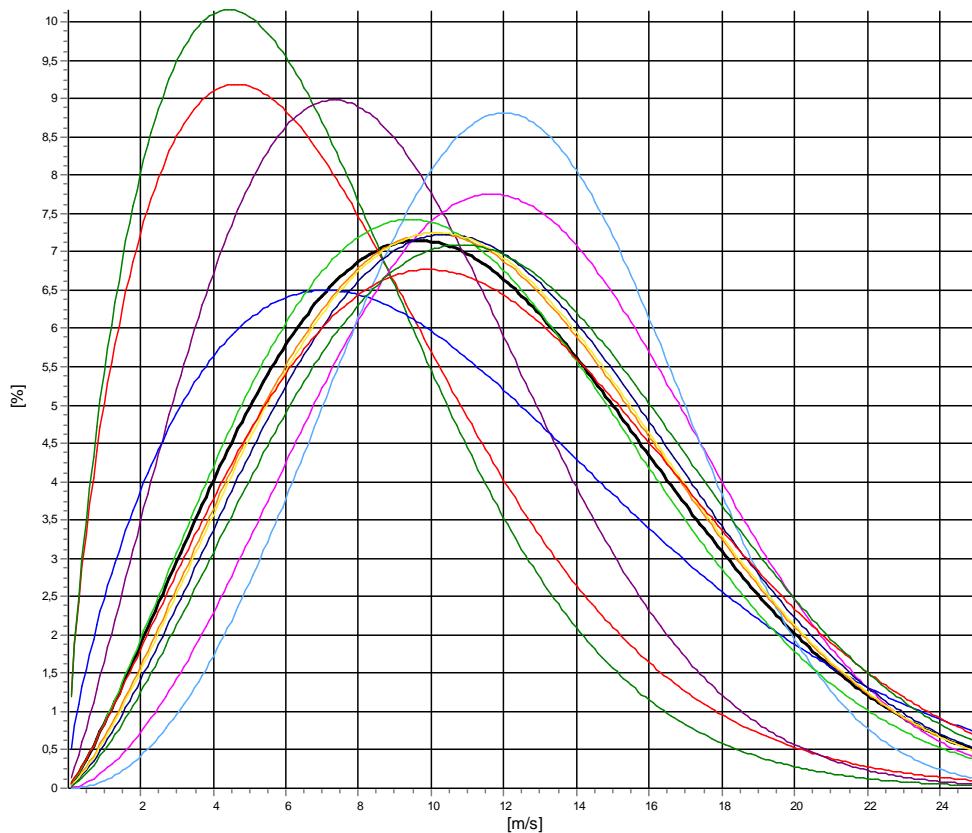
Meteo data report - Weibull data overview

Mast: Lot 2 complete 2y ; Complete period **Period:** Full period: 15/11/2021 - 15/11/2023 (24,0 months)

Height: **240,00m** - **Subst**

Weibull data

Sector	A [m/s]	k	f	Mean wind speed [m/s]
0-N	8,34	1,626	3,68	7,47
1-NNE	7,63	1,671	2,73	6,82
2-ENE	9,91	2,112	3,69	8,77
3-E	12,01	1,694	5,07	10,72
4-ESE	13,85	2,696	7,46	12,32
5-SSE	13,64	3,078	6,37	12,19
6-S	12,38	2,208	7,26	10,96
7-SSW	12,98	2,277	10,70	11,50
8-WSW	13,23	2,331	14,06	11,73
9-W	13,04	2,295	14,02	11,55
10-WNW	13,30	2,146	13,62	11,78
11>NNW	13,64	2,366	11,35	12,09
Mean	12,75	2,184	100,00	11,29



All A: 12.8 m/s k: 2.18 Vm: 11.3 m/s	N A: 8.3 m/s k: 1.63 Vm: 7.5 m/s	NNE A: 7.6 m/s k: 1.67 Vm: 6.8 m/s	ENE A: 9.9 m/s k: 2.11 Vm: 8.8 m/s
E A: 12.0 m/s k: 1.69 Vm: 10.7 m/s	ESE A: 13.9 m/s k: 2.70 Vm: 12.3 m/s	SSE A: 13.6 m/s k: 3.08 Vm: 12.2 m/s	S A: 12.4 m/s k: 2.21 Vm: 11.0 m/s
SSW A: 13.0 m/s k: 2.28 Vm: 11.5 m/s	WSW A: 13.2 m/s k: 2.33 Vm: 11.7 m/s	W A: 13.0 m/s k: 2.29 Vm: 11.6 m/s	NNW A: 13.6 m/s k: 2.37 Vm: 12.1 m/s
NNW A: 13.6 m/s k: 2.37 Vm: 12.1 m/s			



Project:
Energy Island North Sea

Licensed user:
EMD International A/S
Niels Jernes Vej 10
DK-9220 Aalborg Ø
+45 6916 4850
Thomas Sørensen / ts@emd.dk
Calculated:
06/03/2024 09.34

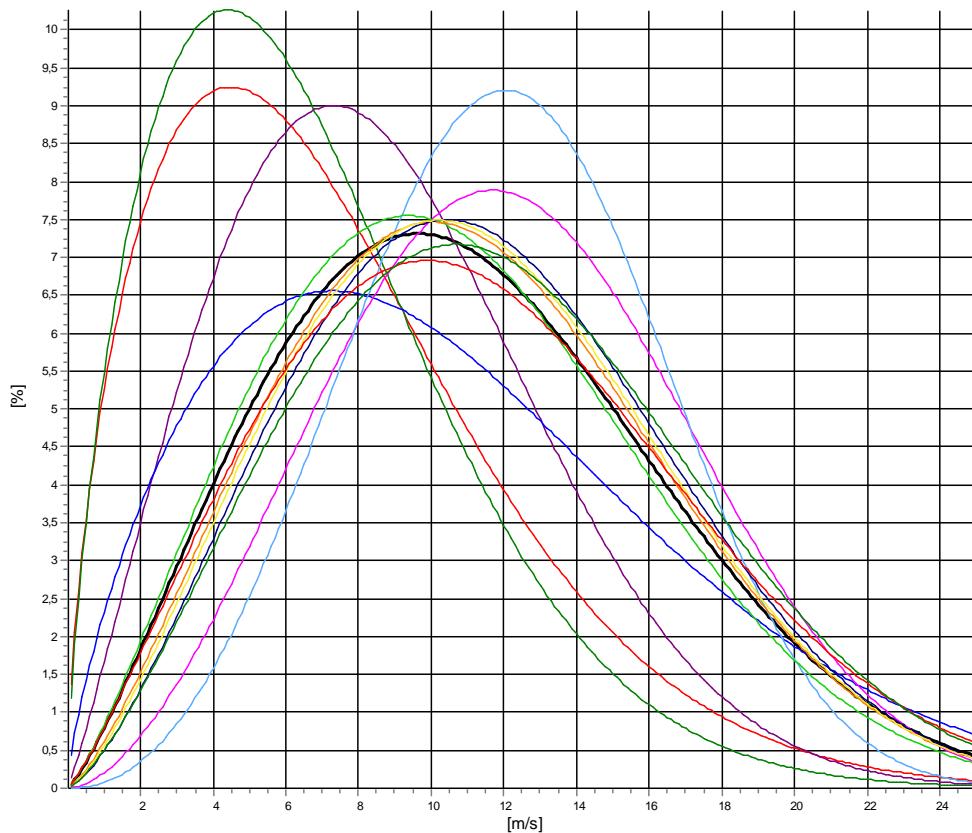
Meteo data report - Weibull data overview

Mast: Lot 2 complete 2y ; Complete period **Period:** Full period: 15/11/2021 - 15/11/2023 (24,0 months)

Height: 200,00m - Subst

Weibull data

Sector	A [m/s]	k	f	Mean wind speed [m/s]
0-N	8,24	1,604	3,69	7,39
1-NNE	7,56	1,675	2,76	6,75
2-ENE	9,89	2,113	3,72	8,76
3-E	12,01	1,728	5,18	10,71
4-ESE	13,80	2,740	7,59	12,28
5-SSE	13,53	3,206	6,37	12,12
6-S	12,24	2,227	7,34	10,84
7-SSW	12,79	2,328	10,63	11,33
8-WSW	13,07	2,404	14,03	11,58
9-W	12,89	2,361	13,89	11,43
10-WNW	13,09	2,182	13,57	11,59
11-NNW	13,48	2,365	11,23	11,95
Mean	12,61	2,221	100,00	11,17



All A: 12.6 m/s k: 2.22 Vm: 11.2 m/s	N A: 8.2 m/s k: 1.60 Vm: 7.4 m/s	NNE A: 7.6 m/s k: 1.68 Vm: 6.8 m/s	ENE A: 9.9 m/s k: 2.11 Vm: 8.8 m/s
E A: 12.0 m/s k: 1.73 Vm: 10.7 m/s	ESE A: 13.8 m/s k: 2.74 Vm: 12.3 m/s	SSE A: 13.5 m/s k: 3.21 Vm: 12.1 m/s	S A: 12.2 m/s k: 2.23 Vm: 10.8 m/s
SSW A: 12.8 m/s k: 2.33 Vm: 11.3 m/s	WSW A: 13.1 m/s k: 2.40 Vm: 11.6 m/s	W A: 12.9 m/s k: 2.36 Vm: 11.4 m/s	NNW A: 13.5 m/s k: 2.36 Vm: 11.9 m/s
NNW A: 13.5 m/s k: 2.36 Vm: 11.9 m/s			



Project:
Energy Island North Sea

Licensed user:
EMD International A/S
Niels Jernes Vej 10
DK-9220 Aalborg Ø
+45 6916 4850
Thomas Sørensen / ts@emd.dk
Calculated:
06/03/2024 09.34

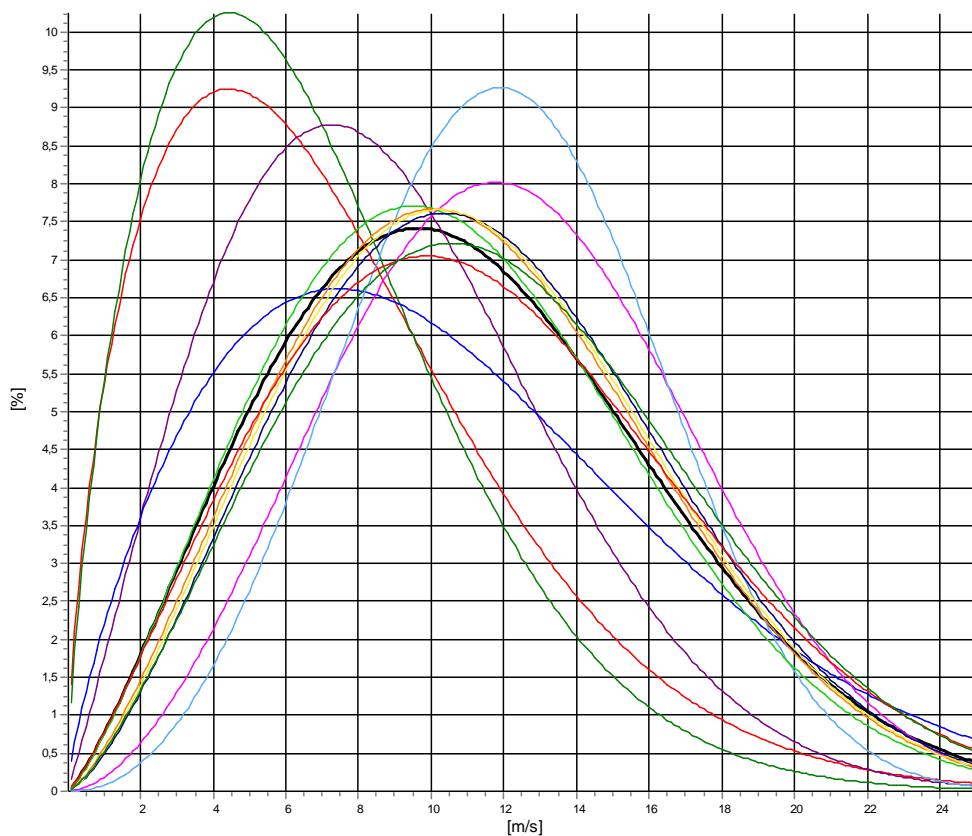
Meteo data report - Weibull data overview

Mast: Lot 2 complete 2y ; Complete period **Period:** Full period: 15/11/2021 - 15/11/2023 (24,0 months)

Height: **180,00m** - **Subst**

Weibull data

Sector	A [m/s]	k	f	Mean wind speed [m/s]
0-N	8,22	1,595	3,71	7,37
1-NNE	7,58	1,682	2,73	6,77
2-ENE	9,99	2,067	3,77	8,85
3-E	12,01	1,758	5,27	10,69
4-ESE	13,79	2,793	7,59	12,28
5-SSE	13,39	3,192	6,36	11,99
6-S	12,23	2,288	7,42	10,83
7-SSW	12,65	2,376	10,63	11,22
8-WSW	12,93	2,421	13,96	11,47
9-W	12,77	2,400	13,77	11,32
10-WNW	12,99	2,199	13,56	11,51
11-NNW	13,36	2,356	11,22	11,84
Mean	12,53	2,243	100,00	11,10





Project:
Energy Island North Sea

Licensed user:
EMD International A/S
Niels Jernes Vej 10
DK-9220 Aalborg Ø
+45 6916 4850
Thomas Sørensen / ts@emd.dk
Calculated:
06/03/2024 09.34

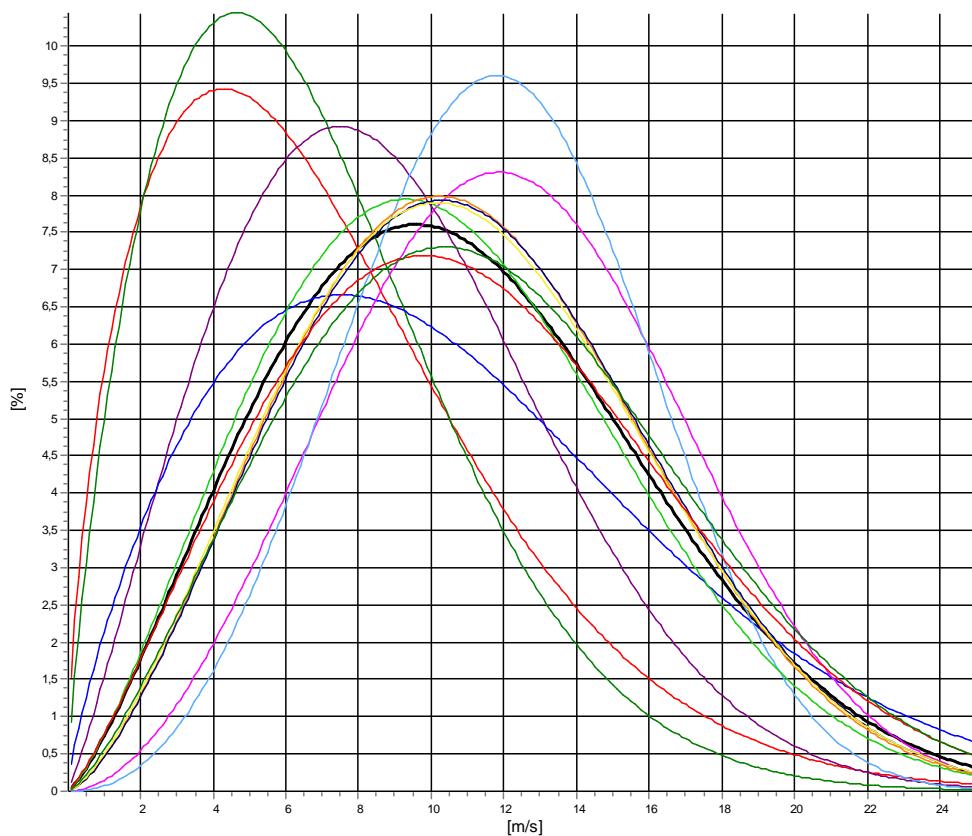
Meteo data report - Weibull data overview

Mast: Lot 2 complete 2y ; Complete period **Period:** Full period: 15/11/2021 - 15/11/2023 (24,0 months)

Height: **150,00m** - **Subst**

Weibull data

Sector	A [m/s]	k	f	Mean wind speed [m/s]
0-N	8,04	1,582	3,70	7,22
1-NNE	7,57	1,741	2,76	6,74
2-ENE	10,06	2,136	3,81	8,91
3-E	12,00	1,776	5,45	10,68
4-ESE	13,74	2,898	7,62	12,25
5-SSE	13,20	3,270	6,26	11,83
6-S	11,93	2,302	7,64	10,57
7-SSW	12,59	2,484	10,64	11,17
8-WSW	12,66	2,482	13,88	11,23
9-W	12,58	2,449	13,60	11,16
10-WNW	12,82	2,220	13,56	11,36
11-NNW	13,16	2,346	11,09	11,66
Mean	12,36	2,278	100,00	10,95



All A: 12.4 m/s k: 2.28 Vm: 11,0 m/s	N A: 8.0 m/s k: 1.58 Vm: 7.2 m/s	NNE A: 7.6 m/s k: 1.74 Vm: 6.7 m/s	ENE A: 10.1 m/s k: 2.14 Vm: 8.9 m/s
E A: 12.0 m/s k: 1.78 Vm: 10,7 m/s	ESE A: 13.7 m/s k: 2.90 Vm: 12.2 m/s	SSE A: 13.2 m/s k: 3.27 Vm: 11,8 m/s	S A: 11,9 m/s k: 2,30 Vm: 10,6 m/s
SSW A: 12,6 m/s k: 2,48 Vm: 11,2 m/s	WSW A: 12,7 m/s k: 2,48 Vm: 11,2 m/s	W A: 12,6 m/s k: 2,45 Vm: 11,2 m/s	WNW A: 12,8 m/s k: 2,22 Vm: 11,4 m/s
NNW A: 13,2 m/s k: 2,35 Vm: 11,7 m/s			



Project:
Energy Island North Sea

Licensed user:
EMD International A/S
Niels Jernes Vej 10
DK-9220 Aalborg Ø
+45 6916 4850
Thomas Sørensen / ts@emd.dk
Calculated:
06/03/2024 09.34

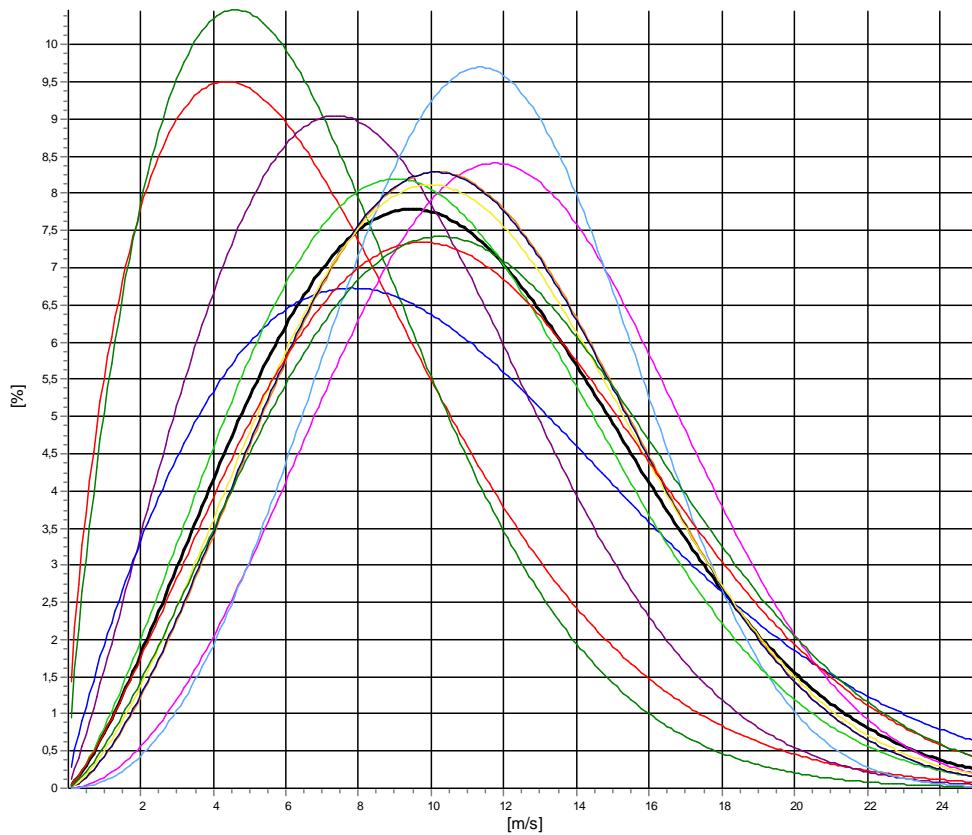
Meteo data report - Weibull data overview

Mast: Lot 2 complete 2y ; Complete period **Period:** Full period: 15/11/2021 - 15/11/2023 (24,0 months)

Height: **120,00m** - **Subst**

Weibull data

Sector	A [m/s]	k	f	Mean wind speed [m/s]
0-N	8,01	1,602	3,70	7,18
1-NNE	7,54	1,736	2,79	6,72
2-ENE	9,91	2,134	3,88	8,78
3-E	12,05	1,824	5,64	10,71
4-ESE	13,58	2,899	7,61	12,11
5-SSE	12,77	3,184	6,26	11,44
6-S	11,57	2,304	7,82	10,25
7-SSW	12,36	2,547	10,58	10,98
8-WSW	12,33	2,537	13,80	10,95
9-W	12,32	2,469	13,46	10,93
10-WNW	12,67	2,247	13,39	11,23
11-NNW	12,97	2,350	11,07	11,49
Mean	12,14	2,297	100,00	10,76





Project:
Energy Island North Sea

Licensed user:
EMD International A/S
Niels Jernes Vej 10
DK-9220 Aalborg Ø
+45 6916 4850
Thomas Sørensen / ts@emd.dk
Calculated:
06/03/2024 09.34

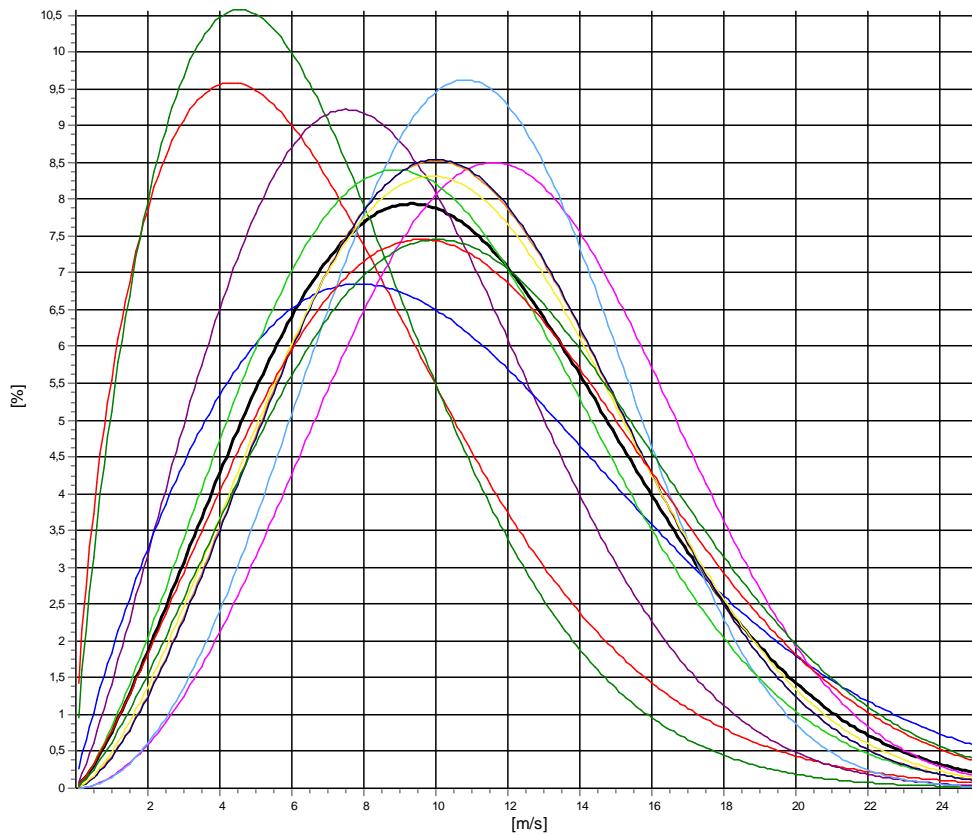
Meteo data report - Weibull data overview

Mast: Lot 2 complete 2y ; Complete period **Period:** Full period: 15/11/2021 - 15/11/2023 (24,0 months)

Height: **100,00m** - **Subst**

Weibull data

Sector	A [m/s]	k	f	Mean wind speed [m/s]
0-N	7,95	1,606	3,72	7,13
1-NNE	7,47	1,738	2,83	6,66
2-ENE	9,93	2,198	3,89	8,79
3-E	11,96	1,856	5,74	10,62
4-ESE	13,42	2,895	7,67	11,96
5-SSE	12,34	3,036	6,29	11,03
6-S	11,35	2,320	7,84	10,05
7-SSW	12,11	2,568	10,63	10,75
8-WSW	12,12	2,577	13,63	10,77
9-W	12,14	2,498	13,41	10,77
10-NNW	12,49	2,248	13,30	11,06
11-NNW	12,80	2,323	11,04	11,34
Mean	11,95	2,304	100,00	10,58



— All A: 11,9 m/s k: 2,30 Vm: 10,6 m/s — N A: 8,0 m/s k: 1,61 Vm: 7,1 m/s — NNE A: 7,5 m/s k: 1,74 Vm: 6,7 m/s — ENE A: 9,9 m/s k: 2,20 Vm: 8,8 m/s
— E A: 12,0 m/s k: 1,86 Vm: 10,6 m/s — ESE A: 13,4 m/s k: 2,90 Vm: 12,0 m/s — SSE A: 12,3 m/s k: 3,04 Vm: 11,0 m/s — SA: 11,3 m/s k: 2,32 Vm: 10,1 m/s
— SSW A: 12,1 m/s k: 2,57 Vm: 10,8 m/s — W A: 12,1 m/s k: 2,58 Vm: 10,8 m/s — WNW A: 12,1 m/s k: 2,25 Vm: 11,1 m/s



Project:
Energy Island North Sea

Licensed user:
EMD International A/S
Niels Jernes Vej 10
DK-9220 Aalborg Ø
+45 6916 4850
Thomas Sørensen / ts@emd.dk
Calculated:
06/03/2024 09.34

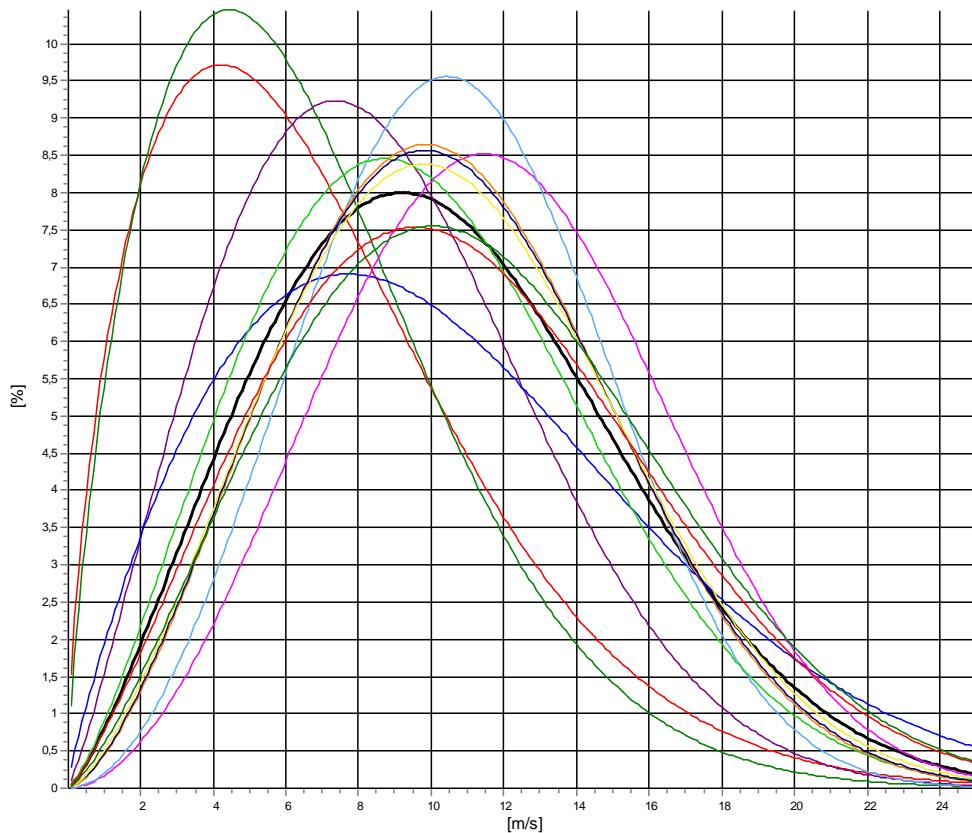
Meteo data report - Weibull data overview

Mast: Lot 2 complete 2y ; Complete period **Period:** Full period: 15/11/2021 - 15/11/2023 (24,0 months)

Height: **90,00m** - Subst

Weibull data

Sector	A [m/s]	k	f	Mean wind speed [m/s]
0-N	7,82	1,594	3,72	7,02
1-NNE	7,47	1,700	2,84	6,67
2-ENE	9,81	2,166	3,93	8,69
3-E	11,81	1,841	5,72	10,49
4-ESE	13,30	2,874	7,62	11,86
5-SSE	12,04	2,928	6,36	10,74
6-S	11,18	2,295	7,98	9,90
7-SSW	11,94	2,567	10,63	10,60
8-WSW	11,96	2,544	13,57	10,61
9-W	12,03	2,494	13,35	10,68
10-WNW	12,39	2,258	13,24	10,98
11-NNW	12,73	2,346	11,03	11,28
Mean	11,81	2,292	100,00	10,46



All A: 11,8 m/s k: 2,29 Vm: 10,5 m/s	N A: 7,8 m/s k: 1,59 Vm: 7,0 m/s	NNE A: 7,5 m/s k: 1,70 Vm: 6,7 m/s	ENE A: 9,8 m/s k: 2,17 Vm: 8,7 m/s
E A: 11,8 m/s k: 1,84 Vm: 10,5 m/s	ESE A: 13,3 m/s k: 2,87 Vm: 11,9 m/s	SSE A: 12,0 m/s k: 2,93 Vm: 10,7 m/s	S A: 11,2 m/s k: 2,30 Vm: 9,9 m/s
SSW A: 11,9 m/s k: 2,57 Vm: 10,6 m/s	WSW A: 12,0 m/s k: 2,54 Vm: 10,6 m/s	W A: 12,0 m/s k: 2,49 Vm: 10,7 m/s	WNW A: 12,4 m/s k: 2,26 Vm: 11,0 m/s
NNW A: 12,7 m/s k: 2,35 Vm: 11,3 m/s			



Project:
Energy Island North Sea

Licensed user:
EMD International A/S
Niels Jernes Vej 10
DK-9220 Aalborg Ø
+45 6916 4850
Thomas Sørensen / ts@emd.dk
Calculated:
06/03/2024 09.34

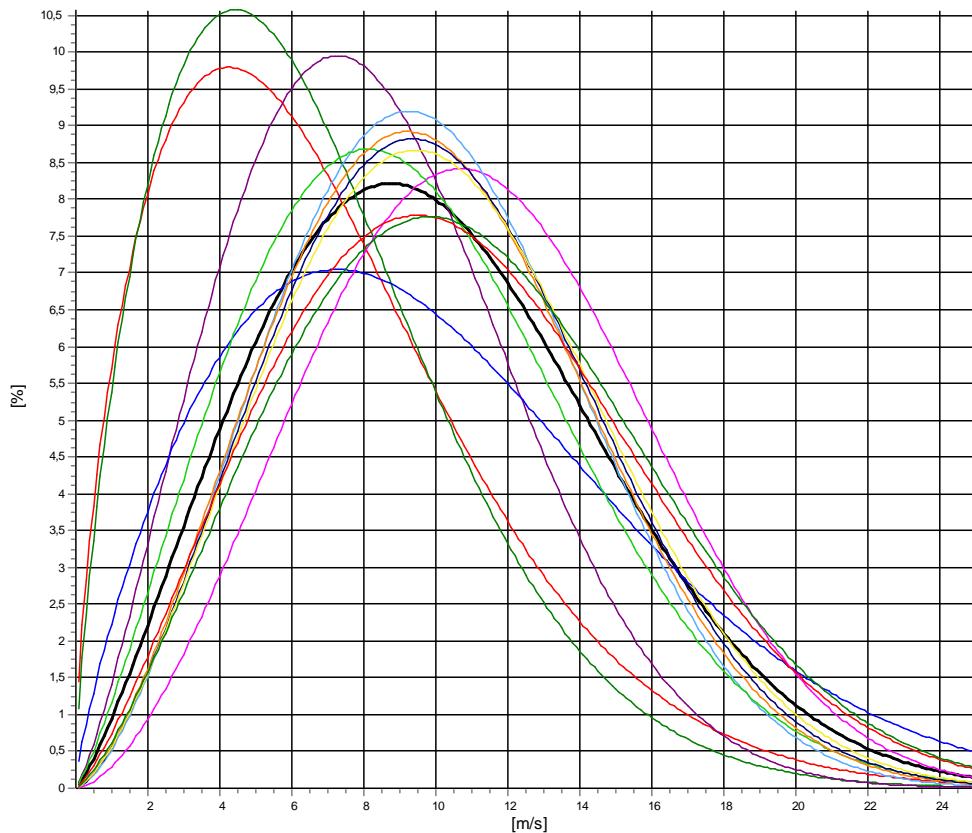
Meteo data report - Weibull data overview

