



October 17, 2019

**VIA HAND DELIVERY**

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OCT 18 2019  
BOARD OF PUBLIC UTILITIES  
TRENTON, NJ

**Ira G. Megdal**

Direct Phone 856-910-5007  
Direct Fax 877-259-7984  
imegdal@cozen.com

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CASE DOCUMENT  
OCT 18 2019  
BOARD OF PUBLIC UTILITIES  
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Aida Camacho-Welch  
Board Secretary  
Board of Public Utilities  
44 South Clinton Ave.  
3rd Floor, Suite 314  
PO Box 350  
Trenton, NJ 08625-0350

**Re: In the Matter of the Board of Public Utilities Offshore Wind Solicitation for 1,100 MW – Evaluation of the Offshore Wind Applications BPU Docket No. QO18121289**

Dear Secretary Camacho-Welch:

This firm represents Ocean Wind, LLC (“Ocean Wind”) in connection with the above referenced matter

Pursuant to N.J.A.C. 14:1-12.1 et seq., we hereby submit on behalf of Ocean Wind a Public Copy and a Confidential Copy of Ocean Wind’s Answers to Clarifying Questions, Round 1, Pertaining to Ocean Wind’s Petition for Approval (the “Answers”).

With this letter is an unmarked envelope addressed to:

Records Custodian  
Board of Public Utilities  
44 South Clinton Avenue  
P.O. Box 350  
Trenton, NJ 08625

Therein is an envelope marked “Confidential” which contains the “Confidential Copy” of the Answers. This too is addressed to:

Records Custodian  
Board of Public Utilities  
44 South Clinton Avenue  
P.O. Box 350  
Trenton, NJ 08625

LEGAL\43329723\1

CMS  
Clean Energy  
Legal  
DAG  
J. Boyd, legal

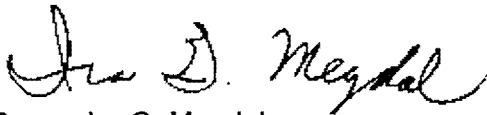
Also enclosed please find the Affidavit of Jens Gravgaard, Project Development Director of Ocean Wind.

The party designated to receive notices and other communications in connection with this matter is as follows:

Ira G. Megdal, Esq.  
Cozen O'Connor  
LibertyView, Suite 300  
457 Haddonfield Road  
Cherry Hill, NJ 08002  
(856) 910-5007

Sincerely,

COZEN O'CONNOR, PC



By: Ira G. Megdal

IGM:kn  
Enclosure

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MANAGEMENT

OCT 18 2019

BOARD OF PUBLIC UTILITIES

STATE OF NEW JERSEY

BOARD OF PUBLIC UTILITIES

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OCT 18 2019

BOARD OF PUBLIC UTILITIES  
TRENTON, NJ

IN THE MATTER OF THE BOARD OF PUBLIC UTILITIES OFFSHORE WIND SOLICITATION FOR 1,100 MW – EVALUATION OF THE OFFSHORE WIND APPLICATIONS : BPU DOCKET NO.: Q018121289  
: AFFIDAVIT OF  
: JENS GRAVGAARD

Jens Graygaard, of full age, states:

1. I am the Project Development Director of Ocean Wind, LLC (“Ocean Wind”) and I am authorized to make this Affidavit on behalf of Ocean Wind.

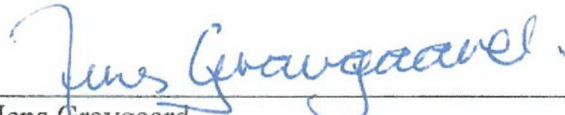
2. On October 15, 2019, Ocean Wind filed with the New Jersey Board of Public Utilities (the “BPU” or “Board”) its Response to Clarifying Questions Set (Round 1) Pertaining to Ocean Wind’s Petition for Approval (the “Response”).

3. With this Affidavit, Ocean Wind is filing a Public Copy and a Confidential Copy of the Response. All of the information redacted by Ocean Wind in the Public Copy was redacted because the portions redacted are Trade Secrets of Ocean Wind. The information reveals commercially-sensitive information about Ørsted’s approach to engineering, negotiating and laying out a wind farm; selection of a turbine; and the financial impacts of turbine selection. The information also addresses how Ørsted includes this information in its financial projections in developing bids and in developing regulatory submissions. If competitors of Ørsted had this information they could more effectively compete against Ørsted. All of this information would assist competitors in bid development. In addition, we have provided confidential information obtained from our suppliers. If publicly disclosed this might have a chilling effect upon suppliers providing information or possibly making some reluctant to deal with us. This could cause significant financial harm to Ørsted.

4. Specifically, the information redacted consists of practices, processes, commercial methods, financial planning, regulatory processing, engineering and design, or compilations of information not generally known or reasonably ascertainable by others by virtue of which Ocean Wind and its affiliates obtain an economic advantage over their competitors. This is valuable commercial information that provides Ocean Wind and its affiliates with an advantage over competitors who do not have that information, and is not generally available.

5. These Trade Secrets are exempt from disclosure under the Open Public Records Act, N.J.S.A. 47:1A-1 et seq. and the Board's regulations at N.J.A.C. 14:1-12.1(b).

6. The information redacted from the Public Copy should remain confidential until Ocean Wind agrees otherwise.

  
Jens Gravgaard

Dated: October 17, 2019

Sworn to and subscribed before me  
this 17<sup>th</sup> day of October, 2019.

GREGORY EISENSTARK  
Notary ATTORNEY-AT-LAW  
OF THE STATE OF  
NEW JERSEY

This Affidavit is being submitted in facsimile form. The undersigned attorney, Ira G. Megdal, certifies that the affiant acknowledge the genuineness of the signature and that the Affidavit or a copy with an original signature affixed will be filed if requested by the Board of Public Utilities.

  
Ira G. Megdal, Esquire





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MAIL ROOM

OCT 18 2019

BOARD OF PUBLIC UTILITIES  
TRENTON, NJ

CONFIDENTIAL INFORMATION

IN THE MATTER OF THE BOARD OF :  
 PUBLIC UTILITIES OFFSHORE WIND :  
 SOLICITATION FOR 1,100 MW – :  
 EVALUATION OF THE OFFSHORE : BPU DOCKET NO.: QO18121289  
 WIND APPLICATIONS :

**Ocean Wind's Response to Clarifying Question Set (Round 1)  
 Pertaining to Ocean Wind's Petition for Approval**

- 1. Please provide a detailed plan and schedule for the certification of the 12 MW GE WTG and any additional material components.**

As detailed in the October 4, 2019 Petition, Ørsted has extensive experience with bringing new turbines to market, including coordinating with turbine suppliers [REDACTED]. The GE Haliade-X received a Prototype Certificate on May 19, 2019 and is currently being installed in the port of Rotterdam.

GE Has represented to Ørsted that a Type Certificate is expected in Q3 of 2020. [REDACTED]

[REDACTED]

This is a planned date and not presently a firm milestone, since the [REDACTED] is still being negotiated.

- 2. Please provide, with all work papers and documentation, the estimated impacts the Petition will have on project costs including project capital costs (CAPEX) and project operation and maintenance costs and operating expenses (OPEX) due to the proposed change in turbine.**

The Project's actual CAPEX and OPEX will not be definitively known until its construction is completed and it achieves commercial operations. Per the terms of the Ocean Wind Application and the June 21 Order, with the exception of system upgrade costs for interconnection, Ocean Wind bears all risk associated with cost increases and, correspondingly, all benefit associated with cost decreases.

The change to the GE WTG broadly affects the Project's CAPEX. While it does result in the need for fewer wind turbines, foundations and array cables, each of these components are significantly larger and thus more costly on a per-unit basis than would have been the case with the smaller Design Basis WTG. Additionally, it requires the need for an equivalent amount of onshore real estate to support construction and operations, and the pool of available vessels that can support its installation, given the larger size of components.



[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

3. Please specify the number of 12 MW GE WTG turbines to be used for Ocean Wind and the revised layout of turbines including the distance between turbines and include a diagram showing the revised Ocean Wind project layout.

Ocean Wind currently plans to install [REDACTED]. For context, our OREC Application contemplated installation of [REDACTED] using the design basis turbines. Per the terms of the Application, no WTGs will be located less than 15 miles from shore. The final layout, number of WTGs and distance between WTGs will be definitely established in connection with the final engineering and permitting of the Project on the schedule set forth in the Application. [REDACTED]

4. Please provide Ocean Wind's (not necessarily GE's) revised estimated capacity factor using the 12 MW GE WTG versus the turbine model originally proposed in Ocean Wind's application. Please include all work papers and documentation demonstrating Ocean Wind's capacity factor calculation.