Mast: Lot 2 complete 2y ; Complete period **Period:** Full period: 15/11/2021 - 15/11/2023 (24,0 months)

Height: **60,00m** - Subst

Weibull data

Sector	A [m/s]	k	f	Mean wind speed [m/s]
0-N	7,79	1,609	3,76	6,98
1-NNE	7,41	1,710	2,90	6,61
2-ENE	9,40	2,265	4,05	8,33
3-E	11,42	1,799	5,77	10,15
4-ESE	12,71	2,685	7,78	11,30
5-SSE	11,22	2,568	6,30	9,96
6-S	10,64	2,224	7,99	9,42
7-SSW	11,32	2,500	10,80	10,04
8-WSW	11,47	2,506	13,34	10,18
9-W	11,61	2,489	13,34	10,30
10-WNW	12,16	2,299	13,09	10,78
11-NNW	12,43	2,359	10,90	11,02
Mean	11,36	2,256	100,00	10,06



All A: 11,4 m/s k: 2,26 Vm: 10,1 m/s	N A: 7,8 m/s k: 1,61 Vm: 7,0 m/s	NNE A: 7,4 m/s k: 1,71 Vm: 6,6 m/s	ENE A: 9,4 m/s k: 2,26 Vm: 8,3 m/s
E A: 11,4 m/s k: 1,80 Vm: 10,2 m/s	ESE A: 12,7 m/s k: 2,69 Vm: 11,3 m/s	SSE A: 11,2 m/s k: 2,57 Vm: 10,0 m/s	S A: 10,6 m/s k: 2,22 Vm: 9,4 m/s
SSW A: 11,3 m/s k: 2,50 Vm: 10,0 m/s	WSW A: 11,5 m/s k: 2,51 Vm: 10,2 m/s	W A: 11,6 m/s k: 2,49 Vm: 10,3 m/s	WNW A: 12,2 m/s k: 2,30 Vm: 10,8 m/s
NNW A: 12,4 m/s k: 2,36 Vm: 11,0 m/s			



Project:
Energy Island North Sea

Licensed user:
EMD International A/S
Niels Jernes Vej 10
DK-9220 Aalborg Ø
+45 6916 4850
Thomas Sørensen / ts@emd.dk
Calculated:
06/03/2024 09.34

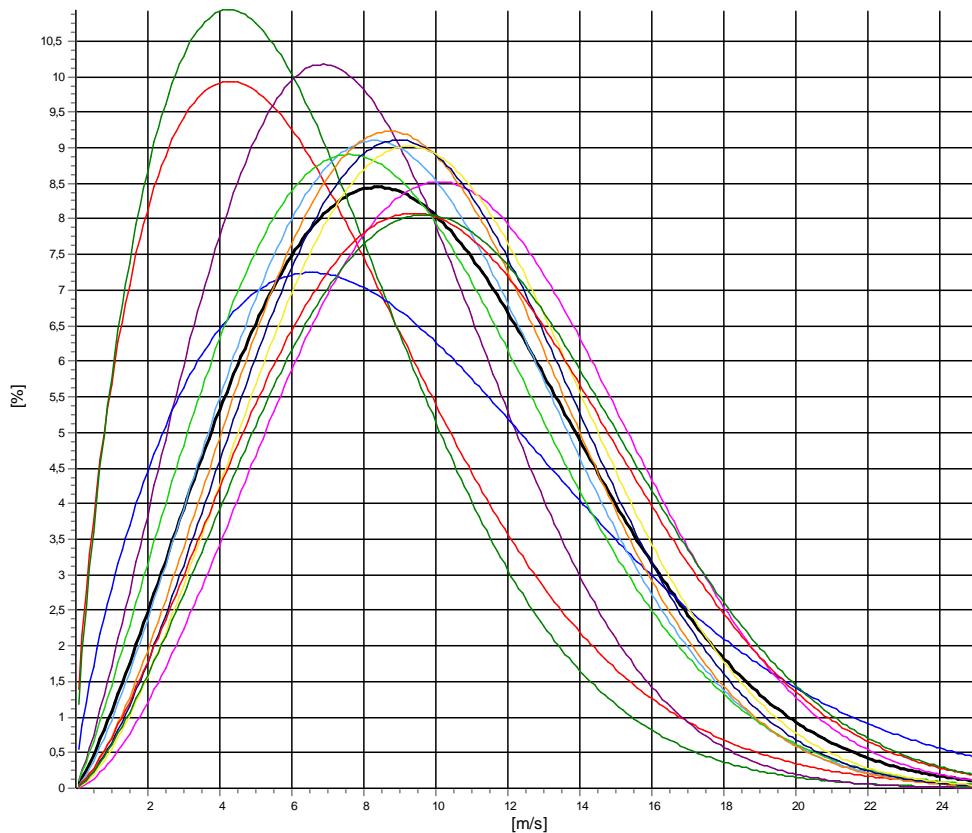
Meteo data report - Weibull data overview

Mast: Lot 2 complete 2y ; Complete period **Period:** Full period: 15/11/2021 - 15/11/2023 (24,0 months)

Height: **40,00m** - Subst

Weibull data

Sector	A [m/s]	k	f	Mean wind speed [m/s]
0-N	7,71	1,625	3,75	6,90
1-NNE	7,15	1,705	2,96	6,38
2-ENE	9,03	2,207	4,10	8,00
3-E	10,85	1,720	5,84	9,68
4-ESE	12,19	2,589	7,93	10,82
5-SSE	10,53	2,338	6,21	9,33
6-S	10,15	2,160	7,97	8,99
7-SSW	10,79	2,457	10,87	9,57
8-WSW	11,04	2,485	13,18	9,79
9-W	11,30	2,529	13,34	10,03
10-WNW	11,89	2,345	13,02	10,54
11>NNW	12,12	2,397	10,83	10,75
Mean	10,95	2,230	100,00	9,70



All A: 11,0 m/s k: 2,23 Vm: 9,7 m/s	N A: 7,7 m/s k: 1,62 Vm: 6,9 m/s	NNE A: 7,2 m/s k: 1,71 Vm: 6,4 m/s	ENE A: 9,0 m/s k: 2,21 Vm: 8,0 m/s
E A: 10,9 m/s k: 1,72 Vm: 9,7 m/s	ESE A: 12,2 m/s k: 2,59 Vm: 10,8 m/s	SSE A: 10,5 m/s k: 2,34 Vm: 9,3 m/s	S A: 10,2 m/s k: 2,16 Vm: 9,0 m/s
SSW A: 10,8 m/s k: 2,46 Vm: 9,6 m/s	WSW A: 11,0 m/s k: 2,49 Vm: 9,8 m/s	W A: 11,3 m/s k: 2,53 Vm: 10,0 m/s	WNW A: 11,9 m/s k: 2,35 Vm: 10,5 m/s
NNW A: 12,1 m/s k: 2,40 Vm: 10,7 m/s			



Project:
Energy Island North Sea

Licensed user:
EMD International A/S
Niels Jernes Vej 10
DK-9220 Aalborg Ø
+45 6916 4850
Thomas Sørensen / ts@emd.dk
Calculated:
06/03/2024 09.34

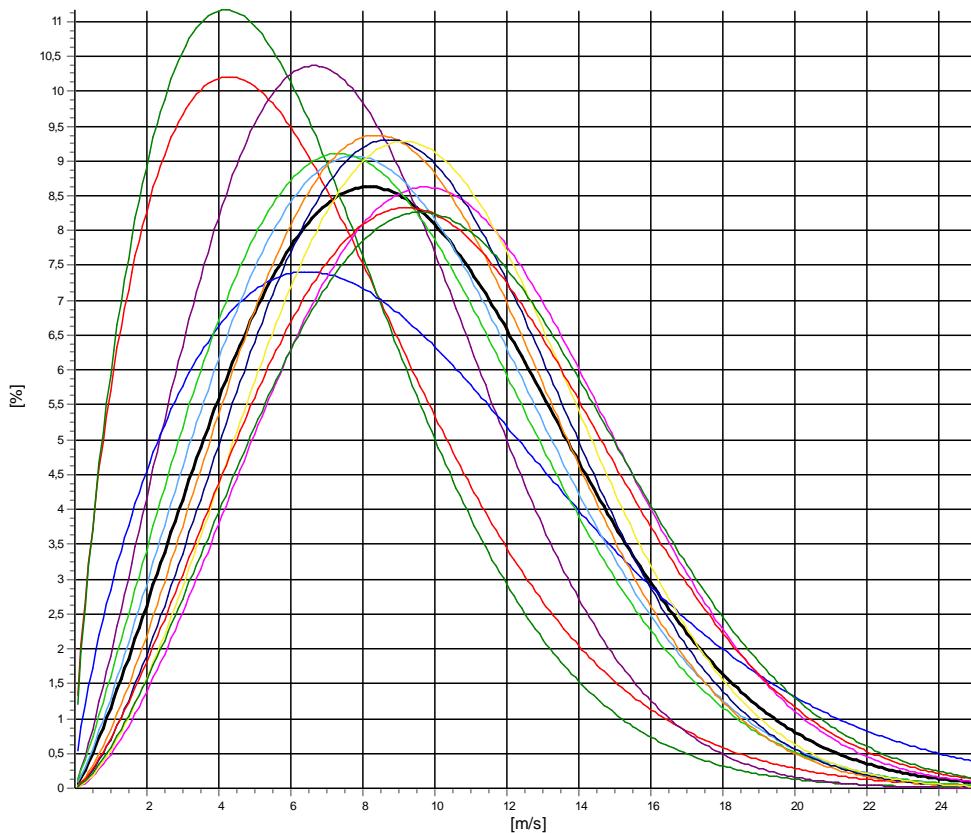
Meteo data report - Weibull data overview

Mast: Lot 2 complete 2y ; Complete period **Period:** Full period: 15/11/2021 - 15/11/2023 (24,0 months)

Height: **30,00m** - Subst

Weibull data

Sector	A [m/s]	k	f	Mean wind speed [m/s]
0-N	7,55	1,648	3,74	6,75
1-NNE	7,01	1,708	2,93	6,26
2-ENE	8,79	2,182	4,13	7,78
3-E	10,64	1,731	5,93	9,48
4-ESE	11,86	2,538	7,89	10,52
5-SSE	10,18	2,221	6,30	9,01
6-S	9,86	2,139	7,91	8,73
7-SSW	10,48	2,412	10,87	9,29
8-WSW	10,76	2,472	13,22	9,54
9-W	11,10	2,564	13,24	9,86
10-WNW	11,63	2,369	12,95	10,31
11>NNW	11,96	2,431	10,88	10,60
Mean	10,70	2,222	100,00	9,47



All A: 10,7 m/s k: 2,22 Vm: 9,5 m/s	N A: 7,5 m/s k: 1,65 Vm: 6,7 m/s	NNE A: 7,0 m/s k: 1,71 Vm: 6,3 m/s	ENE A: 8,8 m/s k: 2,18 Vm: 7,8 m/s
E A: 10,6 m/s k: 1,73 Vm: 9,5 m/s	ESE A: 11,9 m/s k: 2,54 Vm: 10,5 m/s	SSE A: 10,2 m/s k: 2,22 Vm: 9,0 m/s	S A: 9,9 m/s k: 2,14 Vm: 8,7 m/s
SSW A: 10,5 m/s k: 2,41 Vm: 9,3 m/s	WSW A: 10,8 m/s k: 2,47 Vm: 9,5 m/s	W A: 11,1 m/s k: 2,56 Vm: 9,9 m/s	WNW A: 11,6 m/s k: 2,37 Vm: 10,3 m/s
NNW A: 12,0 m/s k: 2,43 Vm: 10,6 m/s			



Appendix C. Long-term Corrected Dataset: Position 1 (Lot 1), Position 2 (Lot 2), Position 3



Project:

Energy Island North Sea

Licensed user:

EMD International A/S

Niels Jernes Vej 10

DK-9220 Aalborg Ø

+45 6916 4850

Thomas Sørensen / ts@emd.dk

Calculated:

06/03/2024 10.33

Meteo data report - Frequency distribution (TAB file data)**Mast:** Lot 1 LT 2y ; 20 year period **Period:** Full period: 01/01/2003 - 01/01/2023 (240,0 months)**Frequency distribution (TAB file data)**

270,00m - MCP LT - 2y 270m MCP session (1) - [Matrix]															
Bin	Start	End	Sum	0-N	1-NNE	2-ENE	3-E	4-ESE	5-SSE	6-S	7-SSW	8-WSW	9-W	10-WNW	11>NNW
Mean			11,33	8,84	7,79	9,61	10,52	11,05	11,30	11,31	12,07	12,16	11,63	11,60	12,17
0	0,49	194	15	26	24	26	7	20	8	16	1	12	19	20	
1	0,50	1,49	1551	134	116	179	154	141	118	97	99	104	118	135	156
2	1,50	2,49	3349	287	322	325	266	265	212	280	328	342	244	221	257
3	2,50	3,49	5102	386	382	402	319	485	338	376	470	490	445	532	477
4	3,50	4,49	6967	544	477	416	440	644	477	485	455	757	890	755	627
5	4,50	5,49	8337	588	488	440	573	580	472	598	697	1034	1141	1006	720
6	5,50	6,49	10102	668	497	467	622	646	580	815	1135	1282	1299	1231	860
7	6,50	7,49	11446	629	575	536	840	725	701	1107	1299	1255	1309	1445	1025
8	7,50	8,49	11902	565	510	569	717	716	765	968	1297	1473	1489	1676	1157
9	8,50	9,49	11583	405	315	490	790	824	698	1002	1287	1371	1437	1709	1255
10	9,50	10,49	12477	418	205	673	914	880	688	910	1318	1560	1474	1913	1524
11	10,50	11,49	12318	403	218	695	945	835	777	731	1046	1499	1554	1990	1625
12	11,50	12,49	11863	320	200	467	974	1001	862	776	1137	1246	1408	1827	1645
13	12,50	13,49	10888	363	251	480	714	680	798	763	1091	1408	1209	1652	1479
14	13,50	14,49	9679	225	202	491	662	812	622	700	943	1272	1089	1348	1313
15	14,50	15,49	8890	267	176	320	278	779	581	615	930	970	1223	1335	1416
16	15,50	16,49	7773	197	83	241	329	725	573	550	1006	928	1000	961	1180
17	16,50	17,49	6654	178	80	209	335	480	440	523	840	941	752	883	993
18	17,50	18,49	5663	113	41	86	395	410	485	365	668	842	806	718	734
19	18,50	19,49	4449	90	32	129	234	364	313	402	559	664	540	496	626
20	19,50	20,49	3422	63	22	68	117	222	196	283	464	639	403	424	521
21	20,50	21,49	2822	40	7	71	155	149	156	244	364	437	374	430	395
22	21,50	22,49	2324	26	9	40	100	90	176	234	328	379	335	296	311
23	22,50	23,49	1672	26	6	32	55	57	64	179	255	268	237	248	245
24	23,50	24,49	1351	15	7	11	24	86	48	84	264	260	187	209	156
25	24,50	25,49	842	11	0	7	21	42	45	92	123	177	127	104	93
26	25,50	26,49	537	3	1	2	9	12	18	32	95	169	81	61	54
27	26,50	27,49	437	2	0	0	8	6	8	28	109	131	60	46	39
28	27,50	28,49	220	0	0	0	3	2	4	13	45	56	31	35	31
29	28,50	29,49	173	0	0	0	4	0	2	6	32	58	35	22	14
30	29,50	30,49	101	0	0	0	0	0	0	7	18	32	23	14	7
31	30,50	31,49	79	0	0	0	2	0	0	3	8	26	17	19	4
32	31,50	32,49	70	0	0	0	2	0	0	0	12	21	12	17	6
33	32,50	33,49	31	0	0	0	0	0	0	0	2	13	6	4	6
34	33,50	34,49	25	0	0	0	0	0	0	1	1	8	7	5	3
35	34,50	35,49	8	0	0	0	0	0	0	0	3	2	2	1	0
36	35,50	36,49	10	0	0	0	0	0	0	0	2	3	4	1	0
37	36,50	37,49	2	0	0	0	0	0	0	0	1	0	1	0	0
38	37,50	38,49	4	0	0	0	0	0	0	0	0	1	3	0	0
39	38,50	39,49	1	0	0	0	0	0	0	0	0	0	1	0	0
40	39,50	40,49	0	0	0	0	0	0	0	0	0	0	0	0	0
41	40,50		2	0	0	0	0	0	0	0	0	1	1	0	0



Project:

Energy Island North Sea

Licensed user:

EMD International A/S

Niels Jernes Vej 10

DK-9220 Aalborg Ø

+45 6916 4850

Thomas Sørensen / ts@emd.dk

Calculated:

06/03/2024 10.33

Meteo data report - Frequency distribution (TAB file data)**Mast:** Lot 1 LT 2y ; 20 year period **Period:** Full period: 01/01/2003 - 01/01/2023 (240,0 months)**Frequency distribution (TAB file data)**

240,00m - MCP LT - 2y 240m MCP session (1) - [Matrix]

Bin	Start	End	Sum	0-N	1-NNE	2-ENE	3-E	4-ESE	5-SSE	6-S	7-SSW	8-WSW	9-W	10-WNW	11>NNW	12,12
0	0,49	194	24	15	25	30	9	16	4	11	8	16	15	21		
1	0,50	1,49	1540	149	126	178	182	130	101	90	70	130	129	134	121	
2	1,50	2,49	3592	287	327	379	231	274	233	297	367	365	261	301	270	
3	2,50	3,49	5044	389	401	396	331	536	295	366	449	507	440	493	441	
4	3,50	4,49	6925	558	457	392	424	590	490	413	475	779	905	826	616	
5	4,50	5,49	8382	618	445	472	531	589	479	617	764	1012	1138	945	772	
6	5,50	6,49	10224	675	574	532	644	649	620	766	1093	1208	1305	1268	890	
7	6,50	7,49	11396	602	520	528	788	760	728	1102	1280	1343	1320	1444	981	
8	7,50	8,49	11984	562	512	562	739	729	800	1022	1238	1512	1447	1680	1181	
9	8,50	9,49	11700	462	293	539	863	852	652	1043	1236	1372	1388	1778	1222	
10	9,50	10,49	12753	359	239	625	1007	892	760	875	1370	1520	1584	1997	1525	
11	10,50	11,49	12307	349	207	720	902	871	784	749	1114	1431	1550	1997	1633	
12	11,50	12,49	11905	386	221	494	907	932	794	842	1206	1302	1337	1797	1691	
13	12,50	13,49	11170	340	241	548	785	765	917	780	1094	1354	1284	1601	1461	
14	13,50	14,49	9953	290	216	454	630	787	572	750	959	1295	1155	1493	1352	
15	14,50	15,49	8971	212	139	318	403	872	596	655	1071	927	1254	1288	1236	
16	15,50	16,49	7647	225	105	201	317	608	512	531	1001	974	963	1007	1203	
17	16,50	17,49	6624	145	62	187	373	508	528	484	710	923	777	845	1082	
18	17,50	18,49	5503	104	42	158	386	480	406	411	609	823	742	616	726	
19	18,50	19,49	4266	68	40	88	183	302	302	388	608	646	509	525	607	
20	19,50	20,49	3488	58	15	56	89	198	212	284	497	585	470	501	523	
21	20,50	21,49	2731	34	11	71	167	144	182	264	324	455	357	388	334	
22	21,50	22,49	2191	26	5	37	131	98	166	228	297	356	270	255	322	
23	22,50	23,49	1412	14	1	27	34	54	74	124	282	278	146	175	203	
24	23,50	24,49	1102	17	6	19	30	63	40	89	151	210	193	160	124	
25	24,50	25,49	805	6	2	5	12	50	30	76	127	165	128	109	95	
26	25,50	26,49	551	3	1	2	13	12	20	39	111	153	86	54	57	
27	26,50	27,49	356	2	1	0	9	2	10	29	82	96	49	40	36	
28	27,50	28,49	181	1	0	0	2	0	0	8	48	45	29	23	25	
29	28,50	29,49	156	0	1	0	1	0	1	8	34	43	33	22	13	
30	29,50	30,49	89	1	0	0	0	0	0	3	14	35	14	14	8	
31	30,50	31,49	63	0	0	0	0	0	0	1	11	20	11	15	5	
32	31,50	32,49	35	0	0	0	0	0	0	0	2	10	11	9	3	
33	32,50	33,49	34	0	0	0	0	0	0	1	3	12	9	7	2	
34	33,50	34,49	13	0	0	0	0	0	0	0	0	2	6	1	4	
35	34,50	35,49	18	0	0	0	0	0	0	0	4	5	5	2	2	
36	35,50	36,49	8	0	0	0	0	0	0	0	2	3	1	1	1	
37	36,50	37,49	1	0	0	0	0	0	0	0	0	0	1	0	0	
38	37,50	38,49	1	0	0	0	0	0	0	0	0	1	0	0	0	
39	38,50	39,49	1	0	0	0	0	0	0	0	0	0	1	0	0	
40	39,50	40,49	0	0	0	0	0	0	0	0	0	0	0	0	0	
41	40,50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	



Project:

Energy Island North Sea

Licensed user:

EMD International A/S

Niels Jernes Vej 10

DK-9220 Aalborg Ø

+45 6916 4850

Thomas Sørensen / ts@emd.dk

Calculated:

06/03/2024 10.33

Meteo data report - Frequency distribution (TAB file data)**Mast:** Lot 1 LT 2y ; 20 year period **Period:** Full period: 01/01/2003 - 01/01/2023 (240,0 months)**Frequency distribution (TAB file data)**

200,00m - MCP LT - 2y 200m MCP session (1) - [Matrix]															
Bin	Start	End	Sum	0-N	1-NNE	2-ENE	3-E	4-ESE	5-SSE	6-S	7-SSW	8-WSW	9-W	10-WNW	11>NNW
Mean			11,10	8,67	7,77	9,45	10,49	10,93	11,22	11,13	11,85	11,77	11,27	11,33	11,92
0	0,49	196	17	24	29	24	10	11	10	19	7	17	15	13	
1	0,50	1,49	1529	140	125	185	149	82	126	109	88	121	145	137	122
2	1,50	2,49	3609	253	342	423	280	287	236	297	321	349	286	261	274
3	2,50	3,49	5115	432	440	352	335	480	301	362	477	493	472	498	473
4	3,50	4,49	7151	548	449	422	413	609	479	414	489	808	973	858	689
5	4,50	5,49	8366	596	438	497	573	596	472	563	697	1022	1201	975	736
6	5,50	6,49	10682	755	547	526	705	673	626	882	1132	1293	1369	1281	893
7	6,50	7,49	11362	573	512	524	796	726	662	1102	1291	1336	1297	1493	1050
8	7,50	8,49	11836	581	496	572	737	772	817	1075	1209	1459	1388	1567	1163
9	8,50	9,49	11836	373	309	458	886	899	695	1009	1194	1397	1447	1932	1237
10	9,50	10,49	12986	423	272	743	1022	866	714	953	1315	1539	1555	1921	1663
11	10,50	11,49	12606	362	267	693	1020	992	798	821	1154	1393	1483	1955	1668
12	11,50	12,49	12191	320	203	493	1033	810	837	834	1214	1444	1411	1886	1706
13	12,50	13,49	11288	324	241	545	760	843	900	784	1136	1500	1240	1597	1418
14	13,50	14,49	9979	236	220	501	591	796	639	809	1075	1157	1202	1457	1296
15	14,50	15,49	9300	241	166	284	461	862	628	680	1095	1043	1206	1295	1339
16	15,50	16,49	7505	241	98	235	353	601	530	429	900	1022	946	963	1187
17	16,50	17,49	6755	145	71	198	326	500	552	484	756	978	902	930	913
18	17,50	18,49	5093	88	40	136	340	391	417	454	676	733	636	570	612
19	18,50	19,49	4302	71	32	81	183	353	242	389	596	670	455	573	657
20	19,50	20,49	3240	74	16	86	146	196	208	292	429	479	415	417	482
21	20,50	21,49	2606	40	8	56	197	117	211	270	378	372	306	331	320
22	21,50	22,49	1739	21	7	31	75	88	102	149	243	323	225	209	266
23	22,50	23,49	1318	15	2	25	33	58	73	86	194	265	177	185	205
24	23,50	24,49	943	8	3	9	32	54	35	100	109	170	174	131	118
25	24,50	25,49	671	10	1	1	21	24	30	43	134	157	86	87	77
26	25,50	26,49	442	5	0	3	13	8	10	34	108	101	57	50	53
27	26,50	27,49	207	2	0	0	1	2	5	21	54	52	29	21	20
28	27,50	28,49	165	0	1	0	0	0	2	6	39	48	35	18	16
29	28,50	29,49	116	0	0	0	4	0	1	6	16	40	17	21	11
30	29,50	30,49	70	0	1	0	0	0	0	1	16	19	10	17	6
31	30,50	31,49	41	0	0	0	0	0	0	1	3	13	12	9	3
32	31,50	32,49	31	0	0	0	1	0	0	0	3	9	10	6	2
33	32,50	33,49	19	0	0	0	0	0	0	0	0	4	7	4	4
34	33,50	34,49	15	0	0	0	0	0	0	0	4	3	4	2	2
35	34,50	35,49	7	0	0	0	0	0	0	0	0	2	1	3	1
36	35,50	36,49	2	0	0	0	0	0	0	0	0	1	1	0	0
37	36,50	37,49	0	0	0	0	0	0	0	0	0	0	0	0	0
38	37,50	38,49	1	0	0	0	0	0	0	0	0	0	1	0	0
39	38,50	39,49	0	0	0	0	0	0	0	0	0	0	0	0	0
40	39,50	40,49	0	0	0	0	0	0	0	0	0	0	0	0	0
41	40,50	0	0	0	0	0	0	0	0	0	0	0	0	0	0



Project:

Energy Island North Sea

Licensed user:

EMD International A/S

Niels Jernes Vej 10

DK-9220 Aalborg Ø

+45 6916 4850

Thomas Sørensen / ts@emd.dk

Calculated:

06/03/2024 10.33

Meteo data report - Frequency distribution (TAB file data)**Mast:** Lot 1 LT 2y ; 20 year period **Period:** Full period: 01/01/2003 - 01/01/2023 (240,0 months)**Frequency distribution (TAB file data)**

180,00m - MCP LT - 2y 180m MCP session (1) - [Matrix]															
Bin	Start	End	Sum	0-N	1-NNE	2-ENE	3-E	4-ESE	5-SSE	6-S	7-SSW	8-WSW	9-W	10-WNW	11>NNW
Mean			11,00	8,67	7,72	9,45	10,46	10,88	11,16	11,04	11,70	11,63	11,17	11,20	11,82
0	0,49	201	17	27	21	29	13	6	11	8	7	22	24	16	
1	0,50	1,49	1527	138	133	174	136	94	120	98	115	119	162	136	102
2	1,50	2,49	3592	256	343	407	285	269	213	336	320	345	267	251	300
3	2,50	3,49	5194	429	420	395	317	475	281	410	439	526	482	551	469
4	3,50	4,49	7261	536	482	430	438	646	494	419	482	780	987	874	693
5	4,50	5,49	8515	623	457	494	559	576	517	588	715	1044	1209	1015	718
6	5,50	6,49	10852	787	571	511	745	617	676	877	1210	1282	1300	1312	964
7	6,50	7,49	11358	564	478	501	779	710	669	1044	1298	1399	1306	1547	1063
8	7,50	8,49	11713	573	494	571	723	812	812	1084	1150	1397	1360	1564	1173
9	8,50	9,49	12072	406	307	510	1006	985	684	1001	1261	1378	1424	1853	1257
10	9,50	10,49	13214	402	305	737	1017	896	699	964	1325	1558	1649	2009	1653
11	10,50	11,49	12590	363	223	625	1012	948	791	873	1214	1420	1552	2002	1567
12	11,50	12,49	12427	353	220	548	968	873	895	889	1168	1542	1360	1940	1671
13	12,50	13,49	11640	305	269	522	813	745	901	826	1258	1466	1270	1700	1565
14	13,50	14,49	10050	276	161	479	672	919	638	795	1156	1130	1235	1387	1202
15	14,50	15,49	9088	290	168	332	477	859	583	694	1001	987	1143	1205	1349
16	15,50	16,49	7829	177	89	226	437	610	574	509	886	1141	1006	1065	1109
17	16,50	17,49	6203	176	75	186	289	484	503	459	701	888	835	800	807
18	17,50	18,49	5257	62	37	125	339	382	375	500	743	751	597	638	708
19	18,50	19,49	3839	84	43	92	153	280	280	356	499	577	473	461	541
20	19,50	20,49	3289	71	15	79	139	183	237	276	441	507	394	436	511
21	20,50	21,49	2293	36	11	64	161	126	157	238	332	300	223	281	364
22	21,50	22,49	1714	17	6	26	53	93	98	111	231	371	265	211	232
23	22,50	23,49	1288	15	3	29	45	64	78	123	135	237	197	188	174
24	23,50	24,49	777	13	4	9	31	49	36	83	88	147	108	116	93
25	24,50	25,49	590	6	1	3	20	14	25	30	152	124	65	66	84
26	25,50	26,49	374	5	0	0	12	6	11	33	88	76	51	44	48
27	26,50	27,49	184	2	0	0	1	0	5	11	54	43	31	16	21
28	27,50	28,49	150	0	1	0	4	0	1	8	31	46	31	19	9
29	28,50	29,49	88	0	0	0	2	0	1	2	10	24	16	20	13
30	29,50	30,49	54	0	1	0	0	0	0	1	13	14	8	12	5
31	30,50	31,49	37	0	0	0	1	0	0	0	4	12	12	4	4
32	31,50	32,49	23	0	0	0	0	0	0	0	1	4	9	6	3
33	32,50	33,49	19	0	0	0	0	0	0	0	1	6	5	3	4
34	33,50	34,49	11	0	0	0	0	0	0	0	3	2	4	1	1
35	34,50	35,49	4	0	0	0	0	0	0	0	0	0	0	3	1
36	35,50	36,49	2	0	0	0	0	0	0	0	0	1	1	0	0
37	36,50	37,49	0	0	0	0	0	0	0	0	0	0	0	0	0
38	37,50	38,49	1	0	0	0	0	0	0	0	0	0	1	0	0
39	38,50	39,49	0	0	0	0	0	0	0	0	0	0	0	0	0
40	39,50	40,49	0	0	0	0	0	0	0	0	0	0	0	0	0
41	40,50	0	0	0	0	0	0	0	0	0	0	0	0	0	0



Project:

Energy Island North Sea

Licensed user:

EMD International A/S

Niels Jernes Vej 10

DK-9220 Aalborg Ø

+45 6916 4850

Thomas Sørensen / ts@emd.dk

Calculated:

06/03/2024 10.33

Meteo data report - Frequency distribution (TAB file data)**Mast:** Lot 1 LT 2y ; 20 year period **Period:** Full period: 01/01/2003 - 01/01/2023 (240,0 months)**Frequency distribution (TAB file data)**