We include the responses to Clarifying Questions 4 and 11 in this response. For the purposes of the Application and our subsequent engineering, we have defined capacity factor and energy production at the level of the full 1,100 MW wind farm. As noted in the Application, production assessments continue to change during the ongoing development of the Project based on, amongst other things, changes in wind farm layout due to engineering and/or permitting considerations, updated technical configurations and additional wind data. As also noted in the Application, all production estimates have been prepared on a "P50" basis. "P" values refer to the probability of a level of energy output. "P50" refers to the 50th percentile and means that there is a 50% chance that the actual output will be greater than this amount and a 50% chance that the actual output will be less than this amount. Accordingly, in any given year, actual production may be higher or lower than the "P50" value. Ocean Wind's current P50 estimated net AEP and P50 estimated net capacity factor using the 12MW GE turbine is summarized in the table below.

	P50 Estimated Net Annual Energy Production GWh/year	P50 Estimated Net Capacity Factor (%)
Design Basis WTG	[REDACTED]	[REDACTED]
GE 12.0MW	[REDACTED]	[REDACTED]

- [REDACTED]
5. As a result of any capacity factor changes, please quantify any increased market revenues (capacity and energy) that will be returned to New Jersey ratepayers, per N.J.A.C. 14:8-6.6, caused by the switch to the 12 MW GE WTG. Provide all work papers and documentation to support this calculation.

As detailed in Ocean Wind's letter to BPU Staff dated July 9, 2019, there remain outstanding questions for the Project and BPU to jointly clarify [REDACTED]

[REDACTED] The actual market revenues to be returned to New Jersey ratepayers depend upon the clarification of such issues, which Ocean Wind expects to be addressed in discussions with the BPU staff prior to the commencement of commercial operations.

In response to this question, Ocean Wind has prepared a pro forma revision to Attachment 5.1, attached hereto, based on the expected market rates provided in the OREC application guidance document and the revised P50 energy production estimates provided in response to Clarifying Question 4, above. The figures included in the revised attachment do not include any consideration of the effects of the [REDACTED]

[REDACTED] and are not intended to affect or inform future discussions of the same between Ocean Wind and the BPU staff.

Given that these estimates are based on a P50 energy production estimate, described in our response to Clarifying Question 4, these estimates should also be considered P50, meaning that there is an equal chance, in any year, that actual revenues could be higher or lower, assuming the given power price forecast, *ceteris paribus*.

[REDACTED]

6. Please explain, and provide documentation on, the anticipated impacts on Project Financing. If there is no anticipated impact, please provide details and documentation as to why.

The proposed change in turbine has no anticipated impact on the financing of the project. [REDACTED]

[REDACTED]

As described in the associated Petition, a comprehensive technical due diligence process and risk assessment has been undertaken to assess the suitability of the turbine for the project, and no material adverse impacts on project risk from the application of the turbine are foreseen. As such, Ørsted anticipates no impact on the financing approach and required return level, as articulated in the original bid submission, from the proposed change in turbine.



Also as previously described in the OREC application and subsequent Clarifying Question responses, Ørsted and PSEG Renewable Generation LLC (PSEG Renewable) have entered into a memorandum of understanding (MOU) pursuant to which PSEG Renewable has the right to acquire up to [REDACTED] (the Project) subject to certain terms and conditions. In the event that PSEG elects to participate in Ocean Wind as an equity owner, PSEG Renewable represents that it will contribute capital in a manner previously described.

- 7. Please provide a schematic rendering showing the anticipated visibility of the 12 MW GE WTG from shore, and how that visibility will change compared to the originally proposed turbine. Please provide a narrative describing this visibility and the change in visibility. Please provide Ocean Wind's approach in regards to local outreach and engagement in affected areas regarding onshore visibility of the 12 MW GE WTG, including estimated timelines of said outreach.**

See attachment 7.1 for a [REDACTED]. As detailed in the report, the science of assessing visual impacts is nuanced process that requires consideration of the context in which the subject is being viewed. In this case, the analysis concludes that, at a distance of 15 miles or more from the shore, the difference in turbine size is negligible to the naked eye. As a result, there is not a material difference between the geographic extent of visibility between (a) the 1,100 MW plant built with the [REDACTED] and (b) the 1,100 MW plant built with the 12 MW turbine. This is emphasized in attachment 7.2, which shows the visual simulations from the perspective of the beach front of Atlantic City (one of the closest points to the Project) for both the [REDACTED] and GE 12 MW size turbines.