150,00m - MCP LT - 2y 150m MCP session (1) - [Matrix]															
Bin	Start	End	Sum	0-N	1-NNE	2-ENE	3-E	4-ESE	5-SSE	6-S	7-SSW	8-WSW	9-W	10-WNW	11>NNW
Mean	10,85	8,57	7,79	9,47	10,43	10,72	11,05	10,83	11,57	11,41	11,00	11,01	11,63		
0	0,49	184	11	24	36	13	3	7	14	16	19	12	14	15	
1	0,50	1,49	1719	151	142	234	128	124	128	139	90	143	137	155	
2	1,50	2,49	3336	218	295	398	279	261	243	297	307	262	223	287	
3	2,50	3,49	5331	389	401	319	424	541	277	386	427	548	506	614	
4	3,50	4,49	7249	483	453	392	453	677	494	442	514	845	950	837	
5	4,50	5,49	8911	722	495	527	547	541	544	582	800	990	1237	1104	
6	5,50	6,49	10906	781	562	513	735	633	761	887	1164	1248	1369	1243	
7	6,50	7,49	11429	565	416	570	762	711	743	1074	1269	1384	1237	1595	
8	7,50	8,49	11609	536	538	550	723	904	653	1028	1232	1445	1380	1593	
9	8,50	9,49	12377	447	338	516	980	917	664	1086	1207	1455	1483	1957	
10	9,50	10,49	13254	441	244	778	1089	972	621	901	1252	1649	1567	1993	
11	10,50	11,49	13190	331	222	635	1130	886	871	889	1331	1637	1515	2026	
12	11,50	12,49	12939	336	303	617	939	882	958	941	1307	1579	1461	1908	
13	12,50	13,49	11954	330	260	508	895	869	900	911	1366	1500	1272	1658	
14	13,50	14,49	9713	235	187	389	593	749	630	817	1069	1093	1296	1421	
15	14,50	15,49	9362	252	115	388	547	889	679	685	1062	1229	1119	1132	
16	15,50	16,49	7784	208	77	289	457	601	584	514	891	1057	921	988	
17	16,50	17,49	6105	132	86	185	291	499	499	516	769	825	762	776	
18	17,50	18,49	4812	95	51	156	276	379	334	405	663	693	543	604	
19	18,50	19,49	3983	54	24	88	247	244	223	349	541	618	488	509	
20	19,50	20,49	2816	50	23	65	146	169	257	250	315	357	307	400	
21	20,50	21,49	2077	30	8	55	136	107	162	190	315	320	213	241	
22	21,50	22,49	1486	11	6	31	43	65	103	93	211	334	223	182	
23	22,50	23,49	930	17	3	15	31	61	39	66	108	152	138	155	
24	23,50	24,49	759	11	0	7	29	40	37	45	187	117	100	91	
25	24,50	25,49	408	5	5	1	12	23	16	25	92	71	43	37	
26	25,50	26,49	246	1	2	1	4	4	8	17	48	60	34	31	
27	26,50	27,49	172	2	0	0	14	2	4	7	29	43	27	28	
28	27,50	28,49	100	0	0	0	2	0	3	4	17	25	18	22	
29	28,50	29,49	77	0	0	0	2	0	0	3	10	19	12	19	
30	29,50	30,49	41	0	0	0	0	0	1	0	4	9	13	8	
31	30,50	31,49	28	0	0	0	0	0	0	0	2	7	7	3	
32	31,50	32,49	14	0	0	0	0	0	0	0	0	6	4	3	
33	32,50	33,49	8	0	0	0	0	0	0	0	2	0	4	0	
34	33,50	34,49	5	0	0	0	0	0	0	0	0	1	1	2	
35	34,50	35,49	5	0	0	0	0	0	0	0	2	1	1	0	
36	35,50	36,49	1	0	0	0	0	0	0	0	0	0	1	0	
37	36,50	37,49	0	0	0	0	0	0	0	0	0	0	0	0	
38	37,50	38,49	0	0	0	0	0	0	0	0	0	0	0	0	
39	38,50	39,49	0	0	0	0	0	0	0	0	0	0	0	0	
40	39,50	40,49	0	0	0	0	0	0	0	0	0	0	0	0	
41	40,50	0	0	0	0	0	0	0	0	0	0	0	0	0	



Project:

Energy Island North Sea

Licensed user:

EMD International A/S

Niels Jernes Vej 10

DK-9220 Aalborg Ø

+45 6916 4850

Thomas Sørensen / ts@emd.dk

Calculated:

06/03/2024 10.33

Meteo data report - Frequency distribution (TAB file data)**Mast:** Lot 1 LT 2y ; 20 year period **Period:** Full period: 01/01/2003 - 01/01/2023 (240,0 months)**Frequency distribution (TAB file data)**

120,00m - MCP LT - 2y 120m MCP session (1) - [Matrix]															
Bin	Start	End	Sum	0-N	1-NNE	2-ENE	3-E	4-ESE	5-SSE	6-S	7-SSW	8-WSW	9-W	10-WNW	11>NNW
Mean	10,66	8,51	7,96	9,44	10,36	10,59	10,87	10,55	11,27	11,14	10,78	10,77	11,45		
0	0,49	229	24	22	25	13	7	8	16	20	25	18	32	19	
1	0,50	1,49	1707	123	136	220	155	130	143	141	140	122	142	146	109
2	1,50	2,49	3425	226	252	328	271	256	255	314	284	339	272	335	293
3	2,50	3,49	5477	398	397	384	401	628	325	377	455	568	490	559	495
4	3,50	4,49	7108	494	416	422	408	607	415	423	568	846	945	923	641
5	4,50	5,49	9142	641	419	563	657	603	557	686	777	1019	1117	1239	864
6	5,50	6,49	10635	794	513	543	616	652	643	925	1141	1186	1261	1364	997
7	6,50	7,49	11573	618	432	588	805	666	710	992	1307	1331	1315	1559	1250
8	7,50	8,49	12265	512	518	536	835	869	730	1213	1266	1452	1488	1699	1147
9	8,50	9,49	12869	428	391	656	1000	1015	666	1096	1317	1460	1574	2002	1264
10	9,50	10,49	13609	455	277	726	1076	943	708	982	1256	1727	1625	2082	1752
11	10,50	11,49	13972	322	233	654	1096	1002	1009	972	1450	1683	1672	2232	1647
12	11,50	12,49	13254	342	262	593	1004	887	997	951	1398	1795	1513	1925	1587
13	12,50	13,49	11776	329	254	594	1013	884	833	976	1241	1353	1236	1644	1419
14	13,50	14,49	10555	249	168	433	633	917	789	839	1237	1286	1161	1421	1422
15	14,50	15,49	9057	226	152	425	552	789	704	688	1059	1186	985	1019	1272
16	15,50	16,49	7633	172	128	276	432	645	496	559	880	1026	893	1038	1088
17	16,50	17,49	5812	136	63	153	351	421	358	454	725	839	748	802	762
18	17,50	18,49	4408	78	53	141	196	354	335	376	584	605	578	535	573
19	18,50	19,49	3142	68	28	78	201	209	215	245	415	431	306	430	516
20	19,50	20,49	2452	47	10	74	145	161	164	207	336	334	304	308	362
21	20,50	21,49	1912	27	6	50	88	97	167	139	222	279	247	265	325
22	21,50	22,49	1193	9	4	28	72	45	55	80	208	203	180	156	153
23	22,50	23,49	738	13	1	14	27	67	49	43	108	111	80	113	112
24	23,50	24,49	511	6	2	7	20	36	23	27	92	102	48	62	86
25	24,50	25,49	335	8	3	0	17	17	16	22	67	59	38	39	49
26	25,50	26,49	221	0	1	0	4	1	7	15	52	47	29	33	32
27	26,50	27,49	105	1	1	0	3	2	2	3	13	36	19	10	15
28	27,50	28,49	77	0	0	0	2	0	0	4	14	20	15	14	8
29	28,50	29,49	51	0	0	0	2	0	0	1	5	9	11	12	11
30	29,50	30,49	33	0	0	0	0	0	0	0	3	5	6	10	9
31	30,50	31,49	17	0	1	0	0	0	0	0	0	4	6	5	1
32	31,50	32,49	15	0	0	0	0	0	0	0	0	6	4	4	1
33	32,50	33,49	4	0	0	0	0	0	0	0	0	1	1	0	2
34	33,50	34,49	3	0	0	0	0	0	0	0	0	1	0	1	1
35	34,50	35,49	2	0	0	0	0	0	0	0	0	1	0	0	0
36	35,50	36,49	3	0	0	0	0	0	0	0	0	1	1	0	0
37	36,50	37,49	0	0	0	0	0	0	0	0	0	0	0	0	0
38	37,50	38,49	0	0	0	0	0	0	0	0	0	0	0	0	0
39	38,50	39,49	0	0	0	0	0	0	0	0	0	0	0	0	0
40	39,50	40,49	0	0	0	0	0	0	0	0	0	0	0	0	0
41	40,50	0	0	0	0	0	0	0	0	0	0	0	0	0	0



Project:

Energy Island North Sea

Licensed user:

EMD International A/S

Niels Jernes Vej 10

DK-9220 Aalborg Ø

+45 6916 4850

Thomas Sørensen / ts@emd.dk

Calculated:

06/03/2024 10.33

Meteo data report - Frequency distribution (TAB file data)**Mast:** Lot 1 LT 2y ; 20 year period **Period:** Full period: 01/01/2003 - 01/01/2023 (240,0 months)**Frequency distribution (TAB file data)**

100,00m - MCP LT - 2y 100m MCP session (1) - [Matrix]															
Bin	Start	End	Sum	0-N	1-NNE	2-ENE	3-E	4-ESE	5-SSE	6-S	7-SSW	8-WSW	9-W	10-WNW	11>NNW
Mean	10,49	8,37	7,88	9,39	10,25	10,48	10,56	10,32	11,06	10,90	10,60	10,64	11,31		
0	0,49	238	34	22	17	14	12	9	14	26	20	20	25	25	
1	0,50	1,49	1707	148	159	183	167	122	130	138	152	123	126	144	
2	1,50	2,49	3562	229	277	331	276	268	267	317	287	341	295	348	
3	2,50	3,49	5474	406	404	348	426	590	335	429	466	584	469	575	
4	3,50	4,49	7310	486	396	416	422	617	491	419	579	918	928	953	
5	4,50	5,49	9258	611	472	574	613	595	555	704	813	1050	1173	1241	
6	5,50	6,49	10871	849	491	575	683	665	677	972	1140	1173	1256	1372	
7	6,50	7,49	11912	633	453	645	808	655	727	1050	1377	1400	1357	1604	
8	7,50	8,49	12987	559	499	555	941	977	820	1223	1314	1508	1504	1790	
9	8,50	9,49	13223	420	354	642	1099	1008	680	1220	1297	1507	1622	2102	
10	9,50	10,49	13996	443	337	747	1077	951	823	1074	1292	1779	1651	2128	
11	10,50	11,49	14690	352	209	706	1195	1047	1139	996	1631	1870	1634	2284	
12	11,50	12,49	12862	291	308	639	959	920	921	970	1339	1499	1492	1892	
13	12,50	13,49	11805	311	226	601	1006	935	826	940	1305	1391	1259	1621	
14	13,50	14,49	10150	248	213	422	624	854	688	797	1172	1337	1175	1352	
15	14,50	15,49	8812	223	138	403	529	741	564	680	1007	1114	1037	1021	
16	15,50	16,49	7194	187	115	237	409	607	484	559	785	938	752	1062	
17	16,50	17,49	5583	124	64	156	353	412	383	398	714	792	730	769	
18	17,50	18,49	4043	85	50	99	233	328	272	354	558	574	458	465	
19	18,50	19,49	2863	59	19	73	149	210	226	229	342	360	315	431	
20	19,50	20,49	2364	37	10	71	157	128	166	146	305	384	287	300	
21	20,50	21,49	1686	12	6	43	126	72	90	131	229	234	220	236	
22	21,50	22,49	1022	9	1	29	40	51	73	66	171	137	138	137	
23	22,50	23,49	602	11	2	14	25	71	29	31	87	97	49	90	
24	23,50	24,49	459	6	2	1	18	37	16	25	108	76	42	59	
25	24,50	25,49	229	5	2	0	11	0	10	21	47	46	30	28	
26	25,50	26,49	180	1	2	0	3	6	7	7	32	39	30	26	
27	26,50	27,49	90	0	0	0	4	0	0	3	14	26	18	14	
28	27,50	28,49	54	0	0	0	1	0	0	2	6	9	11	9	
29	28,50	29,49	42	0	0	0	0	2	0	0	5	8	12	6	
30	29,50	30,49	21	0	0	0	0	0	0	0	1	4	3	10	
31	30,50	31,49	17	0	1	0	0	0	0	0	0	5	6	3	
32	31,50	32,49	5	0	0	0	0	0	0	0	0	2	0	2	
33	32,50	33,49	4	0	0	0	0	0	0	0	0	1	0	1	
34	33,50	34,49	2	0	0	0	0	0	0	0	1	1	0	0	
35	34,50	35,49	3	0	0	0	0	0	0	0	1	0	2	0	
36	35,50	36,49	0	0	0	0	0	0	0	0	0	0	0	0	
37	36,50	37,49	0	0	0	0	0	0	0	0	0	0	0	0	
38	37,50	38,49	0	0	0	0	0	0	0	0	0	0	0	0	
39	38,50	39,49	0	0	0	0	0	0	0	0	0	0	0	0	
40	39,50	40,49	0	0	0	0	0	0	0	0	0	0	0	0	
41	40,50	0	0	0	0	0	0	0	0	0	0	0	0	0	



Project:

Energy Island North Sea

Licensed user:

EMD International A/S

Niels Jernes Vej 10

DK-9220 Aalborg Ø

+45 6916 4850

Thomas Sørensen / ts@emd.dk

Calculated:

06/03/2024 10.33

Meteo data report - Frequency distribution (TAB file data)**Mast:** Lot 1 LT 2y ; 20 year period **Period:** Full period: 01/01/2003 - 01/01/2023 (240,0 months)**Frequency distribution (TAB file data)**

90,00m - MCP LT - 2y 90m MCP session (1) - [Matrix]															
Bin	Start	End	Sum	0-N	1-NNE	2-ENE	3-E	4-ESE	5-SSE	6-S	7-SSW	8-WSW	9-W	10-WNW	11>NNW
Mean	10,39	8,36	7,96	9,34	10,09	10,40	10,44	10,23	10,91	10,77	10,49	10,57	11,20		
0	0,49	217	25	20	25	9	11	17	9	26	17	10	20	28	
1	0,50	1,49	1743	142	153	184	162	119	108	135	128	139	166	162	
2	1,50	2,49	3446	251	252	307	287	280	224	297	303	334	266	307	
3	2,50	3,49	5581	369	365	399	467	538	342	404	478	613	519	592	
4	3,50	4,49	7576	456	429	433	465	664	515	460	627	945	928	955	
5	4,50	5,49	9402	586	501	602	596	570	589	759	886	983	1205	1230	
6	5,50	6,49	11080	850	620	570	690	636	762	965	1124	1228	1272	991	
7	6,50	7,49	11976	644	455	553	790	697	707	1030	1377	1440	1478	1610	
8	7,50	8,49	13323	485	521	608	970	991	894	1315	1404	1446	1517	1905	
9	8,50	9,49	13585	446	386	677	1270	1047	649	1179	1251	1669	1700	2010	
10	9,50	10,49	14572	451	295	738	1126	1001	984	1019	1397	1857	1714	1773	
11	10,50	11,49	14529	305	257	738	1214	1130	1212	1089	1578	1703	1565	2114	
12	11,50	12,49	12962	326	281	625	923	814	842	1001	1490	1636	1465	1979	
13	12,50	13,49	11374	317	268	587	947	944	739	873	1263	1363	1219	1515	
14	13,50	14,49	10171	243	223	428	661	871	618	759	1156	1314	1191	1377	
15	14,50	15,49	8616	186	168	455	414	734	525	653	970	1126	1078	1110	
16	15,50	16,49	6705	150	109	168	341	543	466	512	770	849	759	953	
17	16,50	17,49	5511	131	77	179	330	377	411	399	761	789	644	749	
18	17,50	18,49	3779	70	34	110	230	298	279	356	459	550	388	432	
19	18,50	19,49	2840	45	24	86	163	200	188	170	381	364	341	445	
20	19,50	20,49	2224	43	12	52	125	111	156	161	287	343	282	299	
21	20,50	21,49	1516	26	6	45	107	85	99	107	159	212	209	186	
22	21,50	22,49	955	9	5	22	61	82	66	72	132	107	106	138	
23	22,50	23,49	688	11	1	7	26	50	27	37	133	110	62	99	
24	23,50	24,49	354	6	3	1	21	21	18	19	68	55	49	37	
25	24,50	25,49	256	4	0	0	13	12	11	22	51	53	27	32	
26	25,50	26,49	127	2	0	0	5	5	5	1	5	16	28	29	
27	26,50	27,49	92	1	1	0	1	0	3	5	21	13	20	18	
28	27,50	28,49	47	0	1	0	2	0	0	0	6	9	10	9	
29	28,50	29,49	28	0	1	0	1	0	0	0	1	5	8	7	
30	29,50	30,49	23	0	0	0	0	0	0	0	3	4	4	10	
31	30,50	31,49	10	0	0	0	0	0	0	0	1	1	5	2	
32	31,50	32,49	6	0	0	0	0	0	0	0	0	2	0	2	
33	32,50	33,49	2	0	0	0	0	0	0	0	1	0	0	1	
34	33,50	34,49	2	0	0	0	0	0	0	0	0	0	1	0	
35	34,50	35,49	2	0	0	0	0	0	0	0	1	0	1	0	
36	35,50	36,49	0	0	0	0	0	0	0	0	0	0	0	0	
37	36,50	37,49	0	0	0	0	0	0	0	0	0	0	0	0	
38	37,50	38,49	0	0	0	0	0	0	0	0	0	0	0	0	
39	38,50	39,49	0	0	0	0	0	0	0	0	0	0	0	0	
40	39,50	40,49	0	0	0	0	0	0	0	0	0	0	0	0	
41	40,50	0	0	0	0	0	0	0	0	0	0	0	0	0	



Project:

Energy Island North Sea

Licensed user:

EMD International A/S

Niels Jernes Vej 10

DK-9220 Aalborg Ø

+45 6916 4850

Thomas Sørensen / ts@emd.dk

Calculated:

06/03/2024 10.33

Meteo data report - Frequency distribution (TAB file data)**Mast:** Lot 1 LT 2y ; 20 year period **Period:** Full period: 01/01/2003 - 01/01/2023 (240,0 months)**Frequency distribution (TAB file data)**

60,00m - MCP LT - 2y 60m MCP session (1) - [Matrix]

Bin	Start	End	Sum	0-N	1-NNE	2-ENE	3-E	4-ESE	5-SSE	6-S	7-SSW	8-WSW	9-W	10-WNW	11-NNW
0	0,49	190	13	14	12	18	12	11	18	19	17	11	21	24	
1	0,50	1,49	1934	170	195	198	158	124	104	147	186	157	146	209	140
2	1,50	2,49	3599	286	307	300	287	277	243	281	275	334	350	327	332
3	2,50	3,49	5781	403	388	337	415	567	389	408	517	718	579	601	459
4	3,50	4,49	7995	548	428	532	492	680	549	524	681	946	926	965	724
5	4,50	5,49	9920	658	496	609	603	691	641	834	1000	1064	1168	1221	935
6	5,50	6,49	11679	851	575	673	729	736	791	1069	1242	1256	1305	1446	1007
7	6,50	7,49	12930	688	500	624	941	743	863	1164	1395	1528	1577	1728	1179
8	7,50	8,49	14246	561	504	706	1124	1029	906	1414	1484	1480	1737	1990	1311
9	8,50	9,49	14987	502	428	777	1270	1268	950	1259	1541	1641	1705	2222	1424
10	9,50	10,49	15842	390	394	978	1219	1190	1071	1222	1677	2065	1866	2124	1646
11	10,50	11,49	14540	302	254	775	1177	1132	1056	1041	1535	1766	1562	2242	1698
12	11,50	12,49	12698	336	293	612	986	860	756	983	1407	1476	1414	1972	1603
13	12,50	13,49	10736	334	255	547	783	779	629	719	1259	1394	1281	1413	1343
14	13,50	14,49	9312	265	152	480	526	728	611	828	957	1097	1168	1277	1223
15	14,50	15,49	7844	176	116	271	425	635	476	543	936	1173	863	1087	1143
16	15,50	16,49	6029	148	63	187	257	418	365	450	698	790	760	889	1004
17	16,50	17,49	4699	96	46	117	255	381	335	346	630	592	535	659	707
18	17,50	18,49	3119	60	26	83	201	270	222	214	366	414	371	431	461
19	18,50	19,49	2444	78	15	54	145	193	165	138	338	272	295	303	448
20	19,50	20,49	1818	26	4	51	137	104	107	137	223	254	191	242	342
21	20,50	21,49	1063	19	2	39	78	65	79	69	114	178	134	140	146
22	21,50	22,49	826	9	0	11	36	50	52	34	124	108	99	154	149
23	22,50	23,49	458	6	2	5	18	32	21	33	88	67	50	56	80
24	23,50	24,49	274	2	1	4	16	31	9	14	51	40	24	38	44
25	24,50	25,49	140	2	1	0	4	3	2	4	34	34	21	19	16
26	25,50	26,49	96	0	0	0	3	0	2	4	9	20	20	26	12
27	26,50	27,49	56	0	0	0	1	0	1	0	4	10	12	17	11
28	27,50	28,49	29	0	0	0	2	0	0	0	5	4	9	7	2
29	28,50	29,49	13	0	0	0	0	0	0	0	1	2	5	2	3
30	29,50	30,49	13	0	0	0	0	0	0	0	1	3	4	3	2
31	30,50	31,49	3	0	0	0	0	0	0	0	1	2	0	0	0
32	31,50	32,49	3	0	0	0	0	0	0	0	0	0	1	0	2
33	32,50	33,49	1	0	0	0	0	0	0	0	1	0	0	0	0
34	33,50	34,49	2	0	0	0	0	0	0	0	0	0	1	1	0
35	34,50	35,49	1	0	0	0	0	0	0	0	0	0	1	0	0
36	35,50	36,49	0	0	0	0	0	0	0	0	0	0	0	0	0
37	36,50	37,49	0	0	0	0	0	0	0	0	0	0	0	0	0
38	37,50	38,49	0	0	0	0	0	0	0	0	0	0	0	0	0
39	38,50	39,49	0	0	0	0	0	0	0	0	0	0	0	0	0
40	39,50	40,49	0	0	0	0	0	0	0	0	0	0	0	0	0
41	40,50	0	0	0	0	0	0	0	0	0	0	0	0	0	0



Project:

Energy Island North Sea

Licensed user:

EMD International A/S

Niels Jernes Vej 10

DK-9220 Aalborg Ø

+45 6916 4850

Thomas Sørensen / ts@emd.dk

Calculated:

06/03/2024 10.33

Meteo data report - Frequency distribution (TAB file data)**Mast:** Lot 1 LT 2y ; 20 year period **Period:** Full period: 01/01/2003 - 01/01/2023 (240,0 months)**Frequency distribution (TAB file data)**

40,00m - MCP LT - 2y 40m MCP session (1) - [Matrix]															
Bin	Start	End	Sum	0-N	1-NNE	2-ENE	3-E	4-ESE	5-SSE	6-S	7-SSW	8-WSW	9-W	10-WNW	11-NNW
0	0,49	208	18	16	17	17	10	8	20	18	26	13	26	19	
1	0,50	1,49	2007	166	216	216	140	117	124	158	199	187	137	204	143
2	1,50	2,49	3817	305	288	308	309	292	263	321	310	375	345	358	343
3	2,50	3,49	6252	414	428	353	432	659	424	436	565	750	642	669	480
4	3,50	4,49	8490	543	423	578	583	768	554	587	800	947	973	1006	728
5	4,50	5,49	10875	724	518	752	662	693	766	939	1173	1112	1241	1297	998
6	5,50	6,49	12541	849	545	613	842	899	917	1188	1359	1400	1425	1497	1007
7	6,50	7,49	14065	652	527	757	1055	939	994	1374	1535	1589	1626	1785	1232
8	7,50	8,49	15121	603	536	799	1290	1217	1000	1347	1533	1550	1704	2172	1370
9	8,50	9,49	16123	485	499	931	1313	1238	984	1350	1758	1928	1919	2237	1481
10	9,50	10,49	15852	379	342	1010	1259	1224	1106	1155	1697	1904	1752	2233	1791
11	10,50	11,49	13953	320	279	713	1042	1057	855	988	1496	1704	1549	2183	1767
12	11,50	12,49	11973	333	247	465	902	690	605	875	1445	1568	1398	1846	1599
13	12,50	13,49	10189	337	208	486	602	648	525	822	1043	1303	1410	1410	1395
14	13,50	14,49	8758	230	157	432	555	698	560	653	877	1136	1016	1201	1243
15	14,50	15,49	7281	177	82	209	375	630	470	469	878	1012	816	1027	1136
16	15,50	16,49	5545	133	64	150	239	411	399	444	693	696	638	834	844
17	16,50	17,49	3964	75	47	120	238	324	302	266	512	486	464	512	618
18	17,50	18,49	2865	84	27	85	212	250	189	183	303	351	312	394	475
19	18,50	19,49	1979	41	10	60	121	147	126	113	254	249	206	236	416
20	19,50	20,49	1350	34	8	52	98	63	83	84	156	163	183	206	220
21	20,50	21,49	884	13	0	18	52	70	60	45	107	123	119	158	119
22	21,50	22,49	545	4	1	4	30	26	40	33	108	63	64	73	99
23	22,50	23,49	283	3	2	4	17	31	8	16	51	42	22	32	55
24	23,50	24,49	173	4	1	0	10	6	3	5	34	35	21	29	25
25	24,50	25,49	103	0	0	0	2	2	2	3	7	18	22	30	17
26	25,50	26,49	58	0	0	0	1	0	1	1	5	9	16	21	4
27	26,50	27,49	28	0	0	0	1	0	0	0	3	2	7	11	4
28	27,50	28,49	19	0	0	0	1	0	0	0	3	3	7	2	3
29	28,50	29,49	7	0	0	0	0	0	0	0	0	2	2	2	1
30	29,50	30,49	6	0	0	0	0	0	0	0	1	2	1	1	1
31	30,50	31,49	0	0	0	0	0	0	0	0	0	0	0	0	0
32	31,50	32,49	5	0	0	0	0	0	0	0	1	0	2	0	2
33	32,50	33,49	1	0	0	0	0	0	0	0	0	0	0	1	0
34	33,50	34,49	0	0	0	0	0	0	0	0	0	0	0	0	0
35	34,50	35,49	0	0	0	0	0	0	0	0	0	0	0	0	0
36	35,50	36,49	0	0	0	0	0	0	0	0	0	0	0	0	0
37	36,50	37,49	0	0	0	0	0	0	0	0	0	0	0	0	0
38	37,50	38,49	0	0	0	0	0	0	0	0	0	0	0	0	0
39	38,50	39,49	0	0	0	0	0	0	0	0	0	0	0	0	0
40	39,50	40,49	0	0	0	0	0	0	0	0	0	0	0	0	0
41	40,50	0	0	0	0	0	0	0	0	0	0	0	0	0	0



Project:

Energy Island North Sea

Licensed user:

EMD International A/S

Niels Jernes Vej 10

DK-9220 Aalborg Ø

+45 6916 4850

Thomas Sørensen / ts@emd.dk

Calculated:

06/03/2024 10.33

Meteo data report - Frequency distribution (TAB file data)**Mast:** Lot 1 LT 2y ; 20 year period **Period:** Full period: 01/01/2003 - 01/01/2023 (240,0 months)**Frequency distribution (TAB file data)**

30,00m - MCP LT - 2y 30m MCP session (1) - [Matrix]

Bin	Start	End	Sum	0-N	1-NNE	2-ENE	3-E	4-ESE	5-SSE	6-S	7-SSW	8-WSW	9-W	10-WNW	11-NNW
0	0,49	234	33	22	26	22	8	14	29	17	7	23	20	13	
1	0,50	1,49	1973	170	165	188	150	171	112	189	137	163	197	171	160
2	1,50	2,49	3931	287	294	325	296	337	312	312	339	405	281	370	373
3	2,50	3,49	6757	429	413	390	492	679	499	487	508	822	747	756	535
4	3,50	4,49	8966	544	496	690	566	753	548	719	909	973	1019	983	766
5	4,50	5,49	11478	817	608	731	817	715	823	1035	1204	1162	1310	1265	991
6	5,50	6,49	13212	847	540	679	880	986	986	1364	1338	1472	1479	1573	1068
7	6,50	7,49	14919	652	605	858	1138	998	1086	1461	1637	1629	1803	1770	1282
8	7,50	8,49	15740	571	609	894	1254	1216	980	1400	1642	1654	1908	2209	1403
9	8,50	9,49	16615	466	463	958	1352	1299	1069	1294	1761	1998	1983	2379	1593
10	9,50	10,49	15177	376	325	852	1262	1143	1006	1114	1559	1803	1732	2322	1683
11	10,50	11,49	13707	385	220	628	1053	862	842	971	1519	1653	1508	2186	1880
12	11,50	12,49	11708	332	235	485	784	726	629	839	1365	1620	1503	1781	1409
13	12,50	13,49	10049	278	202	485	717	689	536	749	1029	1239	1330	1387	1408
14	13,50	14,49	8433	226	125	373	428	607	527	589	856	1146	1011	1198	1347
15	14,50	15,49	6755	141	89	188	286	555	428	472	858	950	703	1025	1060
16	15,50	16,49	4923	96	46	144	276	371	312	385	658	606	585	711	733
17	16,50	17,49	3644	75	33	108	210	308	284	250	397	426	427	524	602
18	17,50	18,49	2556	57	14	79	164	221	166	228	271	320	247	301	488
19	18,50	19,49	1690	33	8	44	171	79	100	97	223	211	200	248	276
20	19,50	20,49	1198	10	2	38	86	56	81	53	154	142	224	177	175
21	20,50	21,49	738	19	2	24	39	64	25	49	118	105	60	113	120
22	21,50	22,49	403	7	2	4	17	33	19	18	67	67	44	45	80
23	22,50	23,49	226	2	3	1	15	18	7	12	30	42	34	34	28
24	23,50	24,49	114	0	1	0	4	2	5	4	15	15	18	26	24
25	24,50	25,49	69	0	2	0	0	1	1	0	9	12	17	14	13
26	25,50	26,49	59	1	0	0	4	0	0	0	3	8	9	22	12
27	26,50	27,49	22	0	0	0	0	0	0	0	0	6	7	5	4
28	27,50	28,49	14	0	0	0	0	0	0	0	0	5	4	4	1
29	28,50	29,49	5	0	0	0	0	0	0	0	1	1	1	2	0
30	29,50	30,49	3	0	0	0	0	0	0	0	0	1	2	0	0
31	30,50	31,49	1	0	0	0	0	0	0	0	0	1	0	0	0
32	31,50	32,49	1	0	0	0	0	0	0	0	0	0	0	1	0
33	32,50	33,49	0	0	0	0	0	0	0	0	0	0	0	0	0
34	33,50	34,49	0	0	0	0	0	0	0	0	0	0	0	0	0
35	34,50	35,49	0	0	0	0	0	0	0	0	0	0	0	0	0
36	35,50	36,49	0	0	0	0	0	0	0	0	0	0	0	0	0
37	36,50	37,49	0	0	0	0	0	0	0	0	0	0	0	0	0
38	37,50	38,49	0	0	0	0	0	0	0	0	0	0	0	0	0
39	38,50	39,49	0	0	0	0	0	0	0	0	0	0	0	0	0
40	39,50	40,49	0	0	0	0	0	0	0	0	0	0	0	0	0
41	40,50	0	0	0	0	0	0	0	0	0	0	0	0	0	0



Project:
Energy Island North Sea

Licensed user:
EMD International A/S
Niels Jernes Vej 10
DK-9220 Aalborg Ø
+45 6916 4850
Thomas Sørensen / ts@emd.dk
Calculated:
06/03/2024 10.33

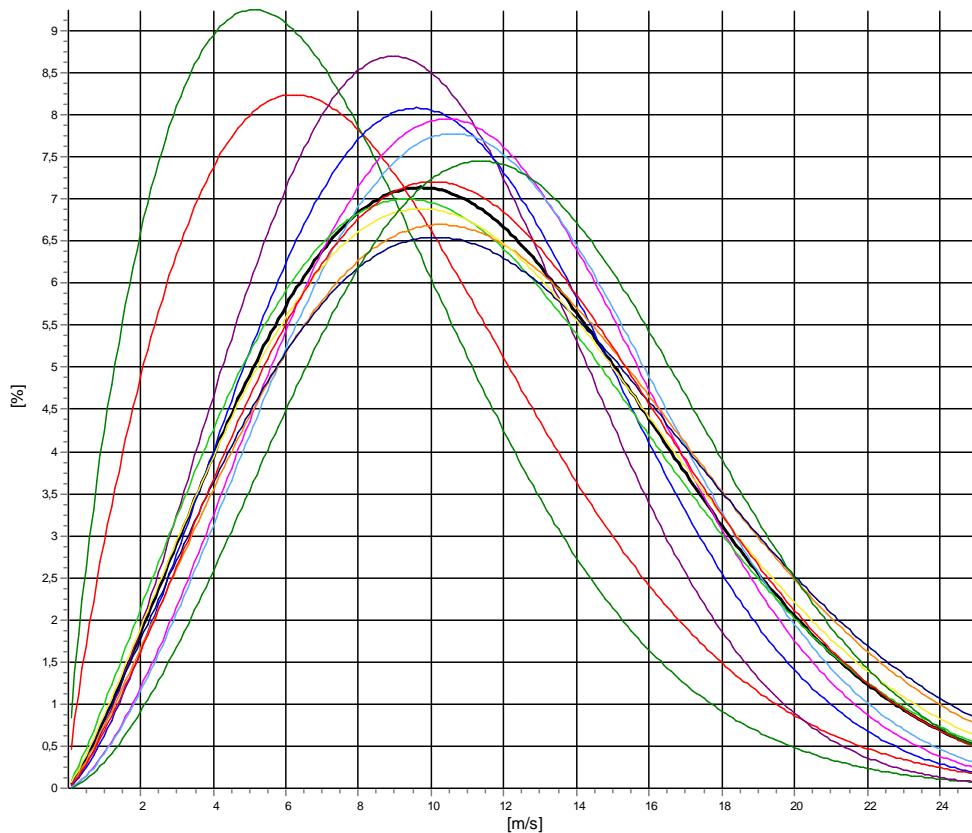
Meteo data report - Weibull data overview

Mast: Lot 1 LT 2y ; 20 year period **Period:** Full period: 01/01/2003 - 01/01/2023 (240,0 months)

Height: **270,00m - MCP LT - 2y 270m MCP session (1) - [Matrix]**

Weibull data

Sector	A [m/s]	k	f	Mean wind speed [m/s]
0-N	9,77	1,802	3,98	8,69
1-NNE	8,49	1,718	2,99	7,57
2-ENE	11,22	2,393	4,49	9,95
3-E	12,05	2,386	6,29	10,68
4-ESE	12,74	2,511	7,22	11,31
5-SSE	12,99	2,501	6,41	11,53
6-S	12,67	2,102	7,57	11,22
7-SSW	13,58	2,177	10,69	12,03
8-WSW	13,66	2,127	12,62	12,10
9-W	13,05	2,141	12,20	11,56
10-WNW	12,99	2,265	13,57	11,51
11-NNW	13,81	2,558	11,96	12,26
Mean	12,81	2,194	100,00	11,35



All A: 12.8 m/s k: 2.19 Vm: 11.3 m/s	N A: 9.8 m/s k: 1.80 Vm: 8.7 m/s	NNE A: 8.5 m/s k: 1.72 Vm: 7.6 m/s	ENE A: 11.2 m/s k: 2.39 Vm: 9.9 m/s
E A: 12.0 m/s k: 2.39 Vm: 10.7 m/s	ESE A: 12.7 m/s k: 2.51 Vm: 11.3 m/s	SSE A: 13.0 m/s k: 2.50 Vm: 11.5 m/s	S A: 12.7 m/s k: 2.10 Vm: 11.2 m/s
SSW A: 13.6 m/s k: 2.18 Vm: 12.0 m/s	WSW A: 13.7 m/s k: 2.13 Vm: 12.1 m/s	W A: 13.1 m/s k: 2.14 Vm: 11.6 m/s	WNW A: 13.0 m/s k: 2.26 Vm: 11.5 m/s
NNW A: 13.8 m/s k: 2.56 Vm: 12.3 m/s			



Project:
Energy Island North Sea

Licensed user:
EMD International A/S
Niels Jernes Vej 10
DK-9220 Aalborg Ø
+45 6916 4850
Thomas Sørensen / ts@emd.dk
Calculated:
06/03/2024 10.33

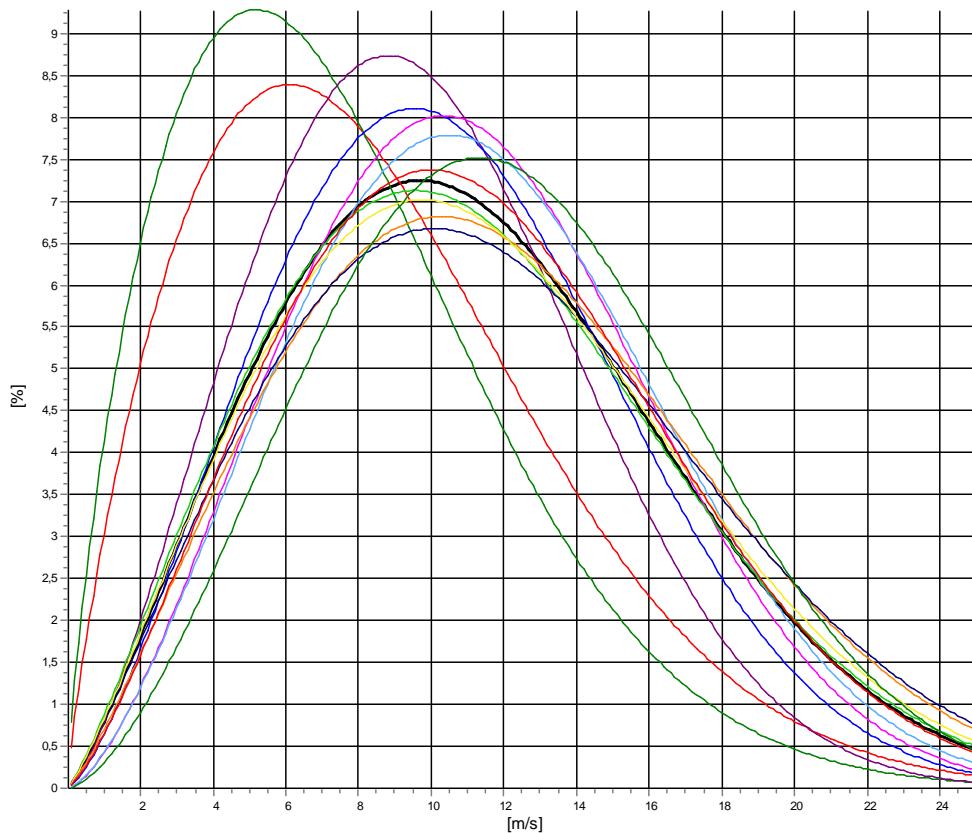
Meteo data report - Weibull data overview

Mast: Lot 1 LT 2y ; 20 year period **Period:** Full period: 01/01/2003 - 01/01/2023 (240,0 months)

Height: 240,00m - MCP LT - 2y 240m MCP session (1) - [Matrix]

Weibull data

Sector	A	k	f	Mean wind speed
	[m/s]			[m/s]
0-N	9,59	1,799	3,97	8,53
1-NNE	8,50	1,735	2,98	7,58
2-ENE	11,09	2,372	4,57	9,83
3-E	11,99	2,380	6,36	10,63
4-ESE	12,65	2,514	7,28	11,22
5-SSE	12,91	2,485	6,46	11,45
6-S	12,71	2,167	7,61	11,26
7-SSW	13,49	2,210	10,67	11,94
8-WSW	13,49	2,147	12,49	11,95
9-W	12,95	2,173	12,16	11,47
10-WNW	12,84	2,298	13,59	11,37
11-NNW	13,73	2,570	11,86	12,19
Mean	12,71	2,216	100,00	11,26



All A: 12.7 m/s k: 2.22 Vm: 11.3 m/s	N A: 9.6 m/s k: 1.80 Vm: 8.5 m/s	NNE A: 8.5 m/s k: 1.73 Vm: 7.6 m/s	ENE A: 11.1 m/s k: 2.37 Vm: 9.8 m/s
E A: 12.0 m/s k: 2.38 Vm: 10.6 m/s	ESE A: 12.6 m/s k: 2.51 Vm: 11.2 m/s	SSE A: 12.9 m/s k: 2.49 Vm: 11.4 m/s	S A: 12.7 m/s k: 2.17 Vm: 11.3 m/s
SSW A: 13.5 m/s k: 2.21 Vm: 11.9 m/s	WSW A: 13.5 m/s k: 2.15 Vm: 11.9 m/s	W A: 12.9 m/s k: 2.17 Vm: 11.5 m/s	WNW A: 12.8 m/s k: 2.30 Vm: 11.4 m/s
NNW A: 13.7 m/s k: 2.57 Vm: 12.2 m/s			



Project:
Energy Island North Sea

Licensed user:
EMD International A/S
Niels Jernes Vej 10
DK-9220 Aalborg Ø
+45 6916 4850
Thomas Sørensen / ts@emd.dk
Calculated:
06/03/2024 10.33

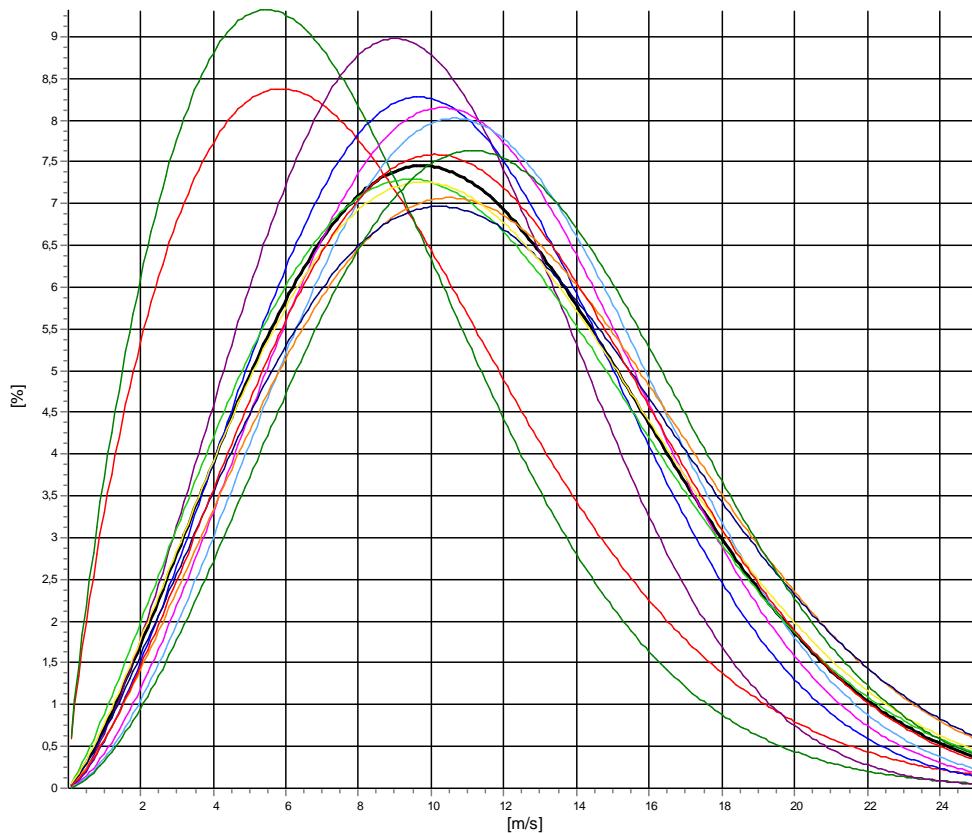
Meteo data report - Weibull data overview

Mast: Lot 1 LT 2y ; 20 year period **Period:** Full period: 01/01/2003 - 01/01/2023 (240,0 months)

Height: 200,00m - MCP LT - 2y 200m MCP session (1) - [Matrix]

Weibull data

Sector	A	k	f	Mean wind speed
	[m/s]			[m/s]
0-N	9,49	1,758	3,93	8,45
1-NNE	8,61	1,791	3,04	7,66
2-ENE	11,11	2,462	4,62	9,86
3-E	11,99	2,447	6,57	10,64
4-ESE	12,54	2,537	7,24	11,13
5-SSE	12,89	2,576	6,48	11,45
6-S	12,48	2,179	7,68	11,05
7-SSW	13,41	2,305	10,59	11,88
8-WSW	13,31	2,237	12,45	11,79
9-W	12,74	2,228	12,09	11,29
10-WNW	12,75	2,367	13,50	11,30
11-NNW	13,49	2,563	11,80	11,98
Mean	12,58	2,272	100,00	11,15



— All A: 12.6 m/s k: 2.27 Vm: 11.1 m/s	— N A: 9.5 m/s k: 1.76 Vm: 8.4 m/s	— NNE A: 8.6 m/s k: 1.79 Vm: 7.7 m/s	— ENE A: 11.1 m/s k: 2.46 Vm: 9.9 m/s
— E A: 12.0 m/s k: 2.45 Vm: 10.6 m/s	— ESE A: 12.5 m/s k: 2.54 Vm: 11.1 m/s	— SSE A: 12.9 m/s k: 2.58 Vm: 11.4 m/s	— SA: 12.5 m/s k: 2.18 Vm: 11.0 m/s
— SSW A: 13.4 m/s k: 2.31 Vm: 11.9 m/s	— WSW A: 13.3 m/s k: 2.24 Vm: 11.8 m/s	— W A: 12.7 m/s k: 2.23 Vm: 11.3 m/s	— WNW A: 12.7 m/s k: 2.37 Vm: 11.3 m/s
— NNW A: 13.5 m/s k: 2.66 Vm: 12.0 m/s			



Project:
Energy Island North Sea

Licensed user:
EMD International A/S
Niels Jernes Vej 10
DK-9220 Aalborg Ø
+45 6916 4850
Thomas Sørensen / ts@emd.dk
Calculated:
06/03/2024 10.33

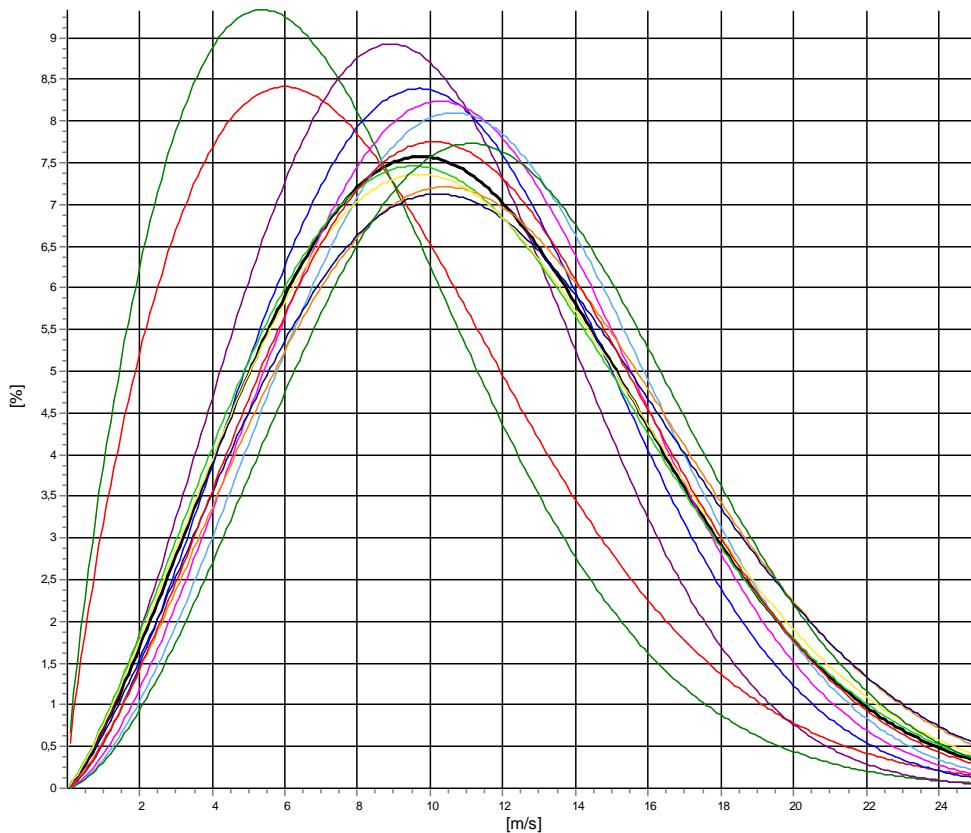
Meteo data report - Weibull data overview

Mast: Lot 1 LT 2y ; 20 year period **Period:** Full period: 01/01/2003 - 01/01/2023 (240,0 months)

Height: **180,00m - MCP LT - 2y 180m MCP session (1) - [Matrix]**

Weibull data

Sector	A	k	f	Mean wind speed
	[m/s]			[m/s]
0-N	9,51	1,781	3,98	8,46
1-NNE	8,56	1,775	3,05	7,62
2-ENE	11,09	2,435	4,62	9,83
3-E	11,94	2,474	6,65	10,59
4-ESE	12,46	2,552	7,26	11,06
5-SSE	12,84	2,594	6,48	11,40
6-S	12,44	2,239	7,79	11,02
7-SSW	13,25	2,328	10,57	11,74
8-WSW	13,17	2,274	12,35	11,67
9-W	12,62	2,244	12,01	11,18
10-WNW	12,62	2,401	13,55	11,19
11-NNW	13,43	2,587	11,69	11,92
Mean	12,49	2,297	100,00	11,06



All A: 12.5 m/s k: 2.30 Vm: 11.1 m/s	N A: 9.5 m/s k: 1.78 Vm: 8.5 m/s	NNE A: 8.6 m/s k: 1.78 Vm: 7.6 m/s	ENE A: 11.1 m/s k: 2.43 Vm: 9.8 m/s
E A: 11.9 m/s k: 2.47 Vm: 10.6 m/s	ESE A: 12.5 m/s k: 2.55 Vm: 11.1 m/s	SSE A: 12.8 m/s k: 2.59 Vm: 11.4 m/s	S A: 12.4 m/s k: 2.24 Vm: 11.0 m/s
SSW A: 13.2 m/s k: 2.33 Vm: 11.7 m/s	WSW A: 13.2 m/s k: 2.27 Vm: 11.7 m/s	W A: 12.6 m/s k: 2.24 Vm: 11.2 m/s	WNW A: 12.6 m/s k: 2.40 Vm: 11.2 m/s
NWW A: 13.4 m/s k: 2.59 Vm: 11.9 m/s			



Project:
Energy Island North Sea

Licensed user:
EMD International A/S
Niels Jernes Vej 10
DK-9220 Aalborg Ø
+45 6916 4850
Thomas Sørensen / ts@emd.dk
Calculated:
06/03/2024 10.33

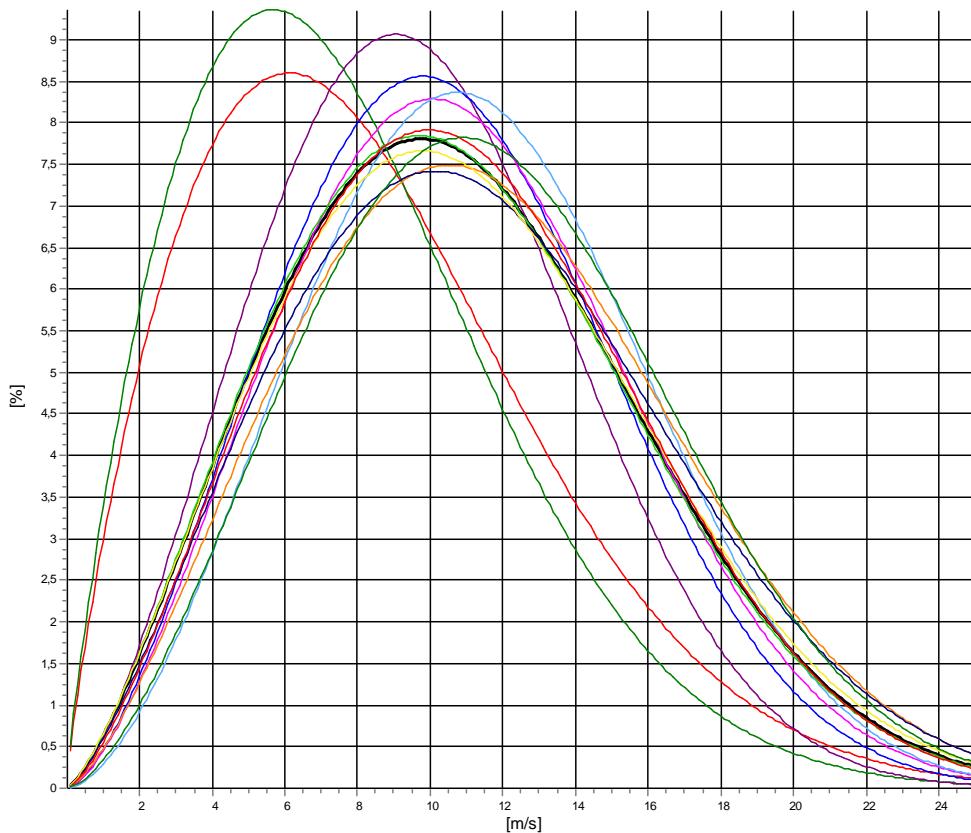
Meteo data report - Weibull data overview

Mast: Lot 1 LT 2y ; 20 year period **Period:** Full period: 01/01/2003 - 01/01/2023 (240,0 months)

Height: **150,00m - MCP LT - 2y 150m MCP session (1) - [Matrix]**

Weibull data

Sector	A	k	f	Mean wind speed
	[m/s]			[m/s]
0-N	9,44	1,826	3,90	8,38
1-NNE	8,70	1,838	3,01	7,73
2-ENE	11,12	2,492	4,71	9,86
3-E	11,94	2,539	6,80	10,60
4-ESE	12,28	2,525	7,27	10,90
5-SSE	12,80	2,685	6,53	11,38
6-S	12,27	2,352	7,74	10,87
7-SSW	13,13	2,419	10,62	11,64
8-WSW	12,90	2,334	12,40	11,43
9-W	12,47	2,326	11,76	11,04
10-NNW	12,43	2,417	13,48	11,02
11-NNW	13,20	2,570	11,77	11,72
Mean	12,35	2,355	100,00	10,94





Project:
Energy Island North Sea

Licensed user:
EMD International A/S
Niels Jernes Vej 10
DK-9220 Aalborg Ø
+45 6916 4850
Thomas Sørensen / ts@emd.dk
Calculated:
06/03/2024 10.33

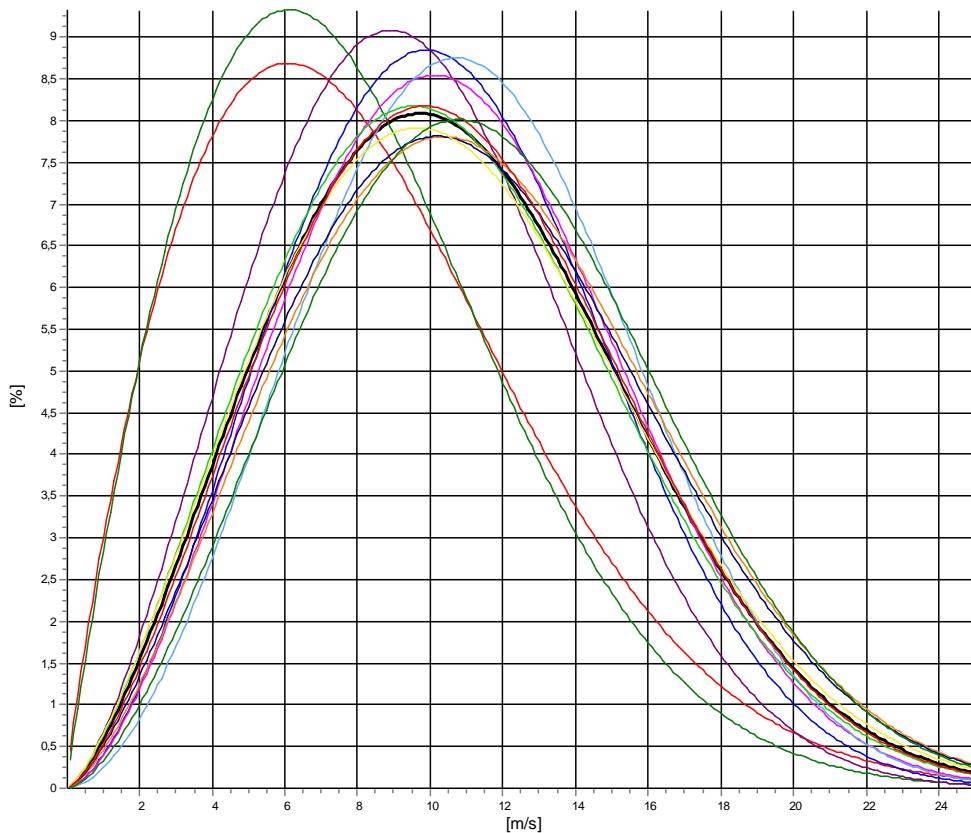
Meteo data report - Weibull data overview

Mast: Lot 1 LT 2y ; 20 year period **Period:** Full period: 01/01/2003 - 01/01/2023 (240,0 months)

Height: **120,00m - MCP LT - 2y 120m MCP session (1) - [Matrix]**

Weibull data

Sector	A	k	f	Mean wind speed
	[m/s]			[m/s]
0-N	9,36	1,834	3,85	8,32
1-NNE	8,96	1,919	2,93	7,94
2-ENE	11,00	2,467	4,85	9,76
3-E	11,87	2,624	6,90	10,55
4-ESE	12,18	2,597	7,36	10,82
5-SSE	12,58	2,779	6,49	11,20
6-S	11,95	2,396	7,85	10,59
7-SSW	12,81	2,470	10,63	11,36
8-WSW	12,67	2,436	12,26	11,23
9-W	12,19	2,357	11,59	10,80
10-WNW	12,18	2,457	13,70	10,80
11-NNW	13,00	2,598	11,57	11,55
Mean	12,14	2,412	100,00	10,76





Project:
Energy Island North Sea

Licensed user:
EMD International A/S
Niels Jernes Vej 10
DK-9220 Aalborg Ø
+45 6916 4850
Thomas Sørensen / ts@emd.dk
Calculated:
06/03/2024 10.33

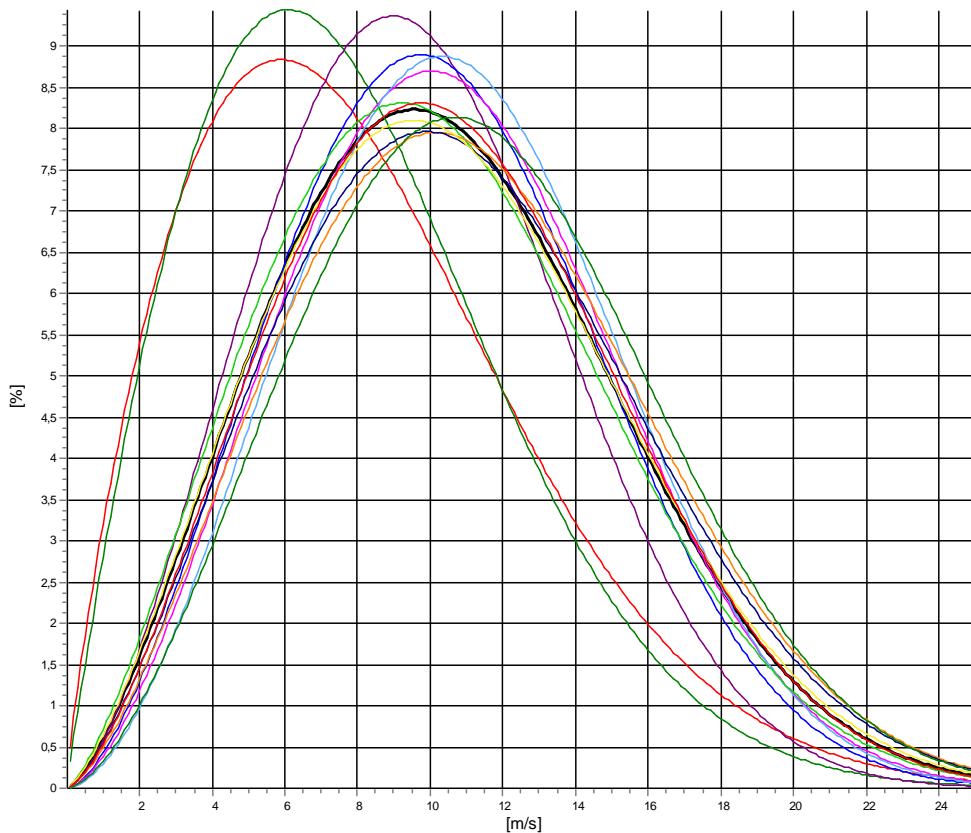
Meteo data report - Weibull data overview

Mast: Lot 1 LT 2y ; 20 year period **Period:** Full period: 01/01/2003 - 01/01/2023 (240,0 months)

Height: **100,00m - MCP LT - 2y 100m MCP session (1) - [Matrix]**

Weibull data

Sector	A	k	f	Mean wind speed
	[m/s]			[m/s]
0-N	9,15	1,815	3,87	8,14
1-NNE	8,89	1,932	2,98	7,88
2-ENE	10,92	2,540	4,86	9,69
3-E	11,72	2,602	7,06	10,41
4-ESE	12,05	2,619	7,35	10,71
5-SSE	12,21	2,728	6,51	10,87
6-S	11,63	2,365	7,94	10,31
7-SSW	12,55	2,463	10,61	11,13
8-WSW	12,35	2,418	12,18	10,95
9-W	11,99	2,380	11,47	10,63
10-WNW	12,02	2,467	13,75	10,66
11>NNW	12,85	2,612	11,44	11,42
Mean	11,93	2,412	100,00	10,57



All A: 11,9 m/s k: 2,41 Vm: 10,6 m/s	N A: 9,2 m/s k: 1,82 Vm: 8,1 m/s	NNE A: 8,9 m/s k: 1,93 Vm: 7,9 m/s	ENE A: 10,9 m/s k: 2,54 Vm: 9,7 m/s
E A: 11,7 m/s k: 2,60 Vm: 10,4 m/s	ESE A: 12,1 m/s k: 2,62 Vm: 10,7 m/s	SSE A: 12,2 m/s k: 2,73 Vm: 10,9 m/s	S A: 11,6 m/s k: 2,36 Vm: 10,3 m/s
SSW A: 12,6 m/s k: 2,46 Vm: 11,1 m/s	WSW A: 12,4 m/s k: 2,42 Vm: 11,0 m/s	W A: 12,0 m/s k: 2,38 Vm: 10,6 m/s	NNW A: 12,9 m/s k: 2,61 Vm: 11,4 m/s
			WNW A: 12,0 m/s k: 2,47 Vm: 10,7 m/s



Project:
Energy Island North Sea

Licensed user:
EMD International A/S
Niels Jernes Vej 10
DK-9220 Aalborg Ø
+45 6916 4850
Thomas Sørensen / ts@emd.dk
Calculated:
06/03/2024 10.33

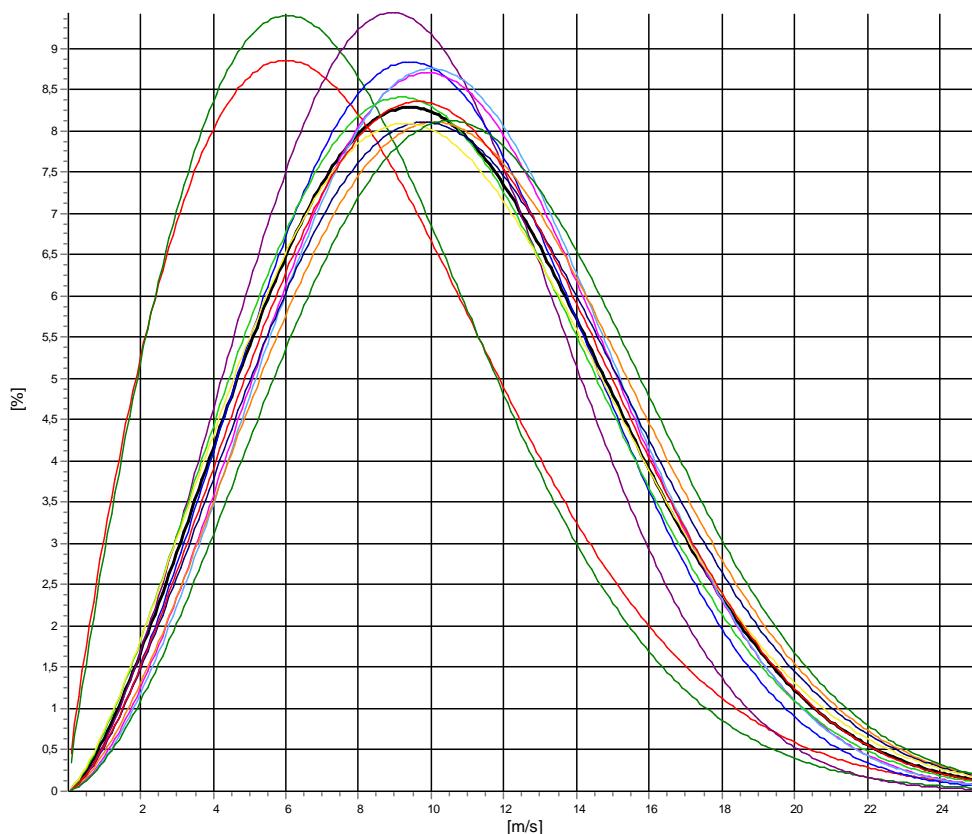
Meteo data report - Weibull data overview