As described in our OREC Application, Ocean Wind has also been actively engaging local coastal stakeholders in New Jersey from Cape May, Atlantic and Ocean Counties since 2016. In addition to efforts described in the OREC Application, Ocean Wind has held several meetings with towns and municipalities along the coast to discuss local project impacts, hosted three open house forums to educate communities about Project specifications, and participated in a Congressional Committee hearing held in Atlantic City in September 2019. In addition, Ocean Wind contracts with local experts to facilitate direct engagement with coastal communities and their associated elected representatives, employs visualizations and technologies to present accurate simulations from various perspectives, participates and sponsors local events to increase the number of direct audiences reached, and uses other effective methods of stakeholder engagement.

- 8. The Petition maintains that there will be no additional environmental impact. Please summarize why the 12 MW GE WTG will be equal to or better than the previously-proposed turbine in regards to the environmental impacts and provide any appropriate documentation.**

Ocean Wind provides answers to Clarifying Questions 8, 9 and 10 in this response.

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For purposes of clarification, Paragraph 2 of the Petition stated as follows: "Use of the GE WTG is not expected to have any material adverse effect on this QOWP's permitting process and schedule, because the characteristics of the GE WTG were included in the COP. Therefore, the COP's analysis of environmental impacts already accounts for WTGs of this size."

It is also stated in Paragraph 3 that: "Indeed, use of the GE WTGs may be beneficial to the permitting process because it could allow for certain factors, to be definitively established in consultation with stakeholders during the BOEM permitting process, potentially including—but not limited to—the following: an increase in spacing between WTGs; a reduced length of the installation campaign period; potential improvements in certain qualitative factors of the viewshed analysis based on fewer structures; a reduced the total affected footprint on the seabed; and reduced construction and maintenance vessel traffic.

The COP was prepared using a permitting envelope that included both the [REDACTED] and 12 MW turbines. Therefore, the environmental assessment is under review by BOEM and already considering this machine and thus the permitting process will not be affected by this change.

The Ocean Wind project will undergo a rigorous evaluation of the potential environmental impacts. It is the responsibility of the BOEM, the lead Federal Agency, to prepare an Environmental Impact Statement (EIS) in accordance with NEPA to assess the environmental impact of BOEM's action and will work collaboratively with the other Federal Agencies in their environmental reviews and assessments.

However, considering the principle impact producing factors (see the table below) Ocean Wind anticipates that potential change in the magnitude of impact that maybe reached within the EIS would be reduced or negligible for the 12 MW GE WTG compared to the [REDACTED]. This is principally driven by a reduction in the number of WTGs required to deliver 1100MW of renewable energy and the associated reduction in ancillary activities.

As discussed in our response to Clarifying Question 3, we anticipate a reduction in the turbine density within the proposed project area thereby increasing the average spacing between turbines and thereby facilitating coexistence with the fisheries community. However, final layouts and spacing will be established in the federal permitting process. Furthermore, a reduction in ancillary activities such as service vessel movement further reduces the potential interactions thereby reducing the navigation risk of collision. Fewer turbines will also reduce the temporary and permanent footprint of the project thereby further reduce the likelihood of significant detrimental change to the marine environment.

[REDACTED] The project description included in the COP was based on the design envelope principle that included the proposed 12 MW GE WTG. Therefore, we anticipate no impact on the permitting process.

An expeditious approval of the Petition from the BPU may benefit the permitting process as it would allow Ocean Wind to simplify our application prior to Scoping as fewer options will need to be described. [REDACTED]

[REDACTED] In addition, a simplified project description (referencing the GE turbine) may create efficiencies in the review and evaluation of the project by Federal Agencies.

We anticipate limited or negligible changes to the scope of required approvals under the jurisdiction of New Jersey Department of Environmental Protection.

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9. The Petition maintains that there will be no additional fisheries impact. Please explain and provide documentation why the 12 MW GE WTG will be equal to or better than the previously-proposed turbine in regards to any fisheries impacts.

Please see the answer provided in response to question 8.

10. The Petition maintains that there will be no additional permitting impacts. Please explain and provide documentation why the 12 MW GE WTG will be equal to or better than the previously-proposed turbine in regards to the permitting impacts.