Mast: Lot 1 LT 2y ; 20 year period **Period:** Full period: 01/01/2003 - 01/01/2023 (240,0 months)

Height: **90,00m - MCP LT - 2y 90m MCP session (1) - [Matrix]**

Weibull data

Sector	A	k	f	Mean wind speed
	[m/s]			[m/s]
0-N	9,19	1,836	3,75	8,17
1-NNE	8,89	1,917	3,12	7,88
2-ENE	10,86	2,545	4,90	9,64
3-E	11,50	2,519	7,08	10,20
4-ESE	11,94	2,592	7,32	10,61
5-SSE	12,00	2,626	6,53	10,66
6-S	11,54	2,376	7,88	10,23
7-SSW	12,41	2,488	10,67	11,01
8-WSW	12,20	2,433	12,15	10,81
9-W	11,81	2,329	11,54	10,47
10-WNW	11,93	2,460	13,63	10,58
11-NNW	12,73	2,574	11,41	11,30
Mean	11,79	2,398	100,00	10,46



All A: 11,8 m/s k: 2,40 Vm: 10,5 m/s	N A: 9,2 m/s k: 1,84 Vm: 8,2 m/s	NNE A: 8,9 m/s k: 1,92 Vm: 7,9 m/s	ENE A: 10,9 m/s k: 2,55 Vm: 9,6 m/s
E A: 11,5 m/s k: 2,52 Vm: 10,2 m/s	ESE A: 11,9 m/s k: 2,59 Vm: 10,6 m/s	SSE A: 12,0 m/s k: 2,63 Vm: 10,7 m/s	S A: 11,5 m/s k: 2,38 Vm: 10,2 m/s
SSW A: 12,4 m/s k: 2,49 Vm: 11,0 m/s	WSW A: 12,2 m/s k: 2,43 Vm: 10,8 m/s	W A: 11,8 m/s k: 2,33 Vm: 10,5 m/s	NNW A: 12,7 m/s k: 2,57 Vm: 11,3 m/s
			WNW A: 11,9 m/s k: 2,46 Vm: 10,6 m/s



Project:
Energy Island North Sea

Licensed user:
EMD International A/S
Niels Jernes Vej 10
DK-9220 Aalborg Ø
+45 6916 4850
Thomas Sørensen / ts@emd.dk
Calculated:
06/03/2024 10.33

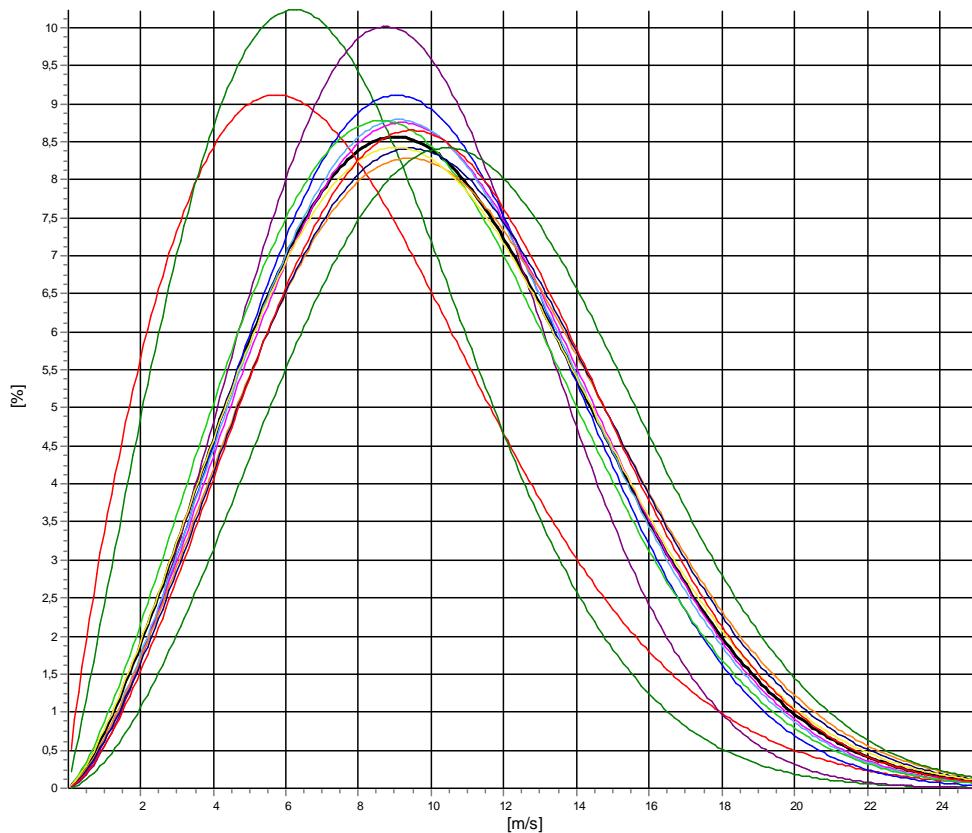
Meteo data report - Weibull data overview

Mast: Lot 1 LT 2y ; 20 year period **Period:** Full period: 01/01/2003 - 01/01/2023 (240,0 months)

Height: **60,00m - MCP LT - 2y 60m MCP session (1) - [Matrix]**

Weibull data

Sector	A [m/s]	k	f Mean wind speed [m/s]
0-N	8,88	1,820	3,95
1-NNE	8,57	2,069	3,11
2-ENE	10,50	2,628	5,12
3-E	11,09	2,501	7,02
4-ESE	11,38	2,455	7,41
5-SSE	11,29	2,446	6,51
6-S	10,94	2,342	7,93
7-SSW	11,77	2,392	10,72
8-WSW	11,73	2,428	11,92
9-W	11,43	2,351	11,52
10-NNW	11,64	2,490	13,59
11-NNW	12,49	2,628	11,19
Mean	11,35	2,379	10,06



All A: 11,3 m/s k: 2,38 Vm: 10,1 m/s	N A: 8,9 m/s k: 1,82 Vm: 7,9 m/s	NNE A: 8,6 m/s k: 2,07 Vm: 7,6 m/s	ENE A: 10,5 m/s k: 2,63 Vm: 9,3 m/s
E A: 11,1 m/s k: 2,50 Vm: 9,8 m/s	ESE A: 11,4 m/s k: 2,45 Vm: 10,1 m/s	SSE A: 11,3 m/s k: 2,45 Vm: 10,0 m/s	S A: 10,9 m/s k: 2,34 Vm: 9,7 m/s
SSW A: 11,8 m/s k: 2,39 Vm: 10,4 m/s	WSW A: 11,7 m/s k: 2,43 Vm: 10,4 m/s	W A: 11,4 m/s k: 2,35 Vm: 10,1 m/s	NNW A: 12,5 m/s k: 2,63 Vm: 11,1 m/s
			WNW A: 11,6 m/s k: 2,49 Vm: 10,3 m/s



Project:
Energy Island North Sea

Licensed user:
EMD International A/S
Niels Jernes Vej 10
DK-9220 Aalborg Ø
+45 6916 4850
Thomas Sørensen / ts@emd.dk
Calculated:
06/03/2024 10.33

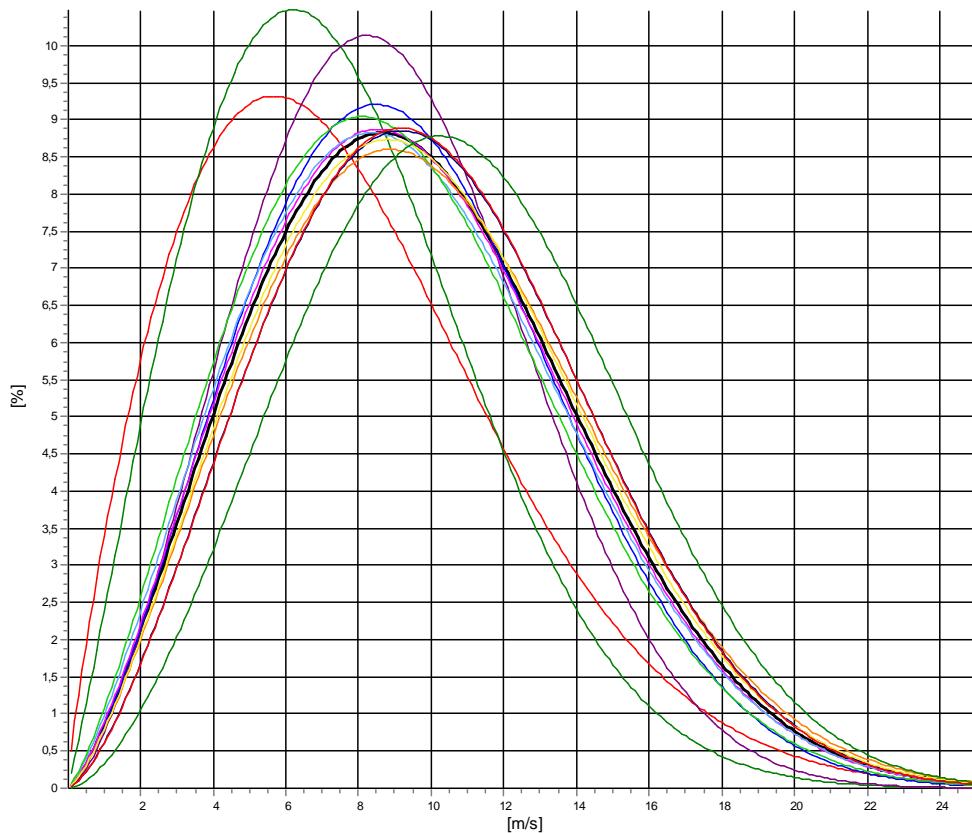
Meteo data report - Weibull data overview

Mast: Lot 1 LT 2y ; 20 year period **Period:** Full period: 01/01/2003 - 01/01/2023 (240,0 months)

Height: 40,00m - MCP LT - 2y 40m MCP session (1) - [Matrix]

Weibull data

Sector	A	k	f	Mean wind speed
	[m/s]			[m/s]
0-N	8,73	1,834	3,95	7,76
1-NNE	8,44	2,095	3,12	7,48
2-ENE	10,04	2,524	5,21	8,91
3-E	10,62	2,400	7,07	9,42
4-ESE	10,82	2,343	7,48	9,59
5-SSE	10,72	2,299	6,48	9,50
6-S	10,42	2,285	7,91	9,23
7-SSW	11,22	2,358	10,79	9,94
8-WSW	11,31	2,474	11,83	10,03
9-W	11,08	2,369	11,44	9,82
10-WNW	11,30	2,482	13,51	10,02
11>NNW	12,18	2,682	11,20	10,83
Mean	10,93	2,356	100,00	9,68



All A: 10,9 m/s k: 2,36 Vm: 9,7 m/s	N A: 8,7 m/s k: 1,83 Vm: 7,8 m/s	NNE A: 8,4 m/s k: 2,09 Vm: 7,5 m/s	ENE A: 10,0 m/s k: 2,52 Vm: 8,9 m/s
E A: 10,6 m/s k: 2,40 Vm: 9,4 m/s	ESE A: 10,8 m/s k: 2,34 Vm: 9,6 m/s	SSE A: 10,7 m/s k: 2,30 Vm: 9,5 m/s	S A: 10,4 m/s k: 2,29 Vm: 9,2 m/s
SSW A: 11,2 m/s k: 2,36 Vm: 9,9 m/s	WSW A: 11,3 m/s k: 2,47 Vm: 10,0 m/s	W A: 11,1 m/s k: 2,37 Vm: 9,8 m/s	WNW A: 11,3 m/s k: 2,48 Vm: 10,0 m/s
NNW A: 12,2 m/s k: 2,68 Vm: 10,8 m/s			



Project:
Energy Island North Sea

Licensed user:
EMD International A/S
Niels Jernes Vej 10
DK-9220 Aalborg Ø
+45 6916 4850
Thomas Sørensen / ts@emd.dk
Calculated:
06/03/2024 10.33

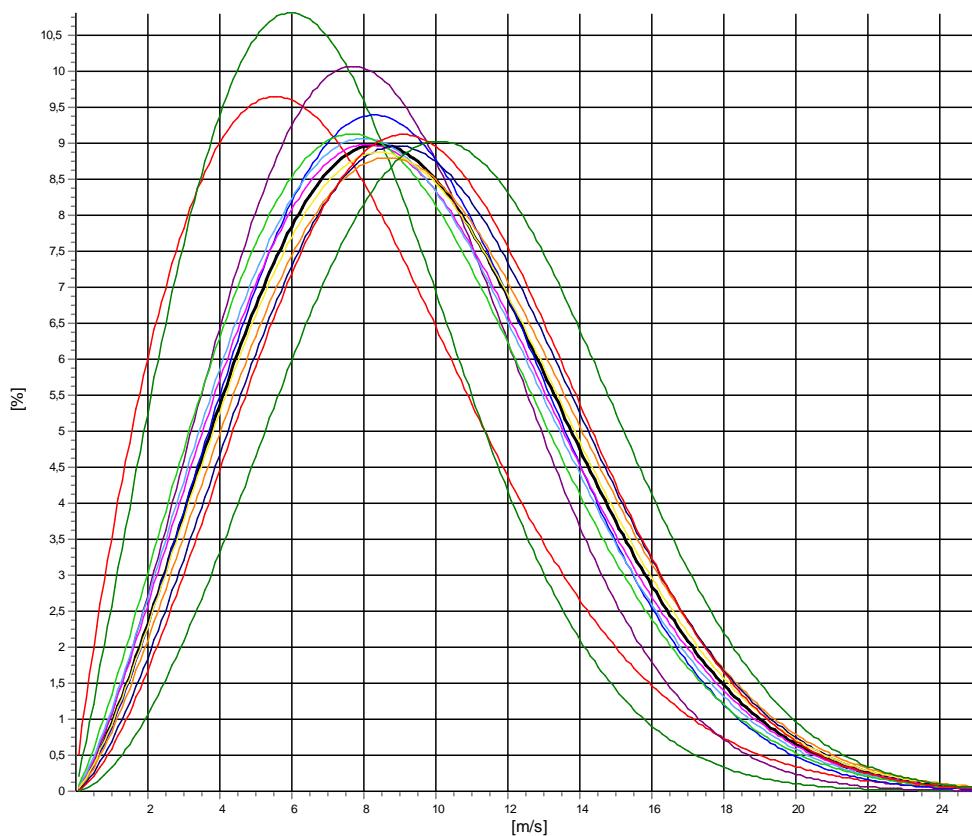
Meteo data report - Weibull data overview

Mast: Lot 1 LT 2y ; 20 year period **Period:** Full period: 01/01/2003 - 01/01/2023 (240,0 months)

Height: 30,00m - MCP LT - 2y 30m MCP session (1) - [Matrix]

Weibull data

Sector	A [m/s]	k	f	Mean wind speed [m/s]
0-N	8,47	1,848	3,91	7,52
1-NNE	8,17	2,090	3,15	7,24
2-ENE	9,67	2,388	5,24	8,57
3-E	10,40	2,395	7,12	9,22
4-ESE	10,46	2,278	7,36	9,27
5-SSE	10,34	2,270	6,50	9,16
6-S	10,07	2,211	8,05	8,92
7-SSW	10,98	2,361	10,62	9,73
8-WSW	11,07	2,445	11,79	9,82
9-W	10,77	2,327	11,64	9,54
10-WNW	11,12	2,514	13,47	9,87
11>NNW	11,95	2,713	11,14	10,63
Mean	10,65	2,333	100,00	9,44





Project:

Energy Island North Sea

Licensed user:

EMD International A/S

Niels Jernes Vej 10

DK-9220 Aalborg Ø

+45 6916 4850

Thomas Sørensen / ts@emd.dk

Calculated:

06/03/2024 10.36

Meteo data report - Frequency distribution (TAB file data)**Mast:** Lot 2 LT 2y ; 20 year period **Period:** Full period: 01/01/2003 - 01/01/2023 (240,0 months)**Frequency distribution (TAB file data)**

270,00m - MCP LT - 2y 270m MCP session (1) - [Matrix]															
Bin	Start	End	Sum	0-N	1-NNE	2-ENE	3-E	4-ESE	5-SSE	6-S	7-SSW	8-WSW	9-W	10-WNW	11>NNW
Mean	11,23	8,62	7,84	9,31	10,05	11,07	11,19	11,23	12,15	12,26	11,63	11,39	11,99		
0	0,49	300	32	21	24	12	10	29	28	31	27	14	30	42	
1	0,50	1,49	1428	138	140	159	87	110	137	78	118	139	144	117	61
2	1,50	2,49	3367	318	303	352	328	220	259	197	245	306	300	252	287
3	2,50	3,49	5592	409	403	535	441	417	360	419	465	450	583	641	469
4	3,50	4,49	7132	466	435	435	578	636	458	516	613	763	843	751	638
5	4,50	5,49	8685	648	608	492	470	545	535	704	817	922	1128	1092	724
6	5,50	6,49	10105	700	612	490	521	680	546	810	1057	1204	1293	1275	917
7	6,50	7,49	11116	561	452	504	754	896	668	988	1203	1409	1316	1407	958
8	7,50	8,49	11938	497	419	608	820	733	797	1031	1235	1462	1402	1707	1227
9	8,50	9,49	12356	476	408	808	890	775	747	888	1340	1346	1551	1759	1368
10	9,50	10,49	12554	408	340	774	973	851	795	939	1187	1348	1495	1970	1474
11	10,50	11,49	12096	296	290	733	745	1045	717	783	1142	1607	1505	1816	1417
12	11,50	12,49	11920	275	258	608	764	950	781	903	1245	1549	1468	1793	1326
13	12,50	13,49	10403	274	234	413	646	804	756	780	972	1435	1260	1497	1332
14	13,50	14,49	9717	352	169	410	425	797	616	604	1114	1407	1236	1405	1182
15	14,50	15,49	8883	303	162	331	355	790	630	578	940	1047	1091	1251	1405
16	15,50	16,49	7880	147	101	278	366	734	593	500	938	1036	1059	1137	991
17	16,50	17,49	6657	152	60	173	250	449	501	543	910	1004	880	863	872
18	17,50	18,49	5085	119	60	134	249	438	378	375	651	701	758	609	613
19	18,50	19,49	4411	78	40	91	237	327	283	333	531	732	537	526	696
20	19,50	20,49	3131	44	16	49	161	174	191	312	454	531	349	422	428
21	20,50	21,49	2922	35	11	52	121	126	244	280	468	571	366	320	328
22	21,50	22,49	2244	16	3	24	41	102	133	285	315	370	301	367	287
23	22,50	23,49	1901	7	2	13	19	97	116	148	371	391	265	226	246
24	23,50	24,49	968	8	5	8	17	61	34	58	151	225	134	118	149
25	24,50	25,49	791	11	4	3	9	36	23	46	173	181	121	82	102
26	25,50	26,49	626	3	1	1	6	8	8	41	128	157	151	62	60
27	26,50	27,49	368	0	4	1	2	10	6	18	104	105	57	29	32
28	27,50	28,49	253	2	1	0	0	4	2	14	66	71	62	16	15
29	28,50	29,49	146	0	0	0	2	1	1	8	23	55	30	12	14
30	29,50	30,49	139	0	0	0	0	0	0	4	24	43	47	13	8
31	30,50	31,49	79	0	1	0	0	0	0	3	8	24	22	14	7
32	31,50	32,49	48	0	0	0	0	0	0	1	4	13	17	11	2
33	32,50	33,49	27	0	0	0	0	0	0	0	4	9	8	4	2
34	33,50	34,49	25	0	0	0	0	0	0	0	0	6	11	7	1
35	34,50	35,49	10	0	0	0	0	0	0	0	2	4	4	0	0
36	35,50	36,49	5	0	0	0	0	0	0	0	0	1	1	3	0
37	36,50	37,49	5	0	0	0	0	0	0	0	0	2	0	0	0
38	37,50	38,49	2	0	0	0	0	0	0	0	0	2	0	0	0
39	38,50	39,49	2	0	0	0	0	0	0	0	0	2	0	0	0
40	39,50	40,49	1	0	0	0	0	0	0	0	0	0	1	0	0
41	40,50	2	0	0	0	0	0	0	0	0	0	2	0	0	0



Project:

Energy Island North Sea

Licensed user:

EMD International A/S

Niels Jernes Vej 10

DK-9220 Aalborg Ø

+45 6916 4850

Thomas Sørensen / ts@emd.dk

Calculated:

06/03/2024 10.36

Meteo data report - Frequency distribution (TAB file data)**Mast:** Lot 2 LT 2y ; 20 year period **Period:** Full period: 01/01/2003 - 01/01/2023 (240,0 months)**Frequency distribution (TAB file data)**

240,00m - MCP LT - 2y 240m MCP session (1) - [Matrix]															
Bin	Start	End	Sum	0-N	1-NNE	2-ENE	3-E	4-ESE	5-SSE	6-S	7-SSW	8-WSW	9-W	10-WNW	11>NNW
Mean	11,16	8,58	7,69	9,49	10,00	11,04	11,24	11,16	12,08	12,11	11,47	11,31	11,87		
0	0,49	294	28	36	13	16	11	26	27	25	28	19	38	27	
1	0,50	1,49	1449	118	168	148	115	95	121	90	145	133	135	118	
2	1,50	2,49	3428	317	322	310	323	249	243	214	257	329	295	288	
3	2,50	3,49	5535	381	429	502	463	433	344	408	395	489	580	630	
4	3,50	4,49	7279	459	424	429	594	553	500	542	592	811	880	828	
5	4,50	5,49	8659	680	601	459	533	559	487	705	850	916	1079	1074	
6	5,50	6,49	10313	705	609	510	599	683	571	812	1078	1260	1305	1220	
7	6,50	7,49	11270	551	486	440	703	932	681	973	1219	1387	1459	1447	
8	7,50	8,49	11727	514	420	651	777	722	728	987	1300	1440	1358	1646	
9	8,50	9,49	12687	482	441	733	938	847	764	960	1304	1386	1527	1881	
10	9,50	10,49	12496	409	403	804	912	798	807	913	1116	1362	1504	1981	
11	10,50	11,49	12346	285	266	737	894	1029	722	764	1239	1631	1571	1801	
12	11,50	12,49	11638	282	213	578	715	936	825	901	1189	1578	1392	1787	
13	12,50	13,49	10538	296	222	457	667	798	740	809	1098	1327	1217	1530	
14	13,50	14,49	10166	313	181	425	475	847	703	636	1165	1478	1302	1344	
15	14,50	15,49	8658	263	152	357	435	783	648	529	855	1055	1042	1336	
16	15,50	16,49	7996	203	78	274	349	663	593	575	1047	1017	1058	1098	
17	16,50	17,49	6553	131	77	208	222	477	522	541	785	1004	865	860	
18	17,50	18,49	5227	100	47	123	272	488	392	368	636	752	701	644	
19	18,50	19,49	3960	63	43	105	194	287	230	333	537	668	469	486	
20	19,50	20,49	3527	35	20	48	195	190	254	317	597	558	379	447	
21	20,50	21,49	2694	27	6	42	95	135	232	266	385	502	354	400	
22	21,50	22,49	2166	24	2	35	46	104	136	242	313	383	282	294	
23	22,50	23,49	1584	12	4	14	28	61	81	136	275	350	201	220	
24	23,50	24,49	1060	5	2	7	17	57	41	78	291	223	138	90	
25	24,50	25,49	554	5	3	5	5	28	20	36	99	104	116	75	
26	25,50	26,49	538	2	4	1	4	6	8	25	89	163	100	48	
27	26,50	27,49	328	2	1	1	3	8	5	19	72	103	63	20	
28	27,50	28,49	259	5	0	0	1	5	1	13	75	77	44	19	
29	28,50	29,49	156	0	0	0	0	0	1	5	28	51	50	10	
30	29,50	30,49	93	0	0	0	0	0	0	4	14	32	21	15	
31	30,50	31,49	62	0	1	0	0	0	0	1	9	13	20	7	
32	31,50	32,49	38	0	0	0	0	0	0	1	4	14	8	10	
33	32,50	33,49	26	0	0	0	0	0	0	0	2	5	11	6	
34	33,50	34,49	19	0	0	0	0	0	0	0	1	5	9	3	
35	34,50	35,49	6	0	0	0	0	0	0	0	1	1	4	0	
36	35,50	36,49	5	0	0	0	0	0	0	0	0	1	3	0	
37	36,50	37,49	3	0	0	0	0	0	0	0	1	2	0	0	
38	37,50	38,49	3	0	0	0	0	0	0	0	0	2	1	0	
39	38,50	39,49	0	0	0	0	0	0	0	0	0	0	0	0	
40	39,50	40,49	2	0	0	0	0	0	0	0	0	0	2	0	
41	40,50	0	0	0	0	0	0	0	0	0	0	0	0	0	



Project:

Energy Island North Sea

Licensed user:

EMD International A/S

Niels Jernes Vej 10

DK-9220 Aalborg Ø

+45 6916 4850

Thomas Sørensen / ts@emd.dk

Calculated:

06/03/2024 10.36

Meteo data report - Frequency distribution (TAB file data)**Mast:** Lot 2 LT 2y ; 20 year period **Period:** Full period: 01/01/2003 - 01/01/2023 (240,0 months)**Frequency distribution (TAB file data)**

200,00m - MCP LT - 2y 200m MCP session (1) - [Matrix]															
Bin	Start	End	Sum	0-N	1-NNE	2-ENE	3-E	4-ESE	5-SSE	6-S	7-SSW	8-WSW	9-W	10-WNW	11-NNW
Mean	11,01	8,48	7,75	9,44	9,94	11,01	11,18	11,00	11,89	11,91	11,24	11,12	11,70		
0	0,49	292	35	29	8	19	23	19	32	23	23	19	36	26	
1	0,50	1,49	1471	111	155	152	113	101	127	99	134	125	127	148	
2	1,50	2,49	3412	312	291	323	306	249	227	225	252	314	353	301	
3	2,50	3,49	5722	403	473	521	476	437	333	416	376	536	561	678	
4	3,50	4,49	7267	447	467	410	596	545	460	544	606	785	908	857	
5	4,50	5,49	8974	707	580	455	535	569	530	697	884	945	1154	1128	
6	5,50	6,49	10327	705	619	511	686	600	577	894	1091	1242	1244	1231	
7	6,50	7,49	11564	548	501	507	790	880	690	966	1262	1393	1519	1468	
8	7,50	8,49	11810	516	370	587	790	812	705	1018	1334	1429	1354	1674	
9	8,50	9,49	12549	502	489	762	871	800	733	993	1236	1322	1482	1972	
10	9,50	10,49	12635	395	371	753	920	866	879	960	1146	1400	1519	1912	
11	10,50	11,49	12903	268	291	802	943	1152	787	872	1237	1691	1605	1873	
12	11,50	12,49	11598	289	245	603	650	853	74	859	1211	1582	1379	1816	
13	12,50	13,49	11072	288	223	458	703	850	815	827	1209	1560	1317	1478	
14	13,50	14,49	10028	317	189	417	553	857	725	633	1152	1371	1195	1423	
15	14,50	15,49	8853	275	179	366	417	907	613	493	932	1036	1126	1253	
16	15,50	16,49	7927	191	77	268	270	631	638	570	999	1088	1006	1114	
17	16,50	17,49	6505	107	71	206	328	549	581	517	755	967	869	783	
18	17,50	18,49	5020	87	51	115	296	368	333	453	709	728	648	604	
19	18,50	19,49	3855	70	46	81	175	283	246	382	548	539	402	479	
20	19,50	20,49	3264	39	13	57	150	145	209	297	495	612	352	455	
21	20,50	21,49	2536	26	8	44	91	154	220	257	357	430	358	366	
22	21,50	22,49	1809	11	3	26	50	84	110	181	283	358	226	240	
23	22,50	23,49	1436	9	3	16	16	65	70	108	304	326	178	181	
24	23,50	24,49	822	1	5	4	18	66	23	52	135	136	154	100	
25	24,50	25,49	545	6	2	4	7	18	17	27	77	141	107	51	
26	25,50	26,49	393	7	2	1	2	5	7	30	104	91	67	30	
27	26,50	27,49	265	3	2	0	4	7	4	17	62	85	47	20	
28	27,50	28,49	185	0	0	0	1	3	0	8	46	67	28	14	
29	28,50	29,49	101	0	0	0	0	0	1	4	25	34	18	9	
30	29,50	30,49	72	0	0	0	0	1	1	2	9	16	24	13	
31	30,50	31,49	43	0	1	0	0	0	0	0	5	12	11	4	
32	31,50	32,49	23	0	0	0	0	0	0	0	3	6	7	6	
33	32,50	33,49	23	0	0	0	0	0	0	0	1	7	7	2	
34	33,50	34,49	5	0	0	0	0	0	0	0	0	2	3	0	
35	34,50	35,49	7	0	0	0	0	0	0	0	3	1	3	0	
36	35,50	36,49	6	0	0	0	0	0	0	0	1	3	2	0	
37	36,50	37,49	1	0	0	0	0	0	0	0	0	1	0	0	
38	37,50	38,49	0	0	0	0	0	0	0	0	0	0	0	0	
39	38,50	39,49	0	0	0	0	0	0	0	0	0	0	0	0	
40	39,50	40,49	0	0	0	0	0	0	0	0	0	0	0	0	
41	40,50	0	0	0	0	0	0	0	0	0	0	0	0	0	



Project:

Energy Island North Sea

Licensed user:

EMD International A/S

Niels Jernes Vej 10

DK-9220 Aalborg Ø

+45 6916 4850

Thomas Sørensen / ts@emd.dk

Calculated:

06/03/2024 10.36

Meteo data report - Frequency distribution (TAB file data)**Mast:** Lot 2 LT 2y ; 20 year period **Period:** Full period: 01/01/2003 - 01/01/2023 (240,0 months)**Frequency distribution (TAB file data)**

180,00m - MCP LT - 2y 180m MCP session (1) - [Matrix]															
Bin	Start	End	Sum	0-N	1-NNE	2-ENE	3-E	4-ESE	5-SSE	6-S	7-SSW	8-WSW	9-W	10-WNW	11-NNW
Mean			10,91	8,52	7,72	9,45	9,96	10,93	11,15	10,91	11,72	11,79	11,10	11,01	11,55
0	0,49	303	15	35	18	15	15	22	35	27	20	18	39	44	
1	0,50	1,49	1435	140	161	123	94	82	107	106	133	140	123	142	84
2	1,50	2,49	3481	308	290	299	301	274	228	217	266	278	373	343	304
3	2,50	3,49	5737	410	480	519	480	496	344	394	403	542	535	634	500
4	3,50	4,49	7323	463	463	428	562	575	459	540	610	809	919	834	661
5	4,50	5,49	8866	636	522	487	544	528	524	663	926	942	1124	1146	824
6	5,50	6,49	10774	696	633	560	702	626	594	893	1215	1193	1353	1323	986
7	6,50	7,49	11381	556	509	472	783	852	646	1027	1185	1406	1445	1443	1057
8	7,50	8,49	12159	476	393	653	751	863	719	1099	1280	1447	1394	1815	1269
9	8,50	9,49	12713	497	475	776	912	909	713	987	1244	1346	1522	1978	1354
10	9,50	10,49	12827	400	379	876	907	882	803	864	1203	1601	1577	1857	1478
11	10,50	11,49	13092	293	248	774	973	1070	832	959	1339	1705	1573	1888	1438
12	11,50	12,49	11506	283	249	574	696	838	914	871	1121	1551	1382	1721	1306
13	12,50	13,49	11360	307	240	487	695	861	865	812	1296	1662	1283	1481	1371
14	13,50	14,49	10158	344	238	434	643	891	691	664	1141	1271	1118	1403	1320
15	14,50	15,49	8458	245	140	330	357	857	656	445	895	1085	1068	1271	1109
16	15,50	16,49	8125	180	79	250	277	703	691	610	960	1181	1146	1084	964
17	16,50	17,49	6312	124	64	186	272	512	487	553	863	848	855	774	774
18	17,50	18,49	4904	75	44	126	322	334	334	451	671	692	545	618	692
19	18,50	19,49	3868	67	25	105	196	234	283	341	579	610	381	460	587
20	19,50	20,49	2972	24	20	74	129	195	203	266	463	555	335	392	316
21	20,50	21,49	2310	38	12	37	99	153	160	229	341	402	283	319	237
22	21,50	22,49	1914	23	6	27	26	85	107	172	315	313	271	299	270
23	22,50	23,49	1172	9	6	15	29	74	59	93	176	242	165	128	176
24	23,50	24,49	709	5	5	11	4	52	25	43	106	155	106	82	115
25	24,50	25,49	504	5	1	2	7	16	14	23	88	143	83	49	73
26	25,50	26,49	357	4	1	1	5	8	4	25	102	97	60	20	30
27	26,50	27,49	256	5	0	0	4	8	4	18	59	78	38	25	17
28	27,50	28,49	120	1	0	0	1	0	2	3	20	43	23	10	17
29	28,50	29,49	89	0	0	0	0	0	0	4	13	26	28	10	8
30	29,50	30,49	47	0	0	0	0	0	0	1	7	16	10	9	4
31	30,50	31,49	35	0	0	0	0	0	0	0	6	3	11	10	5
32	31,50	32,49	26	0	0	0	0	0	0	0	4	9	9	3	1
33	32,50	33,49	11	0	0	0	0	0	0	0	3	3	4	0	1
34	33,50	34,49	5	0	0	0	0	0	0	0	1	2	2	0	0
35	34,50	35,49	8	0	0	0	0	0	0	0	1	4	1	2	0
36	35,50	36,49	3	0	0	0	0	0	0	0	1	0	1	1	0
37	36,50	37,49	0	0	0	0	0	0	0	0	0	0	0	0	0
38	37,50	38,49	0	0	0	0	0	0	0	0	0	0	0	0	0
39	38,50	39,49	0	0	0	0	0	0	0	0	0	0	0	0	0
40	39,50	40,49	0	0	0	0	0	0	0	0	0	0	0	0	0
41	40,50	0	0	0	0	0	0	0	0	0	0	0	0	0	0



Project:

Energy Island North Sea

Licensed user:

EMD International A/S

Niels Jernes Vej 10

DK-9220 Aalborg Ø

+45 6916 4850

Thomas Sørensen / ts@emd.dk

Calculated:

06/03/2024 10.36

Meteo data report - Frequency distribution (TAB file data)**Mast:** Lot 2 LT 2y ; 20 year period **Period:** Full period: 01/01/2003 - 01/01/2023 (240,0 months)**Frequency distribution (TAB file data)**

150,00m - MCP LT - 2y 150m MCP session (1) - [Matrix]															
Bin	Start	End	Sum	0-N	1-NNE	2-ENE	3-E	4-ESE	5-SSE	6-S	7-SSW	8-WSW	9-W	10-WNW	11-NNW
0	0,49	255	32	31	31	13	3	22	19	15	25	13	30	21	
1	0,50	1,49	1521	168	108	114	108	91	144	173	112	122	134	141	106
2	1,50	2,49	3452	314	273	290	290	237	254	234	249	302	352	366	291
3	2,50	3,49	5787	440	447	495	536	472	346	413	340	526	555	712	505
4	3,50	4,49	7452	490	490	414	582	572	467	596	640	793	887	823	698
5	4,50	5,49	8945	616	476	497	597	548	498	683	875	955	1204	1124	872
6	5,50	6,49	10990	709	647	526	755	655	612	935	1222	1253	1378	1339	959
7	6,50	7,49	11576	538	552	501	823	805	703	1025	1287	1409	1483	1495	955
8	7,50	8,49	12116	493	418	709	854	828	762	979	1279	1354	1412	1828	1200
9	8,50	9,49	12004	463	394	643	876	803	731	976	1207	1304	1500	1828	1279
10	9,50	10,49	13597	431	496	829	986	913	803	951	1211	1712	1586	2046	1633
11	10,50	11,49	13108	328	249	681	888	1117	929	989	1416	1612	1515	1929	1455
12	11,50	12,49	12785	282	300	653	805	993	969	907	1259	1811	1593	1819	1394
13	12,50	13,49	11478	255	271	536	718	854	836	800	1291	1591	1390	1545	1391
14	13,50	14,49	9862	336	232	396	571	959	729	651	1079	1263	1177	1309	1160
15	14,50	15,49	9259	253	198	436	328	896	637	667	1021	1147	1252	1258	1166
16	15,50	16,49	8103	182	119	296	357	700	650	630	943	1152	1000	1071	1003
17	16,50	17,49	5895	105	55	167	321	403	448	496	831	857	694	764	754
18	17,50	18,49	4492	59	35	140	248	405	320	310	701	707	467	550	550
19	18,50	19,49	3432	82	16	83	141	278	278	349	558	561	312	317	457
20	19,50	20,49	2928	39	8	88	159	143	171	333	396	502	361	375	353
21	20,50	21,49	2166	25	12	37	71	90	130	157	330	369	296	373	276
22	21,50	22,49	1557	6	7	17	21	77	76	139	212	299	241	227	235
23	22,50	23,49	893	5	4	14	18	69	41	51	161	176	111	106	137
24	23,50	24,49	571	7	2	5	12	42	15	39	107	124	79	53	86
25	24,50	25,49	347	4	2	1	13	9	10	22	62	91	41	45	47
26	25,50	26,49	312	2	0	0	3	9	5	21	96	72	44	35	25
27	26,50	27,49	156	1	0	0	2	3	4	11	34	44	32	16	9
28	27,50	28,49	116	8	0	1	0	1	1	2	21	31	22	10	19
29	28,50	29,49	69	0	0	1	0	0	0	2	7	18	16	15	10
30	29,50	30,49	46	0	1	0	0	0	0	1	5	8	17	9	5
31	30,50	31,49	22	0	0	0	0	0	0	0	1	9	6	2	4
32	31,50	32,49	16	0	0	0	0	0	0	0	2	2	9	1	2
33	32,50	33,49	6	0	0	0	0	0	0	0	1	0	2	2	1
34	33,50	34,49	2	0	0	0	0	0	0	0	0	0	1	1	0
35	34,50	35,49	1	0	0	0	0	0	0	0	0	0	1	0	0
36	35,50	36,49	1	0	0	0	0	0	0	0	0	0	1	0	0
37	36,50	37,49	1	0	0	0	0	0	0	0	1	0	0	0	0
38	37,50	38,49	0	0	0	0	0	0	0	0	0	0	0	0	0
39	38,50	39,49	0	0	0	0	0	0	0	0	0	0	0	0	0
40	39,50	40,49	0	0	0	0	0	0	0	0	0	0	0	0	0
41	40,50		1	0	0	0	0	0	0	0	0	1	0	0	0



Project:

Energy Island North Sea

Licensed user:

EMD International A/S

Niels Jernes Vej 10

DK-9220 Aalborg Ø

+45 6916 4850

Thomas Sørensen / ts@emd.dk

Calculated:

06/03/2024 10.36

Meteo data report - Frequency distribution (TAB file data)**Mast:** Lot 2 LT 2y ; 20 year period **Period:** Full period: 01/01/2003 - 01/01/2023 (240,0 months)**Frequency distribution (TAB file data)**

120,00m - MCP LT - 2y 120m MCP session (1) - [Matrix]															
Bin	Start	End	Sum	0-N	1-NNE	2-ENE	3-E	4-ESE	5-SSE	6-S	7-SSW	8-WSW	9-W	10-WNW	11-NNW
Mean			10,56	8,27	7,92	9,46	9,84	10,68	10,70	10,40	11,35	11,29	10,67	10,61	11,23
0	0,49	245	34	14	17	2	23	20	22	24	21	14	22	32	
1	0,50	1,49	1535	142	133	133	83	106	92	142	144	125	138	174	
2	1,50	2,49	3548	289	254	310	280	269	281	253	269	360	315	415	
3	2,50	3,49	5719	390	432	452	461	484	375	462	372	569	543	701	
4	3,50	4,49	7453	569	460	458	552	557	434	538	545	812	909	867	
5	4,50	5,49	9638	685	490	527	686	499	481	847	1026	1035	1208	1176	
6	5,50	6,49	10845	716	630	576	750	694	567	959	1185	1140	1323	1370	
7	6,50	7,49	11734	570	530	592	870	824	700	1066	1140	1356	1553	1499	
8	7,50	8,49	12376	491	410	636	910	874	769	1061	1267	1309	1455	2003	
9	8,50	9,49	13118	463	487	671	892	916	763	1021	1257	1513	1660	2058	
10	9,50	10,49	13638	398	446	868	986	1011	835	984	1298	1723	1598	1919	
11	10,50	11,49	13755	354	238	723	901	1094	1083	985	1401	1837	1612	2093	
12	11,50	12,49	13107	244	336	710	957	1014	1126	890	1471	1745	1460	1756	
13	12,50	13,49	11776	326	259	593	842	874	732	875	1405	1545	1404	1532	
14	13,50	14,49	10201	340	220	394	526	945	809	673	1219	1375	1230	1312	
15	14,50	15,49	9005	213	150	391	368	826	645	669	1001	1271	1123	1152	
16	15,50	16,49	7466	156	121	321	253	621	525	622	994	1068	905	995	
17	16,50	17,49	5529	119	51	192	362	452	391	467	776	726	623	701	
18	17,50	18,49	4143	64	29	91	243	292	240	368	647	688	406	492	
19	18,50	19,49	2978	37	18	76	162	210	193	270	382	469	359	374	
20	19,50	20,49	2433	42	11	75	123	121	178	213	314	403	302	337	
21	20,50	21,49	1818	28	6	28	50	99	78	156	299	327	235	235	
22	21,50	22,49	1208	11	5	19	32	76	53	53	178	193	187	182	
23	22,50	23,49	763	7	1	20	19	48	31	44	131	134	98	88	
24	23,50	24,49	417	3	3	2	10	29	18	34	86	96	30	54	
25	24,50	25,49	353	6	2	2	8	13	13	20	63	86	52	33	
26	25,50	26,49	199	3	0	1	3	7	2	11	42	49	29	23	
27	26,50	27,49	132	1	0	0	1	2	2	5	31	37	24	13	
28	27,50	28,49	81	0	0	0	2	0	0	5	12	21	22	11	
29	28,50	29,49	46	0	0	0	0	0	0	0	5	11	12	6	
30	29,50	30,49	26	0	0	0	0	0	0	0	0	6	7	9	
31	30,50	31,49	15	0	0	0	0	0	0	0	1	5	4	1	
32	31,50	32,49	8	0	0	0	0	0	0	0	2	1	4	0	
33	32,50	33,49	6	0	0	0	0	0	0	0	0	1	2	1	
34	33,50	34,49	1	0	0	0	0	0	0	0	0	0	1	0	
35	34,50	35,49	4	0	0	0	0	0	0	0	1	0	2	0	
36	35,50	36,49	0	0	0	0	0	0	0	0	0	0	0	0	
37	36,50	37,49	1	0	0	0	0	0	0	0	0	1	0	0	
38	37,50	38,49	0	0	0	0	0	0	0	0	0	0	0	0	
39	38,50	39,49	0	0	0	0	0	0	0	0	0	0	0	0	
40	39,50	40,49	0	0	0	0	0	0	0	0	0	0	0	0	
41	40,50	0	0	0	0	0	0	0	0	0	0	0	0	0	



Project:

Energy Island North Sea

Licensed user:

EMD International A/S

Niels Jernes Vej 10

DK-9220 Aalborg Ø

+45 6916 4850

Thomas Sørensen / ts@emd.dk

Calculated:

06/03/2024 10.36

Meteo data report - Frequency distribution (TAB file data)**Mast:** Lot 2 LT 2y ; 20 year period **Period:** Full period: 01/01/2003 - 01/01/2023 (240,0 months)**Frequency distribution (TAB file data)**

100,00m - MCP LT - 2y 100m MCP session (1) - [Matrix]															
Bin	Start	End	Sum	0-N	1-NNE	2-ENE	3-E	4-ESE	5-SSE	6-S	7-SSW	8-WSW	9-W	10-WNW	11-NNW
Mean	10,39	8,17	7,96	9,38	9,70	10,60	10,42	10,20	11,15	11,03	10,46	10,48	11,10		
0	0,49	234	42	8	3	14	10	24	32	20	22	16	25	18	
1	0,50	1,49	1591	154	114	125	87	97	112	139	135	164	157	158	
2	1,50	2,49	3600	286	278	304	278	243	271	272	285	364	330	410	
3	2,50	3,49	5844	410	427	453	479	480	386	476	381	584	541	741	
4	3,50	4,49	7630	527	493	458	579	576	477	592	580	821	905	880	
5	4,50	5,49	9756	714	521	509	666	552	505	819	1006	1025	1277	1160	
6	5,50	6,49	11071	742	598	626	804	642	654	973	1165	1160	1345	1382	
7	6,50	7,49	12279	582	510	597	892	806	747	1184	1259	1399	1643	1640	
8	7,50	8,49	12653	490	420	675	929	923	860	1049	1250	1353	1468	2008	
9	8,50	9,49	13466	502	508	796	882	922	816	1068	1295	1644	1644	1975	
10	9,50	10,49	14248	375	430	832	1088	1083	916	1016	1334	1794	1678	2091	
11	10,50	11,49	14150	326	283	713	943	1237	1192	1004	1464	1995	1544	2016	
12	11,50	12,49	13043	297	367	701	958	1015	962	939	1591	1661	1527	1710	
13	12,50	13,49	11453	291	267	683	806	795	694	742	1412	1522	1361	1545	
14	13,50	14,49	9944	297	207	337	618	939	737	678	1036	1365	1224	1306	
15	14,50	15,49	8822	233	179	327	247	748	615	624	1125	1356	1078	1121	
16	15,50	16,49	7071	154	126	334	292	608	505	683	971	866	786	930	
17	16,50	17,49	5366	96	52	152	324	438	388	445	772	730	569	654	
18	17,50	18,49	3701	59	26	83	189	273	208	345	532	558	401	474	
19	18,50	19,49	2907	39	19	109	215	205	210	254	305	535	301	339	
20	19,50	20,49	2198	33	8	55	99	121	133	147	331	361	276	325	
21	20,50	21,49	1541	20	5	30	43	79	72	142	190	228	253	225	
22	21,50	22,49	1066	19	0	17	16	85	34	45	222	143	115	159	
23	22,50	23,49	634	7	6	3	15	50	23	41	110	116	84	83	
24	23,50	24,49	380	3	2	1	9	18	24	32	58	85	38	41	
25	24,50	25,49	255	8	1	1	6	9	5	15	46	45	43	38	
26	25,50	26,49	154	1	0	0	5	3	4	7	37	42	20	16	
27	26,50	27,49	114	1	0	0	0	3	0	4	21	34	25	14	
28	27,50	28,49	67	0	0	0	0	0	0	2	7	11	20	15	
29	28,50	29,49	38	0	0	0	0	0	0	0	3	12	7	10	
30	29,50	30,49	17	0	0	0	0	0	0	0	1	3	6	5	
31	30,50	31,49	15	0	0	0	0	0	0	0	2	3	7	2	
32	31,50	32,49	5	0	0	0	0	0	0	0	0	1	2	1	
33	32,50	33,49	3	0	0	0	0	0	0	0	0	0	0	2	
34	33,50	34,49	1	0	0	0	0	0	0	0	1	0	0	0	
35	34,50	35,49	2	0	0	0	0	0	0	0	0	0	2	0	
36	35,50	36,49	1	0	0	0	0	0	0	0	0	1	0	0	
37	36,50	37,49	0	0	0	0	0	0	0	0	0	0	0	0	
38	37,50	38,49	0	0	0	0	0	0	0	0	0	0	0	0	
39	38,50	39,49	0	0	0	0	0	0	0	0	0	0	0	0	
40	39,50	40,49	0	0	0	0	0	0	0	0	0	0	0	0	
41	40,50	0	0	0	0	0	0	0	0	0	0	0	0	0	



Project:

Energy Island North Sea

Licensed user:

EMD International A/S

Niels Jernes Vej 10

DK-9220 Aalborg Ø

+45 6916 4850

Thomas Sørensen / ts@emd.dk

Calculated:

06/03/2024 10.36

Meteo data report - Frequency distribution (TAB file data)**Mast:** Lot 2 LT 2y ; 20 year period **Period:** Full period: 01/01/2003 - 01/01/2023 (240,0 months)**Frequency distribution (TAB file data)**

90,00m - MCP LT - 2y 90m MCP session (1) - [Matrix]

Bin	Start	End	Sum	0-N	1-NNE	2-ENE	3-E	4-ESE	5-SSE	6-S	7-SSW	8-WSW	9-W	10-WNW	11-NNW
Mean	10,30	8,09	7,91	9,29	9,63	10,49	10,19	10,16	11,00	10,90	10,41	10,42	11,03		
0	0,49	216	29	16	1	13	14	32	16	12	19	11	31	22	
1	0,50	1,49	1584	168	118	107	108	58	116	119	158	172	154	167	139
2	1,50	2,49	3709	296	296	334	293	258	268	288	283	365	312	429	287
3	2,50	3,49	5851	419	430	463	485	472	423	458	376	565	548	729	483
4	3,50	4,49	7698	507	441	475	560	579	473	628	570	873	959	873	760
5	4,50	5,49	9983	725	481	525	659	629	554	828	1060	1039	1273	1194	1016
6	5,50	6,49	11265	713	582	592	796	685	700	1006	1199	1257	1359	1375	1001
7	6,50	7,49	12536	569	569	665	925	832	842	1234	1288	1364	1603	1633	1012
8	7,50	8,49	13004	557	408	714	901	949	918	1131	1229	1379	1495	2065	1258
9	8,50	9,49	13690	522	540	853	912	836	883	990	1319	1670	1647	2074	1444
10	9,50	10,49	14409	403	367	892	1156	1122	963	1090	1412	1902	1643	1914	1545
11	10,50	11,49	14259	277	290	755	982	1235	1213	1020	1601	1905	1582	2004	1395
12	11,50	12,49	12927	300	323	670	935	953	873	963	1606	1689	1525	1760	1330
13	12,50	13,49	11072	276	275	619	713	819	654	701	1316	1437	1401	1471	1390
14	13,50	14,49	9912	280	255	372	520	841	653	704	1084	1396	1209	1266	1332
15	14,50	15,49	8820	203	164	367	321	755	591	673	1036	1332	1120	1163	1095
16	15,50	16,49	6946	127	94	218	304	659	496	654	935	826	852	979	802
17	16,50	17,49	4807	112	42	131	236	309	357	456	700	685	480	592	707
18	17,50	18,49	3604	57	33	136	282	290	181	287	485	556	367	407	523
19	18,50	19,49	2771	35	13	88	174	236	219	271	317	429	268	321	400
20	19,50	20,49	2405	51	5	72	80	104	124	188	342	435	305	373	326
21	20,50	21,49	1347	21	4	21	46	74	55	110	167	144	232	279	194
22	21,50	22,49	957	10	1	15	21	78	47	54	208	159	111	115	138
23	22,50	23,49	570	5	6	4	12	51	28	43	74	90	63	70	124
24	23,50	24,49	365	6	1	1	11	11	15	23	44	85	56	36	76
25	24,50	25,49	240	4	1	1	8	4	5	14	51	59	36	32	25
26	25,50	26,49	150	1	0	0	5	0	2	9	39	34	26	15	19
27	26,50	27,49	102	1	0	0	0	0	2	0	3	18	25	25	17
28	27,50	28,49	54	0	0	0	0	2	0	2	6	14	11	12	7
29	28,50	29,49	31	0	0	0	0	0	0	0	1	7	11	9	3
30	29,50	30,49	13	0	0	0	0	0	0	0	0	2	5	3	3
31	30,50	31,49	12	0	0	0	0	0	0	0	2	3	4	2	1
32	31,50	32,49	5	0	0	0	0	0	0	0	0	1	2	1	1
33	32,50	33,49	1	0	0	0	0	0	0	0	0	0	0	0	1
34	33,50	34,49	3	0	0	0	0	0	0	0	1	0	1	1	0
35	34,50	35,49	1	0	0	0	0	0	0	0	0	0	1	0	0
36	35,50	36,49	1	0	0	0	0	0	0	0	0	1	0	0	0
37	36,50	37,49	0	0	0	0	0	0	0	0	0	0	0	0	0
38	37,50	38,49	0	0	0	0	0	0	0	0	0	0	0	0	0
39	38,50	39,49	0	0	0	0	0	0	0	0	0	0	0	0	0
40	39,50	40,49	0	0	0	0	0	0	0	0	0	0	0	0	0
41	40,50	0	0	0	0	0	0	0	0	0	0	0	0	0	0



Project:

Energy Island North Sea

Licensed user:

EMD International A/S

Niels Jernes Vej 10

DK-9220 Aalborg Ø

+45 6916 4850

Thomas Sørensen / ts@emd.dk

Calculated:

06/03/2024 10.36

Meteo data report - Frequency distribution (TAB file data)**Mast:** Lot 2 LT 2y ; 20 year period **Period:** Full period: 01/01/2003 - 01/01/2023 (240,0 months)**Frequency distribution (TAB file data)**

60,00m - MCP LT - 2y 60m MCP session (1) - [Matrix]

Bin	Start	End	Sum	0-N	1-NNE	2-ENE	3-E	4-ESE	5-SSE	6-S	7-SSW	8-WSW	9-W	10-WNW	11-NNW
0	0,49	271	28	25	10	13	12	35	27	33	17	19	31	21	
1	0,50	1,49	1690	173	155	118	108	88	91	129	145	195	187	165	136
2	1,50	2,49	3710	287	305	364	277	236	294	297	279	300	348	421	302
3	2,50	3,49	6123	399	411	428	552	482	411	550	410	608	693	707	472
4	3,50	4,49	8209	579	459	455	599	676	597	641	690	873	914	979	747
5	4,50	5,49	10144	745	543	569	718	636	563	853	1065	1142	1257	1138	915
6	5,50	6,49	12364	789	655	701	836	802	777	1158	1358	1230	1544	1477	1037
7	6,50	7,49	13700	655	526	703	997	925	945	1306	1417	1461	1722	1790	1253
8	7,50	8,49	14015	529	464	816	1120	965	1006	1261	1386	1506	1641	2133	1188
9	8,50	9,49	14837	494	568	814	1040	962	1023	1215	1514	1921	1786	2032	1468
10	9,50	10,49	15803	421	454	1044	1338	1273	1176	1115	1745	1877	1717	2059	1584
11	10,50	11,49	14552	273	405	976	979	1111	993	1019	1607	1892	1721	2036	1540
12	11,50	12,49	11785	315	299	628	753	918	709	866	1389	1591	1382	1546	1389
13	12,50	13,49	10627	287	260	529	638	810	622	795	1144	1504	1271	1473	1294
14	13,50	14,49	9562	317	216	321	382	812	542	707	1170	1378	1236	1319	1162
15	14,50	15,49	7405	157	95	239	241	702	505	595	992	1006	962	1007	904
16	15,50	16,49	6098	104	66	204	317	458	445	512	810	824	713	862	783
17	16,50	17,49	4301	118	50	122	260	284	281	278	595	616	444	572	681
18	17,50	18,49	3149	73	19	80	206	249	154	265	417	459	361	412	454
19	18,50	19,49	2319	22	7	55	104	126	173	216	279	372	248	365	352
20	19,50	20,49	1779	29	7	39	98	101	95	103	247	238	236	310	276
21	20,50	21,49	1137	14	4	20	61	90	49	91	144	186	127	174	177
22	21,50	22,49	700	6	2	12	19	55	37	48	114	106	90	89	122
23	22,50	23,49	439	5	1	0	10	29	14	41	54	89	59	52	85
24	23,50	24,49	244	3	1	1	5	16	4	17	35	55	45	25	37
25	24,50	25,49	164	7	0	1	2	4	1	11	19	37	29	23	30
26	25,50	26,49	81	1	0	0	3	1	1	8	12	8	23	13	11
27	26,50	27,49	49	1	0	0	0	1	0	2	3	10	8	11	13
28	27,50	28,49	24	0	0	0	0	0	0	0	2	6	7	6	3
29	28,50	29,49	18	0	0	0	0	0	0	0	1	5	7	5	0
30	29,50	30,49	11	0	0	0	0	0	0	0	1	2	5	2	1
31	30,50	31,49	6	0	0	0	0	0	0	0	0	2	2	0	2
32	31,50	32,49	2	0	0	0	0	0	0	0	1	0	0	0	1
33	32,50	33,49	2	0	0	0	0	0	0	0	0	1	1	0	0
34	33,50	34,49	0	0	0	0	0	0	0	0	0	0	0	0	0
35	34,50	35,49	0	0	0	0	0	0	0	0	0	0	0	0	0
36	35,50	36,49	0	0	0	0	0	0	0	0	0	0	0	0	0
37	36,50	37,49	0	0	0	0	0	0	0	0	0	0	0	0	0
38	37,50	38,49	0	0	0	0	0	0	0	0	0	0	0	0	0
39	38,50	39,49	0	0	0	0	0	0	0	0	0	0	0	0	0
40	39,50	40,49	0	0	0	0	0	0	0	0	0	0	0	0	0
41	40,50	0	0	0	0	0	0	0	0	0	0	0	0	0	0



Project:

Energy Island North Sea

Licensed user:

EMD International A/S

Niels Jernes Vej 10

DK-9220 Aalborg Ø

+45 6916 4850

Thomas Sørensen / ts@emd.dk

Calculated:

06/03/2024 10.36

Meteo data report - Frequency distribution (TAB file data)**Mast:** Lot 2 LT 2y ; 20 year period **Period:** Full period: 01/01/2003 - 01/01/2023 (240,0 months)**Frequency distribution (TAB file data)**

40,00m - MCP LT - 2y 40m MCP session (1) - [Matrix]

Bin	Start	End	Sum	0-N	1-NNE	2-ENE	3-E	4-ESE	5-SSE	6-S	7-SSW	8-WSW	9-W	10-WNW	11-NNW
0	0,49	319	26	19	16	23	6	30	32	33	49	27	33	25	
1	0,50	1,49	1806	155	174	139	131	91	88	170	142	210	186	161	159
2	1,50	2,49	3975	283	360	367	267	272	308	346	311	312	404	420	325
3	2,50	3,49	6494	428	422	433	590	523	455	532	453	678	740	776	464
4	3,50	4,49	8769	624	504	528	636	718	607	703	782	962	959	930	816
5	4,50	5,49	10969	765	566	621	777	684	685	915	1179	1251	1347	1279	900
6	5,50	6,49	13356	821	688	778	859	917	993	1359	1434	1326	1616	1495	1072
7	6,50	7,49	14741	588	502	795	1214	1174	1032	1489	1451	1604	1714	1885	1293
8	7,50	8,49	15153	508	489	1013	1153	1102	1072	1309	1573	1672	1718	2254	1290
9	8,50	9,49	15897	532	676	927	1246	1052	1106	1250	1643	2008	1794	2097	1566
10	9,50	10,49	15665	380	474	1115	1148	1243	1101	1073	1786	1873	1770	2151	1551
11	10,50	11,49	13577	285	326	785	934	972	767	904	1552	1839	1705	1958	1550
12	11,50	12,49	11353	288	333	537	667	783	606	850	1337	1453	1412	1569	1518
13	12,50	13,49	10275	259	249	385	542	792	571	782	1174	1549	1288	1408	1276
14	13,50	14,49	8901	286	162	262	316	775	547	667	1112	1259	1172	1220	1123
15	14,50	15,49	6867	158	91	222	268	668	489	508	864	923	895	933	848
16	15,50	16,49	5399	131	41	146	328	373	347	469	726	730	557	761	790
17	16,50	17,49	3545	76	28	97	248	269	232	217	422	538	382	515	521
18	17,50	18,49	2898	55	11	69	175	180	194	248	383	443	279	390	471
19	18,50	19,49	2089	36	5	63	98	143	121	142	298	230	259	364	330
20	19,50	20,49	1411	13	4	23	72	104	70	75	172	222	169	224	263
21	20,50	21,49	773	11	1	15	31	72	45	46	100	86	119	116	131
22	21,50	22,49	444	12	1	0	18	30	18	41	67	68	58	44	87
23	22,50	23,49	279	7	2	0	5	12	8	15	42	59	52	35	42
24	23,50	24,49	162	4	0	2	6	12	1	11	20	40	32	15	19
25	24,50	25,49	79	1	0	0	2	2	2	9	10	6	24	12	11
26	25,50	26,49	53	1	0	0	1	2	0	0	3	10	8	15	13
27	26,50	27,49	30	0	0	0	0	0	0	0	2	6	9	8	5
28	27,50	28,49	20	0	0	0	0	0	0	0	2	6	6	6	0
29	28,50	29,49	12	0	0	0	0	0	0	0	0	4	5	2	1
30	29,50	30,49	5	0	0	0	0	0	0	0	1	0	1	0	3
31	30,50	31,49	0	0	0	0	0	0	0	0	0	0	0	0	0
32	31,50	32,49	2	0	0	0	0	0	0	0	0	1	1	0	0
33	32,50	33,49	0	0	0	0	0	0	0	0	0	0	0	0	0
34	33,50	34,49	0	0	0	0	0	0	0	0	0	0	0	0	0
35	34,50	35,49	0	0	0	0	0	0	0	0	0	0	0	0	0
36	35,50	36,49	0	0	0	0	0	0	0	0	0	0	0	0	0
37	36,50	37,49	0	0	0	0	0	0	0	0	0	0	0	0	0
38	37,50	38,49	0	0	0	0	0	0	0	0	0	0	0	0	0
39	38,50	39,49	0	0	0	0	0	0	0	0	0	0	0	0	0
40	39,50	40,49	0	0	0	0	0	0	0	0	0	0	0	0	0
41	40,50	0	0	0	0	0	0	0	0	0	0	0	0	0	0



Project:

Energy Island North Sea

Licensed user:

EMD International A/S

Niels Jernes Vej 10

DK-9220 Aalborg Ø

+45 6916 4850

Thomas Sørensen / ts@emd.dk

Calculated:

06/03/2024 10.36

Meteo data report - Frequency distribution (TAB file data)**Mast:** Lot 2 LT 2y ; 20 year period **Period:** Full period: 01/01/2003 - 01/01/2023 (240,0 months)**Frequency distribution (TAB file data)**

30,00m - MCP LT - 2y 30m MCP session (1) - [Matrix]

Bin	Start	End	Sum	0-N	1-NNE	2-ENE	3-E	4-ESE	5-SSE	6-S	7-SSW	8-WSW	9-W	10-WNW	11-NNW
Mean			9,35	7,52	7,24	8,30	8,72	9,44	9,04	9,03	9,80	9,87	9,53	9,74	10,29
0	0,49	266	17	17	12	26	7	27	26	21	38	22	32	21	
1	0,50	1,49	1743	131	163	128	126	101	98	129	126	193	158	195	195
2	1,50	2,49	4266	338	327	405	339	319	319	340	351	366	383	469	310
3	2,50	3,49	6733	466	469	497	565	532	390	498	526	665	753	825	547
4	3,50	4,49	9053	564	497	549	727	669	602	715	953	975	1052	930	820
5	4,50	5,49	12064	831	623	751	742	765	824	1206	1258	1236	1420	1350	1058
6	5,50	6,49	13884	865	693	785	1048	1010	1027	1485	1424	1481	1617	1443	1006
7	6,50	7,49	15331	653	548	873	1183	1192	1168	1441	1548	1612	1851	1961	1301
8	7,50	8,49	15808	532	530	1111	1246	1007	1138	1287	1573	1912	1765	2297	1410
9	8,50	9,49	16142	473	663	964	1092	1163	1237	1256	1808	2053	1853	2019	1561
10	9,50	10,49	15233	399	460	970	1216	1309	934	1002	1566	1820	1802	2227	1528
11	10,50	11,49	13545	304	305	755	846	1004	784	951	1572	1745	1565	2107	1607
12	11,50	12,49	11146	292	236	539	636	730	562	898	1319	1589	1415	1570	1360
13	12,50	13,49	9777	301	230	369	461	703	515	756	1050	1372	1240	1474	1306
14	13,50	14,49	8516	180	140	198	342	722	532	630	1098	1188	1151	1248	1087
15	14,50	15,49	6492	121	72	214	288	478	424	538	817	850	724	1008	958
16	15,50	16,49	4781	116	50	159	254	416	339	309	604	717	535	588	694
17	16,50	17,49	3439	57	24	102	275	296	183	227	498	465	370	430	512
18	17,50	18,49	2629	28	10	78	137	173	182	232	341	374	283	380	411
19	18,50	19,49	1857	40	7	42	82	82	85	106	236	238	268	364	307
20	19,50	20,49	1101	8	1	23	45	82	64	84	161	155	151	163	164
21	20,50	21,49	649	7	3	8	26	63	19	42	67	104	91	81	138
22	21,50	22,49	379	5	0	8	8	38	12	28	54	73	58	26	69
23	22,50	23,49	227	7	2	1	8	17	6	12	37	40	30	21	46
24	23,50	24,49	105	1	0	0	1	4	2	11	8	16	23	25	14
25	24,50	25,49	71	1	0	0	0	1	2	2	1	7	21	18	11
26	25,50	26,49	40	0	0	0	0	0	0	0	6	10	6	11	7
27	26,50	27,49	27	0	0	0	0	0	0	0	0	7	11	7	2
28	27,50	28,49	7	1	0	0	0	0	0	0	0	2	1	2	1
29	28,50	29,49	3	0	0	0	0	0	0	0	0	1	0	1	0
30	29,50	30,49	4	0	0	0	0	0	0	0	0	0	2	0	2
31	30,50	31,49	0	0	0	0	0	0	0	0	0	0	0	0	0
32	31,50	32,49	1	0	0	0	0	0	0	0	0	1	0	0	0
33	32,50	33,49	0	0	0	0	0	0	0	0	0	0	0	0	0
34	33,50	34,49	0	0	0	0	0	0	0	0	0	0	0	0	0
35	34,50	35,49	0	0	0	0	0	0	0	0	0	0	0	0	0
36	35,50	36,49	0	0	0	0	0	0	0	0	0	0	0	0	0
37	36,50	37,49	1	0	0	0	0	0	0	0	0	0	1	0	0
38	37,50	38,49	0	0	0	0	0	0	0	0	0	0	0	0	0
39	38,50	39,49	0	0	0	0	0	0	0	0	0	0	0	0	0
40	39,50	40,49	0	0	0	0	0	0	0	0	0	0	0	0	0
41	40,50	0	0	0	0	0	0	0	0	0	0	0	0	0	0