Please see the answer provided in response to question 8.

11. Please provide a detailed production forecast for the proposed 12 MW GE WTG.

Please see the answer provided in response to question 4.

12. The Petition maintains that Ocean Wind's originally-proposed guarantee for local content will not change. Please provide a specific estimate on job impacts and local content. Please provide documentation that demonstrates the number and nature of local jobs and local content will be equal to or better than the previously-proposed turbine.

Ocean Wind provided expected in-state expenditures in Appendix 11-4 of the OREC Application, including [REDACTED] in capital expenditures with resulting economic impact of over [REDACTED]. Ocean Wind continues to expect approximately [REDACTED] in-state capital expenditures. As shown in response to question 2, [REDACTED]

[REDACTED] Therefore, we remain confident in our expected in-state spending consistent with the manner described in the OREC Application. As stated in the Petition, Ocean Wind also expects to continue to meet the guaranteed in-state spending and employment commitments during operations as described in the OREC application.

13. Please summarize the impacts the 12 MW GE WTG will have on ports and port development including manufacturing, development, timing and general feasibility. Please summarize communications and documentation from the [REDACTED] that the Port can accommodate the manufacture of the larger monopile foundations needed for the 12 MW GE WTG, or explain the plan for such communications.

Please summarize any available communications or documentation from EEW that the change to the 12 MW GE WTG does not affect their commitment to manufacture the monopiles at the [REDACTED] or explain the plan for such communications.

Ørsted anticipates no material change in port development or the potential for manufacturing based on the change to the GE 12 WTG.

While Ørsted has not expressly communicated with either the [REDACTED] EEW about the GE WTG, all of our prior engagement have contemplated specifications that would accommodate a turbine (and associated foundations) of this size. Together with EEW, Ørsted has established the necessary port bearing capacity for a conceptual futureproof Monopile [REDACTED]. The foundations necessary for the GE Haliade X WTG is well within this design envelope.

This concept was used to assess and establish potential necessary changes to the current upgrade of the Quay at the [REDACTED]. This input has been conveyed to the consultant responsible for the [REDACTED] upgrade project so any necessary changes can be implemented.

The Ocean Wind Monopile will have a weight of [REDACTED] all well within this limitation. Ørsted and EEW have had correspondence on the current monopile design based on the requirements of the GE WTG. The monopile design is slightly bigger both in Diameter and total weight compared to the [REDACTED] [REDACTED] [REDACTED] but it is not affecting EEW's ability to manufacture the monopiles.

14. Please provide a narrative of any estimated interconnection impacts resulting from the use of the 12 MW GE WTG. Please provide a narrative of any changes to Ocean Wind's proposed points of interconnection or interconnection strategy resulting from the use of the 12 MW GE WTG.

Ocean Wind does not anticipate any material impact on the PJM interconnection studies with the selection of the GE wind turbines. [REDACTED]

[REDACTED] Therefore, PJM will complete their interconnection studies with the wind turbine chosen for the project and no modifications of wind turbine data will be required with PJM in the future. [REDACTED]

[REDACTED] was filed recently in September 2019 and is in the feasibility phase with PJM where detailed wind turbine data is not required. Ocean Wind will provide PJM the GE wind turbine data to PJM in advance of the System Impact Study phase and this will result in no impact to the PJM study process. [REDACTED]

[REDACTED] prior to PJM completing the System Impact Study and the Facilities study. Based on prior experience with PJM, Ocean Wind is confident that this plan will avoid delays to the PJM interconnection process and execution of an ISA.

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Attachment 3.1 – Layout Changes

REDACTED



PUBLIC COPY

Attachment 3.2 – Layout 95

REDACTED

PUBLIC COPY

Attachment 3.3 – Layout 96

REDACTED

PUBLIC COPY

Attachment 4 – GE 12.0 MW Yield Assessment Report

REDACTED

PUBLIC COPY

Attachment 5.1 – Energy Market Revenue (revised)

REDACTED

PUBLIC COPY

Attachment 7.1 – 

REDACTED  
(92 Pages)



PUBLIC COPY

Attachment 7.2 – Visual Simulation

REDACTED

PUBLIC COPY

Attachment 8.1 – List of Project Activities, Impact Producing Factors, Potential Effects of Impacts from the Proposed Project and Likely Change in Impact Change Using 12MW GE Turbine

REDACTED