Project:
Energy Island North Sea

Licensed user:
EMD International A/S
Niels Jernes Vej 10
DK-9220 Aalborg Ø
+45 6916 4850
Thomas Sørensen / ts@emd.dk
Calculated:
06/03/2024 10.36

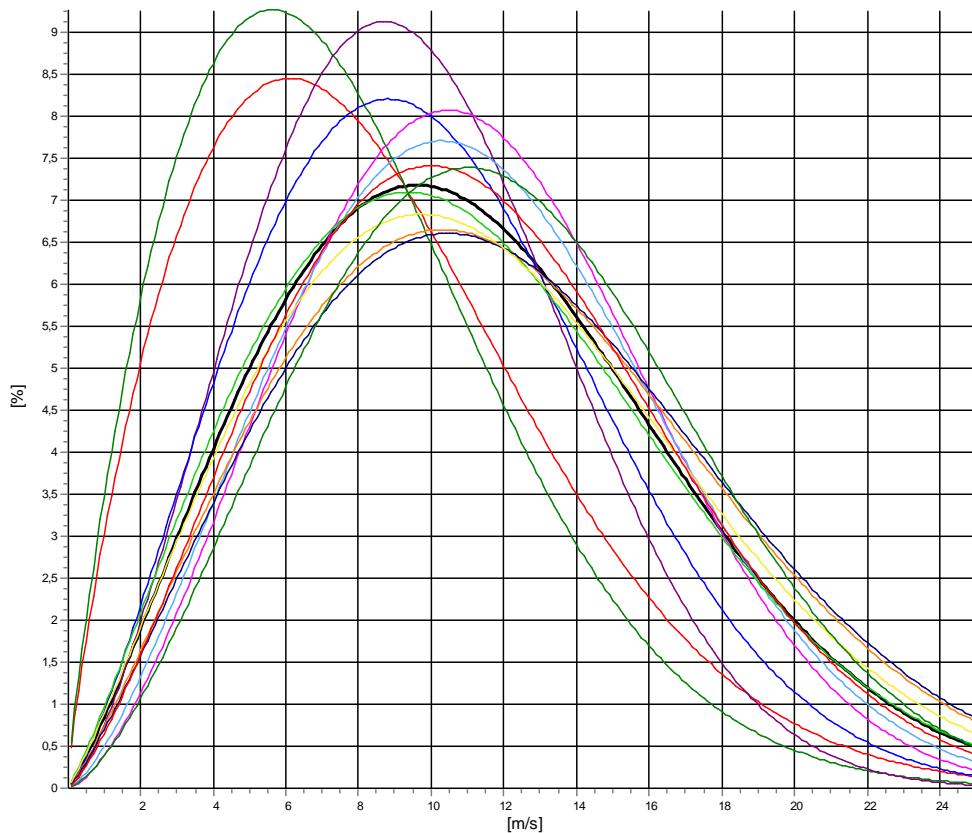
Meteo data report - Weibull data overview

Mast: Lot 2 LT 2y ; 20 year period **Period:** Full period: 01/01/2003 - 01/01/2023 (240,0 months)

Height: **270,00m - MCP LT - 2y 270m MCP session (1) - [Matrix]**

Weibull data

Sector	A	k	f	Mean wind speed
	[m/s]			[m/s]
0-N	9,55	1,806	3,86	8,49
1-NNE	8,74	1,818	3,17	7,77
2-ENE	10,82	2,429	4,85	9,60
3-E	11,40	2,262	5,87	10,10
4-ESE	12,72	2,550	7,32	11,29
5-SSE	12,81	2,427	6,47	11,36
6-S	12,61	2,127	7,54	11,17
7-SSW	13,67	2,175	10,87	12,11
8-WSW	13,82	2,188	12,92	12,24
9-W	13,11	2,130	12,44	11,61
10-WNW	12,80	2,303	13,46	11,34
11-NNW	13,59	2,479	11,23	12,05
Mean	12,71	2,186	100,00	11,26



All A: 12,7 m/s k: 2,19 Vm: 11,3 m/s	N A: 9,5 m/s k: 1,81 Vm: 8,5 m/s	NNE A: 8,7 m/s k: 1,82 Vm: 7,8 m/s	ENE A: 10,8 m/s k: 2,43 Vm: 9,6 m/s
E A: 11,4 m/s k: 2,26 Vm: 10,1 m/s	ESE A: 12,7 m/s k: 2,55 Vm: 11,3 m/s	SSE A: 12,8 m/s k: 2,43 Vm: 11,4 m/s	S A: 12,6 m/s k: 2,13 Vm: 11,2 m/s
SSW A: 13,7 m/s k: 2,18 Vm: 12,1 m/s	WSW A: 13,8 m/s k: 2,19 Vm: 12,2 m/s	W A: 13,1 m/s k: 2,13 Vm: 11,6 m/s	WNW A: 12,8 m/s k: 2,30 Vm: 11,3 m/s
NNW A: 13,6 m/s k: 2,48 Vm: 12,1 m/s			



Project:
Energy Island North Sea

Licensed user:
EMD International A/S
Niels Jernes Vej 10
DK-9220 Aalborg Ø
+45 6916 4850
Thomas Sørensen / ts@emd.dk
Calculated:
06/03/2024 10.36

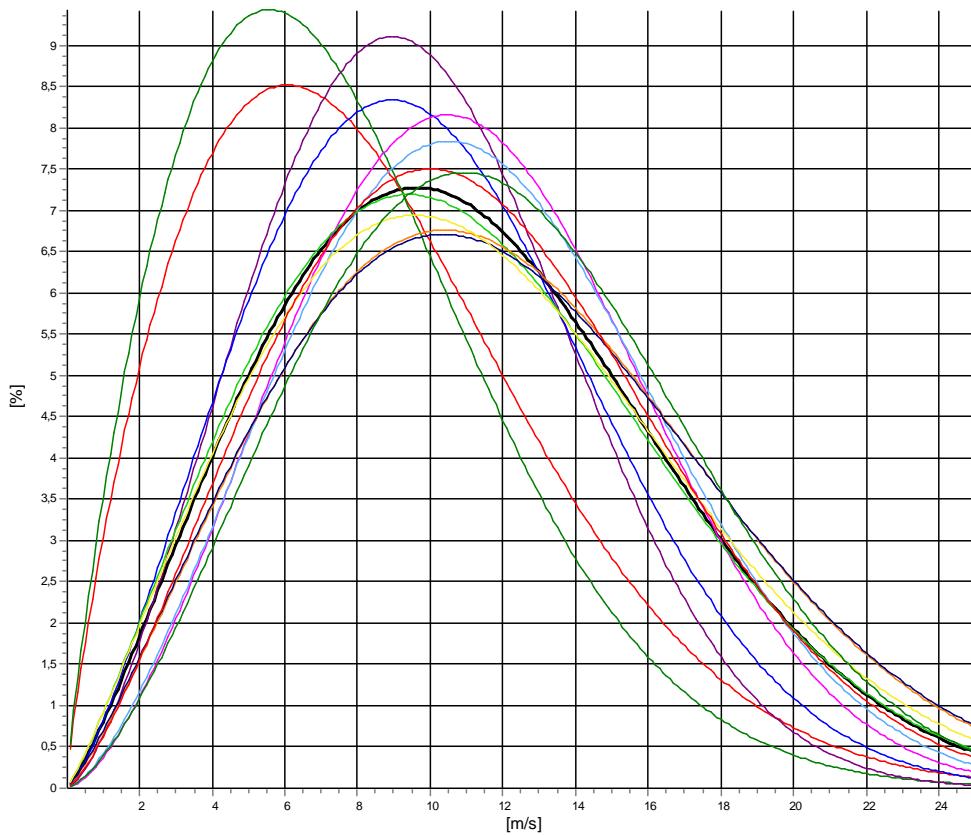
Meteo data report - Weibull data overview

Mast: Lot 2 LT 2y ; 20 year period **Period:** Full period: 01/01/2003 - 01/01/2023 (240,0 months)

Height: 240,00m - MCP LT - 2y 240m MCP session (1) - [Matrix]

Weibull data

Sector	A	k	f	Mean wind speed
	[m/s]			[m/s]
0-N	9,48	1,811	3,82	8,43
1-NNE	8,60	1,827	3,23	7,65
2-ENE	11,03	2,484	4,80	9,79
3-E	11,41	2,317	6,04	10,11
4-ESE	12,68	2,575	7,29	11,26
5-SSE	12,89	2,503	6,52	11,44
6-S	12,56	2,158	7,55	11,12
7-SSW	13,63	2,218	10,89	12,07
8-WSW	13,65	2,201	12,91	12,09
9-W	12,90	2,131	12,30	11,42
10-NNW	12,73	2,326	13,51	11,28
11-NNW	13,45	2,481	11,14	11,94
Mean	12,63	2,212	100,00	11,19



— All A: 12.6 m/s k: 2.21 Vm: 11.2 m/s	— N A: 9.5 m/s k: 1.81 Vm: 8.4 m/s	— NNE A: 8.6 m/s k: 1.83 Vm: 7.6 m/s	— ENE A: 11.0 m/s k: 2.48 Vm: 9.8 m/s
— E A: 11.4 m/s k: 2.32 Vm: 10.1 m/s	— ESE A: 12.7 m/s k: 2.58 Vm: 11.3 m/s	— SSE A: 12.9 m/s k: 2.50 Vm: 11.4 m/s	— S A: 12.6 m/s k: 2.16 Vm: 11.1 m/s
— SSW A: 13.6 m/s k: 2.22 Vm: 12.1 m/s	— WSW A: 13.7 m/s k: 2.20 Vm: 12.1 m/s	— W A: 12.9 m/s k: 2.13 Vm: 11.4 m/s	— WNW A: 12.7 m/s k: 2.33 Vm: 11.3 m/s
— NNW A: 13.5 m/s k: 2.48 Vm: 11.9 m/s			



Project:
Energy Island North Sea

Licensed user:
EMD International A/S
Niels Jernes Vej 10
DK-9220 Aalborg Ø
+45 6916 4850
Thomas Sørensen / ts@emd.dk
Calculated:
06/03/2024 10.36

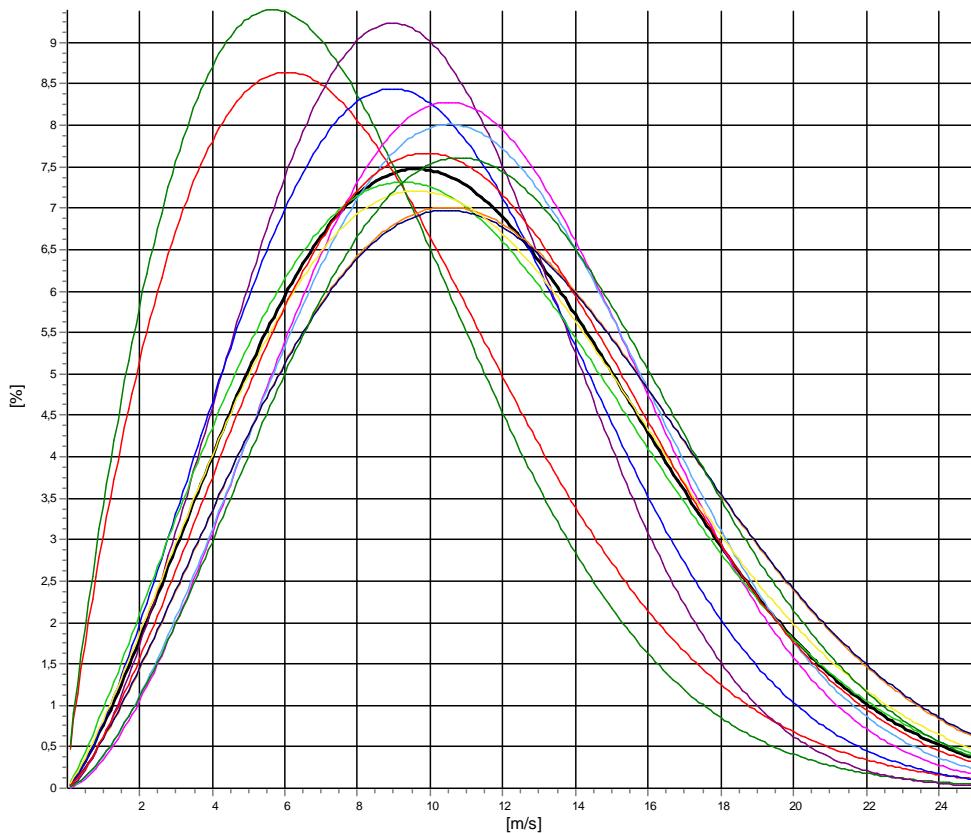
Meteo data report - Weibull data overview

Mast: Lot 2 LT 2y ; 20 year period **Period:** Full period: 01/01/2003 - 01/01/2023 (240,0 months)

Height: **200,00m - MCP LT - 2y 200m MCP session (1) - [Matrix]**

Weibull data

Sector	A	k	f	Mean wind speed
	[m/s]			[m/s]
0-N	9,37	1,821	3,81	8,33
1-NNE	8,67	1,838	3,28	7,70
2-ENE	10,98	2,512	4,82	9,74
3-E	11,36	2,341	6,15	10,07
4-ESE	12,64	2,612	7,35	11,22
5-SSE	12,80	2,548	6,53	11,36
6-S	12,34	2,155	7,66	10,93
7-SSW	13,46	2,291	10,84	11,92
8-WSW	13,49	2,281	12,78	11,95
9-W	12,70	2,197	12,19	11,25
10-WNW	12,54	2,347	13,53	11,11
11-NNW	13,26	2,498	11,05	11,77
Mean	12,48	2,255	100,00	11,06



All A: 12.5 m/s k: 2.26 Vm: 11.1 m/s	N A: 9.4 m/s k: 1.82 Vm: 8.3 m/s	ENE A: 8.7 m/s k: 1.84 Vm: 7.7 m/s	NE A: 11.0 m/s k: 2.51 Vm: 9.7 m/s
E A: 11.4 m/s k: 2.34 Vm: 10.1 m/s	ESE A: 12.6 m/s k: 2.61 Vm: 11.2 m/s	SSE A: 12.8 m/s k: 2.55 Vm: 11.4 m/s	S A: 12.3 m/s k: 2.15 Vm: 10.9 m/s
SSW A: 13.5 m/s k: 2.29 Vm: 11.9 m/s	WSW A: 13.5 m/s k: 2.28 Vm: 11.9 m/s	W A: 12.7 m/s k: 2.20 Vm: 11.2 m/s	WNW A: 12.5 m/s k: 2.35 Vm: 11.1 m/s
NNW A: 13.3 m/s k: 2.50 Vm: 11.8 m/s			



Project:
Energy Island North Sea

Licensed user:
EMD International A/S
Niels Jernes Vej 10
DK-9220 Aalborg Ø
+45 6916 4850
Thomas Sørensen / ts@emd.dk
Calculated:
06/03/2024 10.36

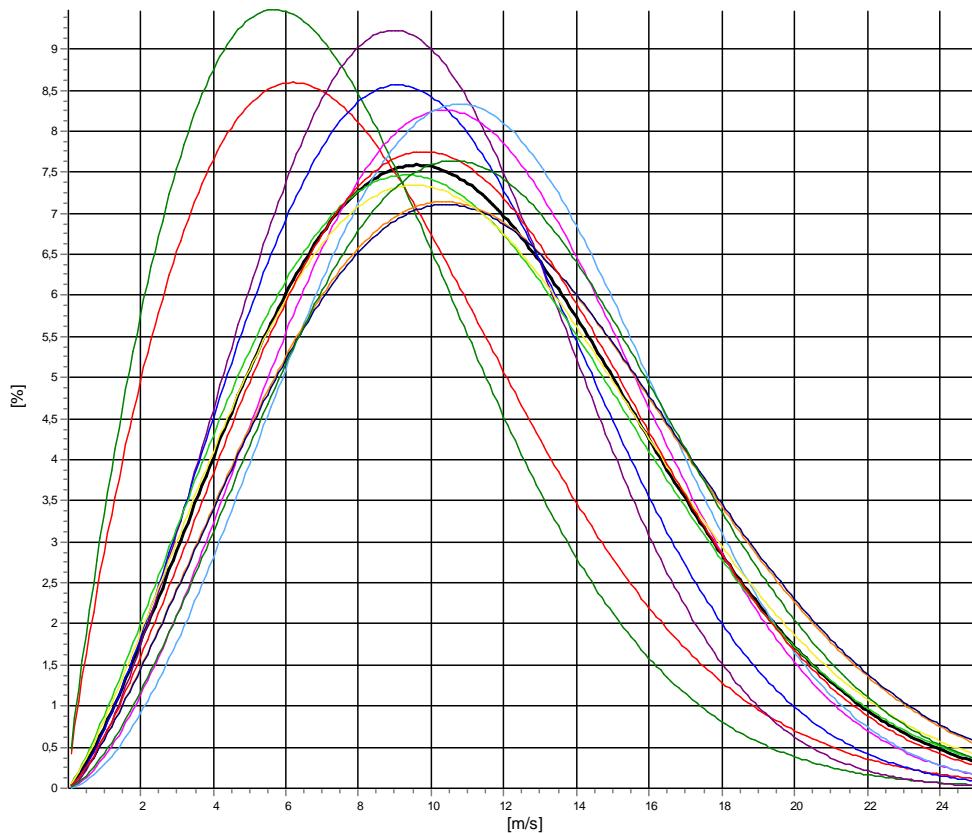
Meteo data report - Weibull data overview

Mast: Lot 2 LT 2y ; 20 year period **Period:** Full period: 01/01/2003 - 01/01/2023 (240,0 months)

Height: **180,00m - MCP LT - 2y 180m MCP session (1) - [Matrix]**

Weibull data

Sector	A	k	f	Mean wind speed
	[m/s]			[m/s]
0-N	9,49	1,842	3,78	8,43
1-NNE	8,64	1,856	3,26	7,67
2-ENE	10,97	2,509	4,93	9,74
3-E	11,39	2,393	6,15	10,10
4-ESE	12,53	2,576	7,41	11,13
5-SSE	12,84	2,683	6,55	11,41
6-S	12,27	2,198	7,65	10,86
7-SSW	13,27	2,302	10,87	11,75
8-WSW	13,32	2,300	12,79	11,80
9-W	12,52	2,210	12,07	11,09
10-WNW	12,41	2,349	13,47	10,99
11-NNW	13,11	2,473	11,06	11,62
Mean	12,38	2,277	100,00	10,97



All A: 12.4 m/s k: 2.28 Vm: 11,0 m/s	N A: 9,5 m/s k: 1,84 Vm: 8,4 m/s	NNE A: 8,6 m/s k: 1,86 Vm: 7,7 m/s	ENE A: 11,0 m/s k: 2,51 Vm: 9,7 m/s
E A: 11,4 m/s k: 2,39 Vm: 10,1 m/s	ESE A: 12,5 m/s k: 2,58 Vm: 11,1 m/s	SSE A: 12,8 m/s k: 2,68 Vm: 11,4 m/s	S A: 12,3 m/s k: 2,20 Vm: 10,9 m/s
SSW A: 13,3 m/s k: 2,30 Vm: 11,8 m/s	WSW A: 13,3 m/s k: 2,30 Vm: 11,8 m/s	W A: 12,5 m/s k: 2,21 Vm: 11,1 m/s	W A: 12,5 m/s k: 2,35 Vm: 11,0 m/s
NWW A: 13,1 m/s k: 2,47 Vm: 11,6 m/s			



Project:
Energy Island North Sea

Licensed user:
EMD International A/S
Niels Jernes Vej 10
DK-9220 Aalborg Ø
+45 6916 4850
Thomas Sørensen / ts@emd.dk
Calculated:
06/03/2024 10.36

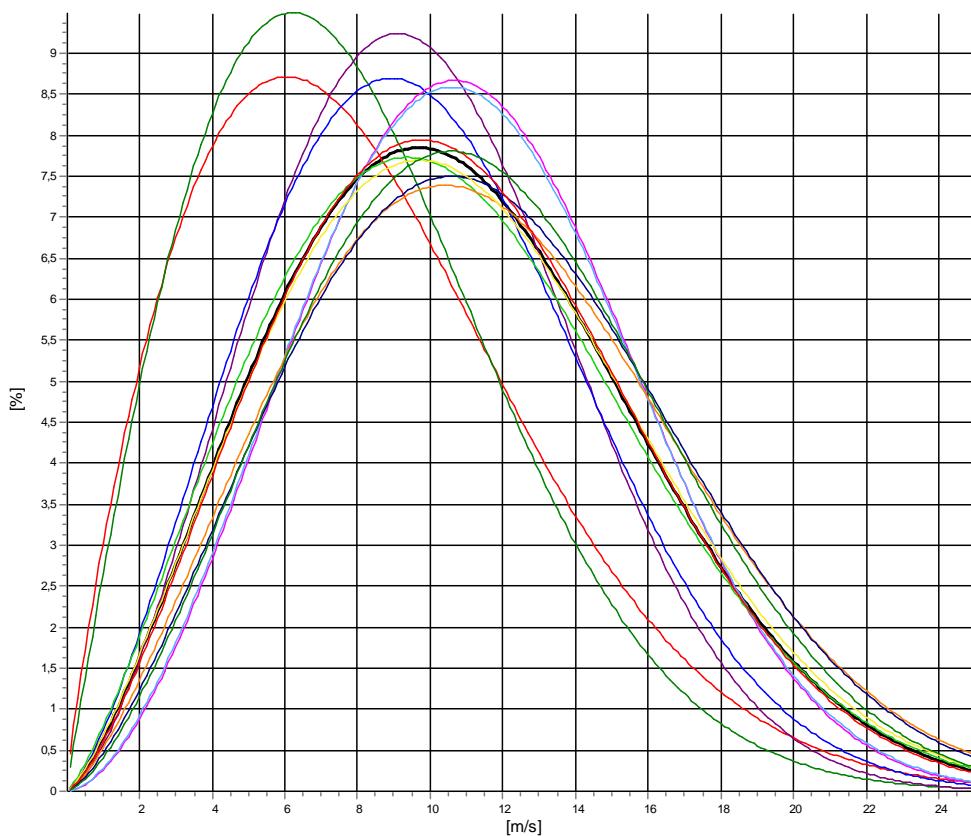
Meteo data report - Weibull data overview

Mast: Lot 2 LT 2y ; 20 year period **Period:** Full period: 01/01/2003 - 01/01/2023 (240,0 months)

Height: **150,00m - MCP LT - 2y 150m MCP session (1) - [Matrix]**

Weibull data

Sector	A	k	f	Mean wind speed
	[m/s]			[m/s]
0-N	9,32	1,830	3,81	8,29
1-NNE	8,92	1,962	3,33	7,91
2-ENE	11,09	2,544	4,91	9,84
3-E	11,20	2,387	6,33	9,93
4-ESE	12,57	2,744	7,40	11,19
5-SSE	12,57	2,713	6,61	11,18
6-S	12,12	2,267	7,73	10,73
7-SSW	13,12	2,373	10,82	11,63
8-WSW	13,17	2,430	12,66	11,68
9-W	12,39	2,321	12,08	10,97
10-WNW	12,26	2,386	13,44	10,86
11-NNW	12,96	2,505	10,87	11,50
Mean	12,26	2,348	100,00	10,86



— All A: 12.3 m/s k: 2.35 Vm: 10.9 m/s	— N A: 9.3 m/s k: 1.83 Vm: 8.3 m/s	— NNE A: 8.9 m/s k: 1.96 Vm: 7.9 m/s	— ENE A: 11.1 m/s k: 2.54 Vm: 9.8 m/s
— E A: 11.2 m/s k: 2.39 Vm: 9.9 m/s	— ESE A: 12.6 m/s k: 2.74 Vm: 11.2 m/s	— SSE A: 12.6 m/s k: 2.71 Vm: 11.2 m/s	— S A: 12.1 m/s k: 2.27 Vm: 10.7 m/s
— SSW A: 13.1 m/s k: 2.37 Vm: 11.6 m/s	— W A: 12.4 m/s k: 2.32 Vm: 11.0 m/s	— WNW A: 12.3 m/s k: 2.39 Vm: 10.9 m/s	
— NWW A: 13.0 m/s k: 2.50 Vm: 11.5 m/s			



Project:
Energy Island North Sea

Licensed user:
EMD International A/S
Niels Jernes Vej 10
DK-9220 Aalborg Ø
+45 6916 4850
Thomas Sørensen / ts@emd.dk
Calculated:
06/03/2024 10.36

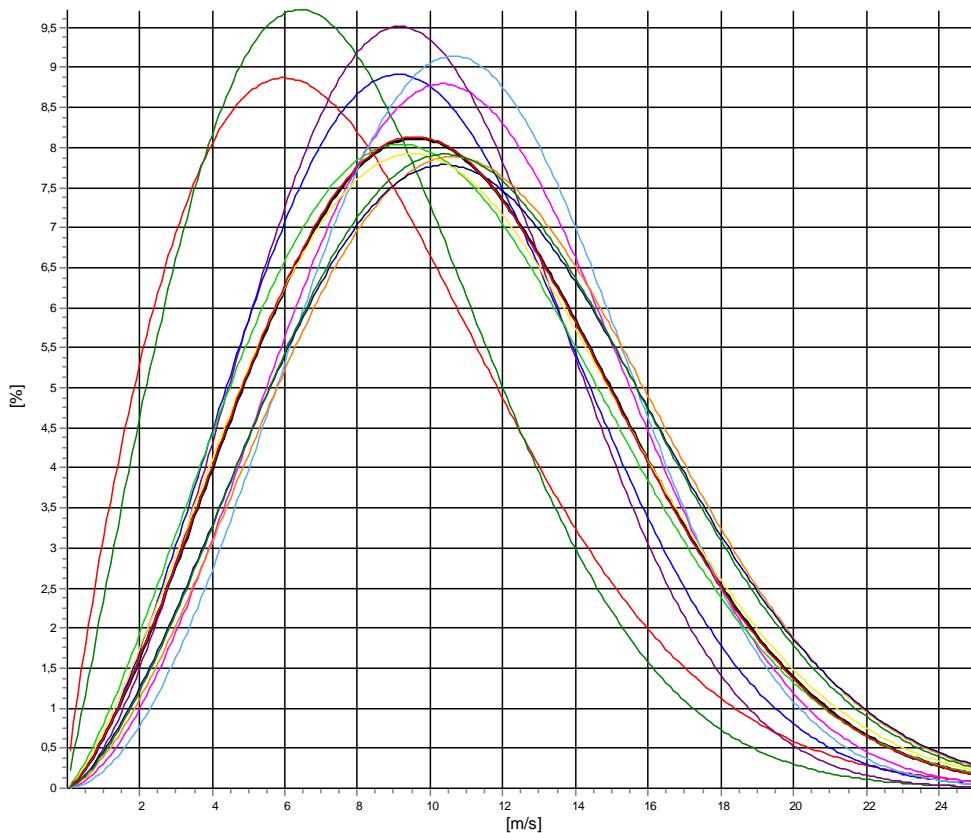
Meteo data report - Weibull data overview

Mast: Lot 2 LT 2y ; 20 year period **Period:** Full period: 01/01/2003 - 01/01/2023 (240,0 months)

Height: **120,00m - MCP LT - 2y 120m MCP session (1) - [Matrix]**

Weibull data

Sector	A	k	f	Mean wind speed
	[m/s]			[m/s]
0-N	9,17	1,833	3,82	8,15
1-NNE	8,93	2,037	3,27	7,91
2-ENE	11,01	2,617	5,06	9,78
3-E	11,23	2,473	6,46	9,96
4-ESE	12,26	2,710	7,40	10,91
5-SSE	12,36	2,864	6,52	11,02
6-S	11,77	2,298	7,82	10,42
7-SSW	12,94	2,533	10,83	11,49
8-WSW	12,84	2,466	12,58	11,38
9-W	12,08	2,332	11,89	10,70
10-WNW	11,99	2,392	13,50	10,63
11>NNW	12,76	2,499	10,83	11,32
Mean	12,03	2,394	100,00	10,66



— All A: 12,0 m/s k: 2,39 Vm: 10,7 m/s	— N A: 9,2 m/s k: 1,83 Vm: 8,1 m/s	— NNE A: 8,9 m/s k: 2,04 Vm: 7,9 m/s	— ENE A: 11,0 m/s k: 2,62 Vm: 9,8 m/s
— E A: 11,2 m/s k: 2,47 Vm: 10,0 m/s	— ESE A: 12,3 m/s k: 2,71 Vm: 10,9 m/s	— SSE A: 12,4 m/s k: 2,86 Vm: 11,0 m/s	— S A: 11,8 m/s k: 2,30 Vm: 10,4 m/s
— SSW A: 12,9 m/s k: 2,53 Vm: 11,5 m/s	— WSW A: 12,8 m/s k: 2,47 Vm: 11,4 m/s	— W A: 12,1 m/s k: 2,33 Vm: 10,7 m/s	— WNW A: 12,0 m/s k: 2,39 Vm: 10,6 m/s
— NWW A: 12,8 m/s k: 2,50 Vm: 11,3 m/s			



Project:
Energy Island North Sea

Licensed user:
EMD International A/S
Niels Jernes Vej 10
DK-9220 Aalborg Ø
+45 6916 4850
Thomas Sørensen / ts@emd.dk
Calculated:
06/03/2024 10.36

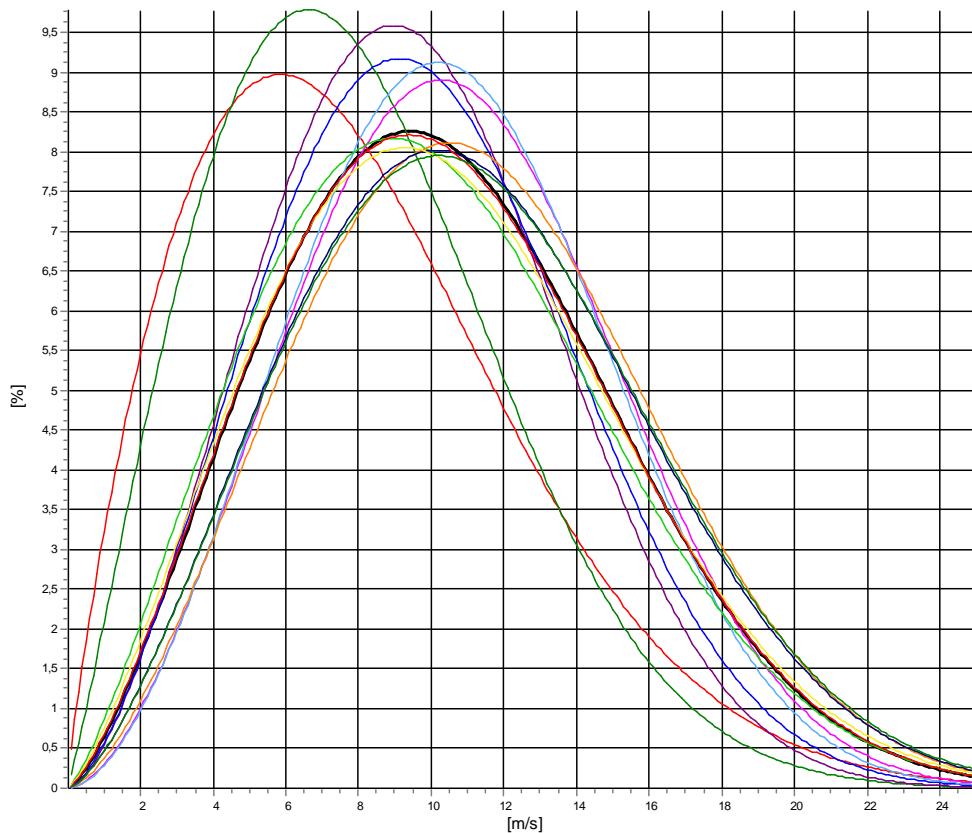
Meteo data report - Weibull data overview

Mast: Lot 2 LT 2y ; 20 year period **Period:** Full period: 01/01/2003 - 01/01/2023 (240,0 months)

Height: **100,00m - MCP LT - 2y 100m MCP session (1) - [Matrix]**

Weibull data

Sector	A	k	f	Mean wind speed
	[m/s]			[m/s]
0-N	9,04	1,826	3,83	8,04
1-NNE	9,03	2,090	3,34	8,00
2-ENE	10,82	2,586	5,09	9,61
3-E	11,12	2,530	6,55	9,87
4-ESE	12,15	2,720	7,39	10,81
5-SSE	12,00	2,759	6,60	10,68
6-S	11,52	2,281	7,85	10,20
7-SSW	12,72	2,568	10,81	11,29
8-WSW	12,53	2,483	12,55	11,11
9-W	11,83	2,318	11,80	10,48
10-WNW	11,82	2,376	13,42	10,48
11>NNW	12,60	2,474	10,77	11,18
Mean	11,82	2,394	100,00	10,48





Project:
Energy Island North Sea

Licensed user:
EMD International A/S
Niels Jernes Vej 10
DK-9220 Aalborg Ø
+45 6916 4850
Thomas Sørensen / ts@emd.dk
Calculated:
06/03/2024 10.36

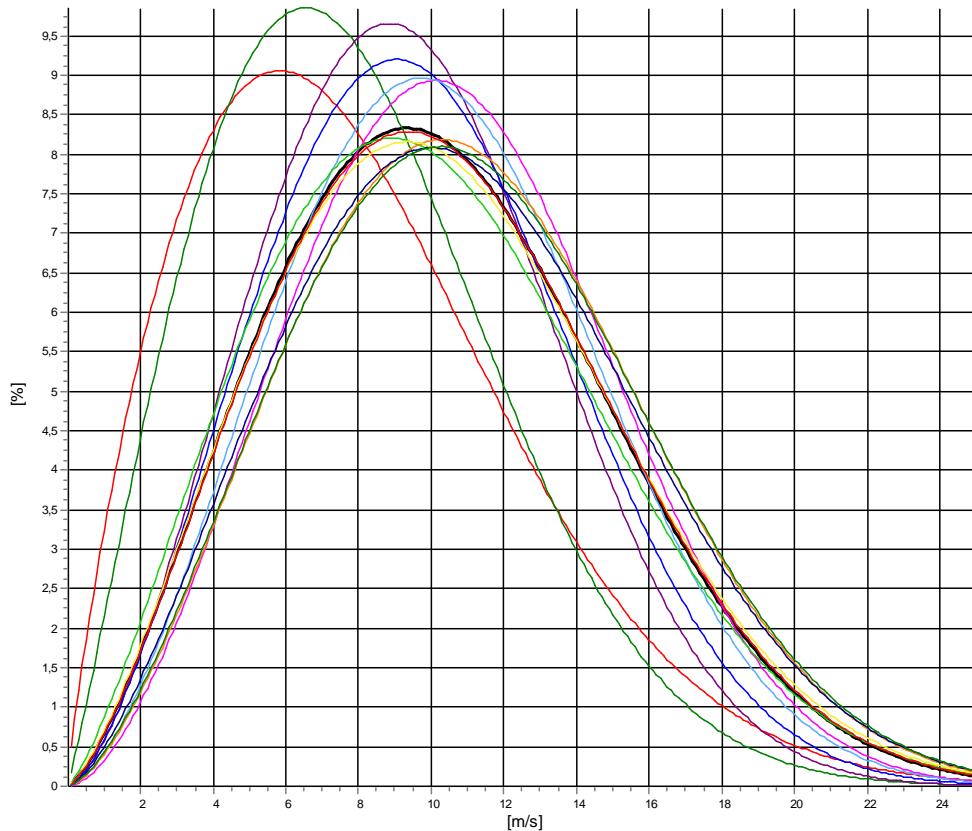
Meteo data report - Weibull data overview

Mast: Lot 2 LT 2y ; 20 year period **Period:** Full period: 01/01/2003 - 01/01/2023 (240,0 months)

Height: **90,00m - MCP LT - 2y 90m MCP session (1) - [Matrix]**

Weibull data

Sector	A	k	f	Mean wind speed
	[m/s]			[m/s]
0-N	8,97	1,832	3,81	7,97
1-NNE	8,95	2,084	3,28	7,93
2-ENE	10,71	2,573	5,19	9,51
3-E	11,05	2,523	6,54	9,81
4-ESE	12,02	2,697	7,33	10,69
5-SSE	11,69	2,617	6,66	10,38
6-S	11,47	2,282	7,96	10,16
7-SSW	12,52	2,546	10,80	11,12
8-WSW	12,37	2,469	12,50	10,98
9-W	11,81	2,353	11,81	10,46
10-WNW	11,77	2,390	13,35	10,43
11>NNW	12,55	2,520	10,76	11,14
Mean	11,71	2,393	100,00	10,38



All A: 11,7 m/s k: 2,39 Vm: 10,4 m/s	N A: 9,0 m/s k: 1,83 Vm: 8,0 m/s	NNE A: 8,9 m/s k: 2,08 Vm: 7,9 m/s	ENE A: 10,7 m/s k: 2,57 Vm: 9,5 m/s
E A: 11,1 m/s k: 2,52 Vm: 9,8 m/s	ESE A: 12,0 m/s k: 2,70 Vm: 10,7 m/s	SSE A: 11,7 m/s k: 2,62 Vm: 10,4 m/s	S A: 11,5 m/s k: 2,28 Vm: 10,2 m/s
SSW A: 12,5 m/s k: 2,55 Vm: 11,1 m/s	WSW A: 12,4 m/s k: 2,47 Vm: 11,0 m/s	W A: 11,8 m/s k: 2,35 Vm: 10,5 m/s	NNW A: 12,6 m/s k: 2,52 Vm: 11,1 m/s
			WNW A: 11,8 m/s k: 2,39 Vm: 10,4 m/s



Project:
Energy Island North Sea

Licensed user:
EMD International A/S
Niels Jernes Vej 10
DK-9220 Aalborg Ø
+45 6916 4850
Thomas Sørensen / ts@emd.dk
Calculated:
06/03/2024 10.36

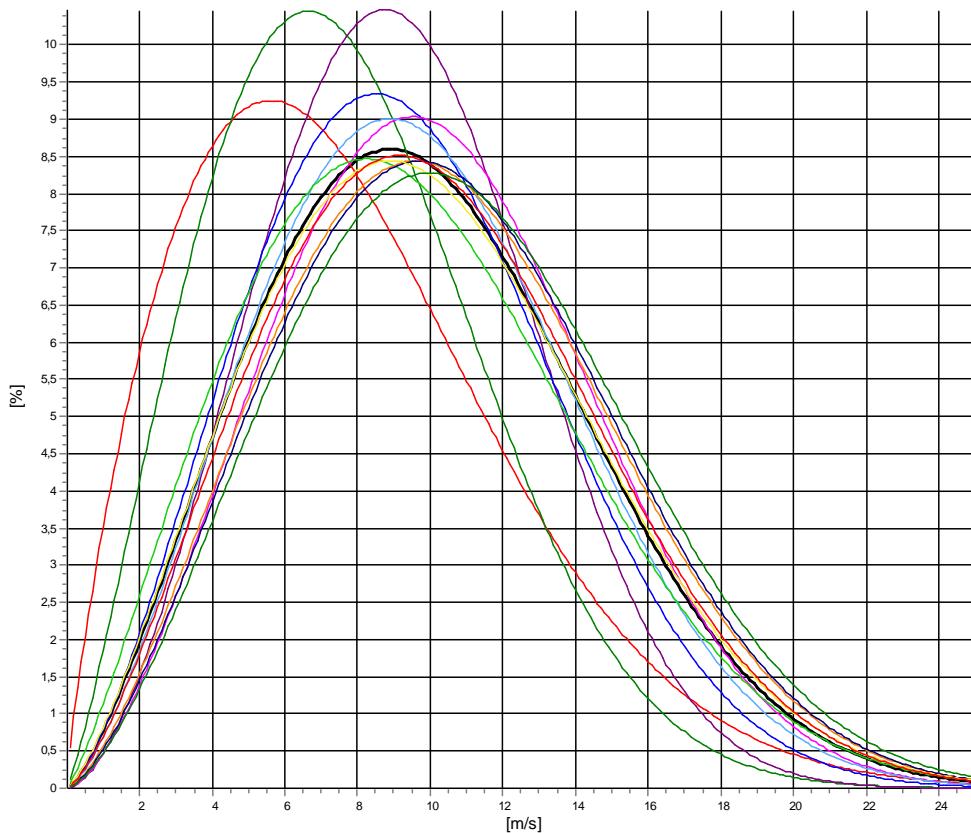
Meteo data report - Weibull data overview

Mast: Lot 2 LT 2y ; 20 year period **Period:** Full period: 01/01/2003 - 01/01/2023 (240,0 months)

Height: **60,00m - MCP LT - 2y 60m MCP session (1) - [Matrix]**

Weibull data

Sector	A [m/s]	k	f	Mean wind speed [m/s]
0-N	8,73	1,812	3,90	7,76
1-NNE	8,76	2,198	3,42	7,76
2-ENE	10,35	2,727	5,28	9,21
3-E	10,58	2,433	6,66	9,38
4-ESE	11,50	2,590	7,31	10,21
5-SSE	11,03	2,448	6,58	9,78
6-S	10,85	2,207	8,06	9,61
7-SSW	11,82	2,460	10,88	10,48
8-WSW	11,92	2,488	12,27	10,58
9-W	11,32	2,328	11,87	10,03
10-WNW	11,47	2,394	13,25	10,17
11-NNW	12,22	2,506	10,52	10,84
Mean	11,24	2,362	100,00	9,96



— All A: 11,2 m/s k: 2,36 Vm: 10,0 m/s	— N A: 8,7 m/s k: 1,81 Vm: 7,8 m/s	— NNE A: 8,8 m/s k: 2,20 Vm: 7,8 m/s	— ENE A: 10,3 m/s k: 2,73 Vm: 9,2 m/s
— E A: 10,6 m/s k: 2,43 Vm: 9,4 m/s	— ESE A: 11,5 m/s k: 2,59 Vm: 10,2 m/s	— SSE A: 11,0 m/s k: 2,45 Vm: 9,8 m/s	— S A: 10,8 m/s k: 2,21 Vm: 9,6 m/s
— SSW A: 11,8 m/s k: 2,46 Vm: 10,5 m/s	— WSW A: 11,9 m/s k: 2,49 Vm: 10,6 m/s	— W A: 11,3 m/s k: 2,33 Vm: 10,0 m/s	— WNW A: 11,5 m/s k: 2,39 Vm: 10,2 m/s
— NWW A: 12,2 m/s k: 2,51 Vm: 10,8 m/s			



Project:
Energy Island North Sea

Licensed user:
EMD International A/S
Niels Jernes Vej 10
DK-9220 Aalborg Ø
+45 6916 4850
Thomas Sørensen / ts@emd.dk
Calculated:
06/03/2024 10.36

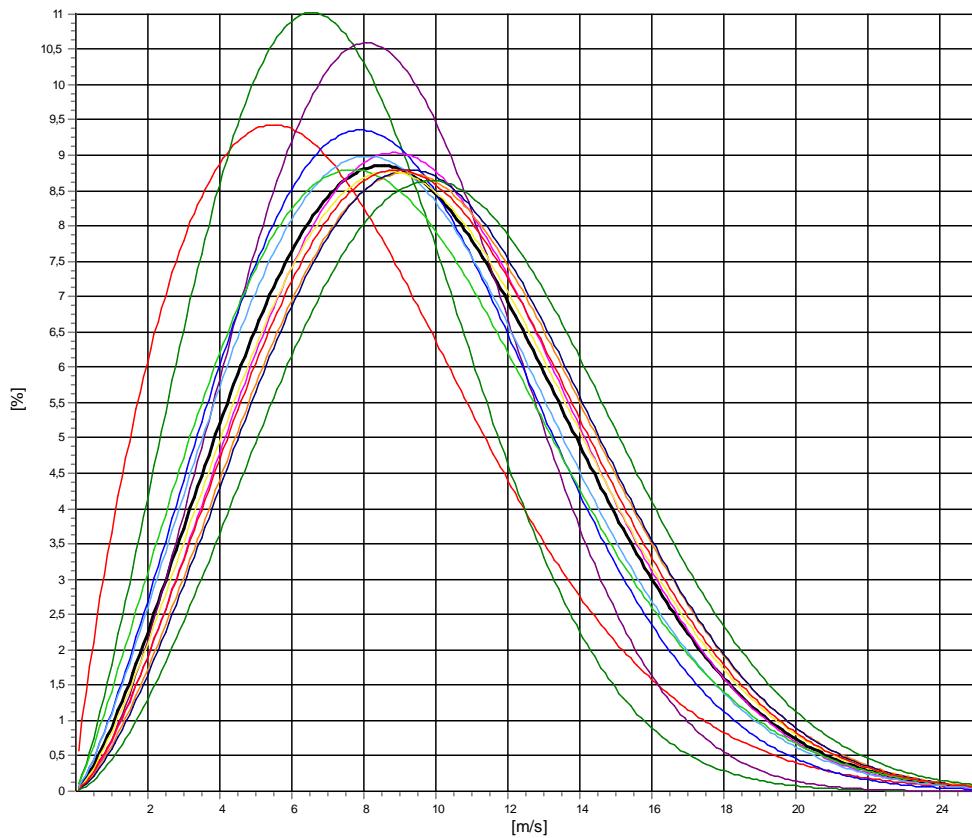
Meteo data report - Weibull data overview

Mast: Lot 2 LT 2y ; 20 year period **Period:** Full period: 01/01/2003 - 01/01/2023 (240,0 months)

Height: 40,00m - MCP LT - 2y 40m MCP session (1) - [Matrix]

Weibull data

Sector	A [m/s]	k	f Mean wind speed [m/s]
0-N	8,56	1,809	3,84
1-NNE	8,49	2,264	3,50
2-ENE	9,77	2,579	5,33
3-E	10,13	2,303	6,70
4-ESE	10,97	2,441	7,40
5-SSE	10,45	2,276	6,56
6-S	10,27	2,157	8,08
7-SSW	11,35	2,450	10,88
8-WSW	11,41	2,479	12,22
9-W	11,00	2,359	11,81
10-NNW	11,15	2,408	13,16
11-NNW	11,94	2,569	10,53
Mean	10,81	2,333	100,00
			9,58



Legend (Wind Speeds):
All A: 10,8 m/s k: 2,33 Vm: 9,6 m/s N A: 8,6 m/s k: 1,81 Vm: 7,6 m/s NNE A: 8,5 m/s k: 2,26 Vm: 7,5 m/s ENE A: 9,8 m/s k: 2,58 Vm: 8,7 m/s
E A: 10,1 m/s k: 2,30 Vm: 9,0 m/s SSE A: 11,0 m/s k: 2,44 Vm: 9,7 m/s SSE A: 10,4 m/s k: 2,28 Vm: 9,3 m/s SA: 10,3 m/s k: 2,16 Vm: 9,1 m/s
SSW A: 11,4 m/s k: 2,45 Vm: 10,1 m/s WSW A: 11,4 m/s k: 2,48 Vm: 10,1 m/s W A: 11,0 m/s k: 2,36 Vm: 9,7 m/s WNW A: 11,1 m/s k: 2,41 Vm: 9,9 m/s
NNW A: 11,9 m/s k: 2,57 Vm: 10,6 m/s



Project:
Energy Island North Sea

Licensed user:
EMD International A/S
Niels Jernes Vej 10
DK-9220 Aalborg Ø
+45 6916 4850
Thomas Sørensen / ts@emd.dk
Calculated:
06/03/2024 10.36

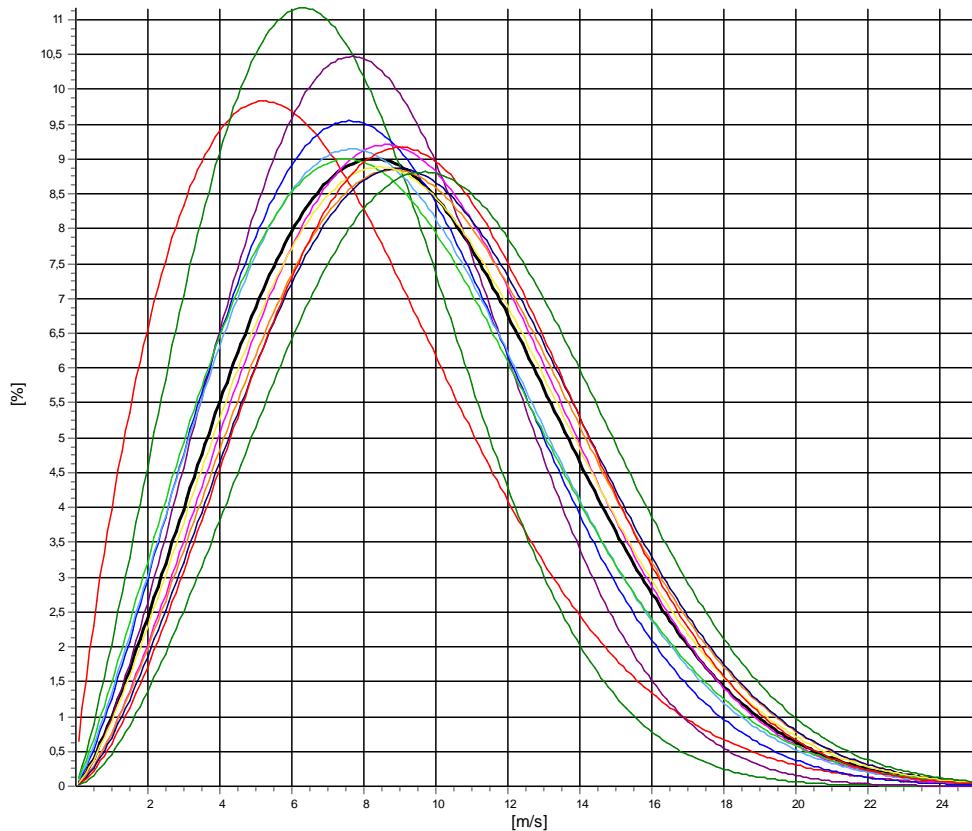
Meteo data report - Weibull data overview

Mast: Lot 2 LT 2y ; 20 year period **Period:** Full period: 01/01/2003 - 01/01/2023 (240,0 months)

Height: **30,00m - MCP LT - 2y 30m MCP session (1) - [Matrix]**

Weibull data

Sector	A [m/s]	k	f Mean wind speed [m/s]
0-N	8,20	1,804	3,84
1-NNE	8,26	2,221	3,46
2-ENE	9,50	2,453	5,44
3-E	9,83	2,275	6,68
4-ESE	10,73	2,430	7,35
5-SSE	10,06	2,212	6,55
6-S	10,04	2,158	8,11
7-SSW	11,04	2,395	10,86
8-WSW	11,14	2,430	12,16
9-W	10,75	2,327	11,76
10-WNW	11,04	2,507	13,27
11>NNW	11,72	2,571	10,52
Mean	10,56	2,314	100,00
			9,36



All A: 10,6 m/s k: 2,31 Vm: 9,4 m/s	N A: 8,2 m/s k: 1,80 Vm: 7,3 m/s	NNE A: 8,3 m/s k: 2,22 Vm: 7,3 m/s	ENE A: 9,5 m/s k: 2,45 Vm: 8,4 m/s
E A: 9,8 m/s k: 2,28 Vm: 8,7 m/s	ESE A: 10,7 m/s k: 2,43 Vm: 9,5 m/s	SSE A: 10,1 m/s k: 2,21 Vm: 8,9 m/s	S A: 10,0 m/s k: 2,16 Vm: 8,9 m/s
SSW A: 11,0 m/s k: 2,40 Vm: 9,8 m/s	WSW A: 11,1 m/s k: 2,43 Vm: 9,9 m/s	W A: 10,8 m/s k: 2,33 Vm: 9,5 m/s	WNW A: 11,0 m/s k: 2,51 Vm: 9,8 m/s
NNW A: 11,7 m/s k: 2,57 Vm: 10,4 m/s			



Project:

Energy Island North Sea

Licensed user:

EMD International A/S

Niels Jernes Vej 10

DK-9220 Aalborg Ø

+45 6916 4850

Thomas Sørensen / ts@emd.dk

Calculated:

06/03/2024 10:40

Meteo data report - Frequency distribution (TAB file data)**Mast:** North Sea position 3 LT 2y; 20 year period **Period:** Full period: 01/01/2003 - 01/01/2023 (240,0 months)**Frequency distribution (TAB file data)**

150,00m - MCP LT - 2y 150m MCP session (1) - [Matrix]		Scaled Buoy 1+2 gradient														
Bin	Start	End	Sum	0-N	1-NNE	2-ENE	3-E	4-ESE	5-SSE	6-S	7-SSW	8-WSW	9-W	10-WNW	11-NNW	
Mean	10,88	8,35	8,10	9,79	10,42	10,66	11,10	10,94	11,48	11,39	11,02	11,11	11,65			
0	0,49	182	11	24	34	13	3	7	14	16	19	12	14	15		
1	0,50	1,49	1695	156	130	223	126	126	128	131	92	144	137	153	149	
2	1,50	2,49	3309	236	277	373	282	262	243	295	314	263	221	280	263	
3	2,50	3,49	5303	408	370	320	424	552	270	374	430	547	502	599	507	
4	3,50	4,49	7220	497	449	365	453	680	491	444	518	853	950	818	702	
5	4,50	5,49	8887	796	444	512	538	541	537	567	825	989	1237	1091	810	
6	5,50	6,49	10804	750	550	482	748	646	747	859	1187	1259	1358	1203	1015	
7	6,50	7,49	11388	579	421	523	755	718	754	1062	1273	1375	1242	1578	1108	
8	7,50	8,49	11553	526	495	576	729	904	657	1013	1237	1451	1378	1557	1030	
9	8,50	9,49	12271	456	393	445	987	926	649	1066	1227	1460	1469	1896	1297	
10	9,50	10,49	13293	450	256	733	1089	983	620	934	1273	1649	1573	2000	1733	
11	10,50	11,49	13123	295	212	641	1125	891	863	870	1320	1646	1513	2027	1720	
12	11,50	12,49	12857	373	256	582	940	871	937	933	1318	1583	1468	1923	1673	
13	12,50	13,49	12080	293	283	580	902	880	916	896	1367	1491	1266	1679	1527	
14	13,50	14,49	9758	229	218	423	593	737	639	840	1072	1100	1288	1386	1233	
15	14,50	15,49	9419	280	139	329	547	898	678	702	1075	1219	1124	1163	1265	
16	15,50	16,49	7835	157	114	377	441	582	530	855	1076	931	1014	1176		
17	16,50	17,49	6126	133	66	223	299	494	502	496	769	804	753	796	791	
18	17,50	18,49	4945	64	71	171	274	372	346	412	675	706	557	644	653	
19	18,50	19,49	3915	49	44	118	243	235	225	341	492	599	478	508	583	
20	19,50	20,49	2902	50	26	82	154	170	262	298	317	354	313	390	486	
21	20,50	21,49	2132	18	18	57	121	96	175	190	305	324	223	299	306	
22	21,50	22,49	1485	9	10	48	53	68	96	120	177	332	216	171	185	
23	22,50	23,49	963	17	4	26	33	55	41	56	132	144	142	173	140	
24	23,50	24,49	766	8	3	13	25	37	43	57	173	114	101	100	92	
25	24,50	25,49	408	2	0	5	12	20	18	28	82	69	49	43	80	
26	25,50	26,49	249	2	5	2	3	4	8	19	40	63	34	27	42	
27	26,50	27,49	169	0	1	0	13	2	5	7	24	42	26	32	17	
28	27,50	28,49	100	0	1	0	3	0	3	5	16	24	19	22	7	
29	28,50	29,49	75	0	0	0	2	0	0	4	9	21	10	10	19	
30	29,50	30,49	44	0	0	0	0	0	1	0	3	6	15	13	6	
31	30,50	31,49	32	0	0	0	0	0	0	0	2	10	8	8	4	
32	31,50	32,49	10	0	0	0	0	0	0	0	1	3	3	2	1	
33	32,50	33,49	10	0	0	0	0	0	0	0	1	0	5	4	0	
34	33,50	34,49	5	0	0	0	0	0	0	0	0	1	1	1	2	
35	34,50	35,49	6	0	0	0	0	0	0	0	2	1	1	1	1	
36	35,50	36,49	1	0	0	0	0	0	0	0	0	0	1	0	0	
37	36,50	37,49	0	0	0	0	0	0	0	0	0	0	0	0	0	
38	37,50	38,49	0	0	0	0	0	0	0	0	0	0	0	0	0	
39	38,50	39,49	0	0	0	0	0	0	0	0	0	0	0	0	0	
40	39,50	40,49	0	0	0	0	0	0	0	0	0	0	0	0	0	
41	40,50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	



Project:
Energy Island North Sea

Licensed user:
EMD International A/S
Niels Jernes Vej 10
DK-9220 Aalborg Ø
+45 6916 4850
Thomas Sørensen / ts@emd.dk
Calculated:
06/03/2024 10:40

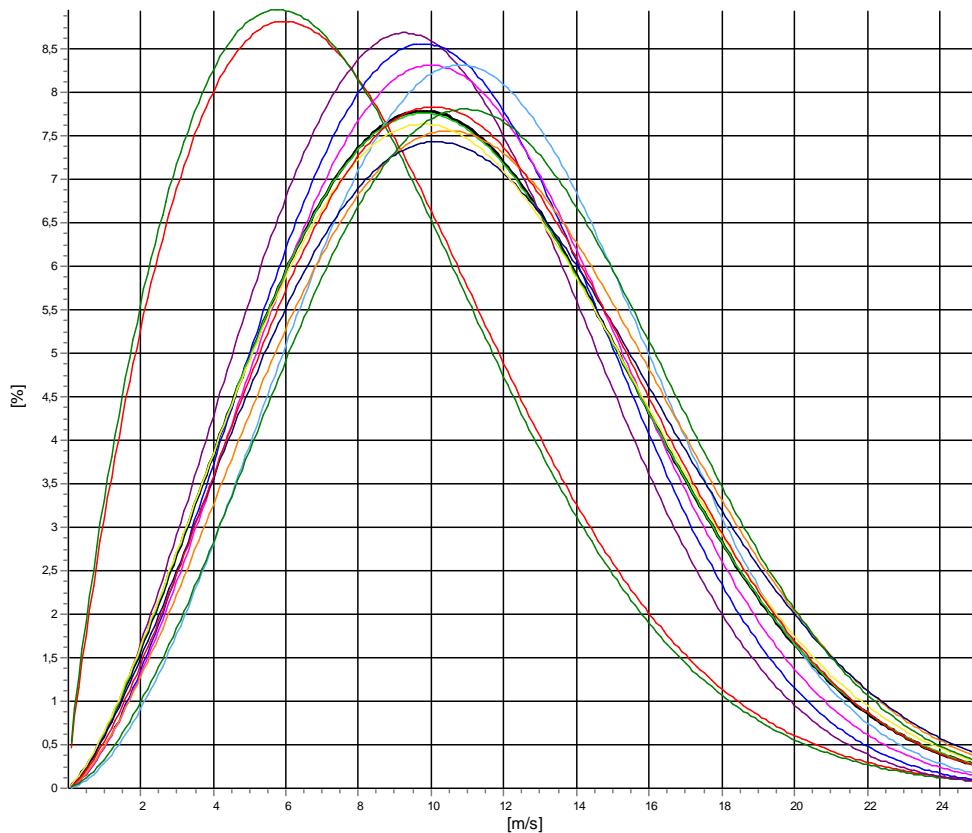
Meteo data report - Weibull data overview

Mast: North Sea position 3 LT 2y; 20 year period **Period:** Full period: 01/01/2003 - 01/01/2023 (240,0 months)

Height: **150,00m - MCP LT - 2y 150m MCP session (1) - [Matrix] Scaled Buoy 1+2 gradient**

Weibull data

Sector	A	k	f	Mean wind speed
	[m/s]			[m/s]
0-N	9,20	1,830	3,90	8,18
1-NNE	9,02	1,811	3,01	8,02
2-ENE	11,47	2,459	4,71	10,17
3-E	11,93	2,538	6,80	10,59
4-ESE	12,21	2,519	7,27	10,84
5-SSE	12,85	2,681	6,53	11,42
6-S	12,38	2,347	7,74	10,97
7-SSW	13,04	2,426	10,62	11,56
8-WSW	12,88	2,336	12,40	11,41
9-W	12,48	2,323	11,76	11,06
10-WNW	12,54	2,416	13,48	11,12
11>NNW	13,23	2,573	11,77	11,75
Mean	12,38	2,356	100,00	10,97



All A: 12,4 m/s k: 2,36 Vm: 11,0 m/s	N A: 9,2 m/s k: 1,83 Vm: 8,2 m/s	NNE A: 9,0 m/s k: 1,81 Vm: 8,0 m/s	ENE A: 11,5 m/s k: 2,46 Vm: 10,2 m/s
E A: 11,9 m/s k: 2,54 Vm: 10,6 m/s	ESE A: 12,2 m/s k: 2,52 Vm: 10,8 m/s	SSE A: 12,8 m/s k: 2,68 Vm: 11,4 m/s	S A: 12,4 m/s k: 2,35 Vm: 11,0 m/s
SSW A: 13,0 m/s k: 2,43 Vm: 11,6 m/s	WSW A: 12,9 m/s k: 2,34 Vm: 11,4 m/s	W A: 12,5 m/s k: 2,32 Vm: 11,1 m/s	NNW A: 13,2 m/s k: 2,57 Vm: 11,7 m/s



Appendix D. Normal Turbulence Model (150 m)



Wind speed [m/s]	Turbulence intensity mean value (TI_μ) [%]	Turbulence intensity standard deviation (TI_σ) [%]	Turbulence intensity 90% quantile [%]
3	10.1	5.9	17.6
4	7.9	4.7	13.9
5	6.7	3.9	11.8
6	6.0	3.5	10.4
7	5.6	3.1	9.5
8	5.3	2.8	8.9
9	5.1	2.6	8.5
10	5.0	2.5	8.2
11	5.0	2.4	8.0
12	5.0	2.3	7.9
13	5.0	2.2	7.8
14	5.1	2.1	7.7
15	5.1	2.0	7.7
16	5.2	2.0	7.7
17	5.4	1.9	7.8
18	5.5	1.9	7.9
19	5.7	1.8	8.0
20	5.8	1.8	8.1
21	6.0	1.7	8.2
22	6.1	1.7	8.3
23	6.3	1.7	8.5
24	6.5	1.7	8.6
25	6.7	1.6	8.8



Wind speed [m/s]	TURBULENCE MEAN VALUE (σ_μ) [m/s]	TURBULENCE STANDARD DEVIATION (σ_σ) [m/s]	Turbulence 90% QUANTILE [m/s]
3	0.30	0.18	0.53
4	0.32	0.19	0.56
5	0.34	0.20	0.59
6	0.36	0.21	0.63
7	0.39	0.22	0.67
8	0.42	0.23	0.71
9	0.46	0.24	0.76
10	0.50	0.25	0.82
11	0.55	0.26	0.88
12	0.60	0.27	0.94
13	0.65	0.28	1.01
14	0.71	0.29	1.08
15	0.77	0.30	1.16
16	0.84	0.31	1.24
17	0.91	0.32	1.33
18	0.99	0.33	1.42
19	1.07	0.34	1.51
20	1.16	0.35	1.62
21	1.25	0.37	1.72
22	1.35	0.38	1.83
23	1.45	0.39	1.95
24	1.56	0.40	2.07
25	1.67	0.41	2.19