

LONG-TERM CONTRACTS FOR A [REDACTED] OFFSHORE WIND ENERGY PROJECT REQUEST FOR PROPOSAL APPLICATION FORM

Prepared for

**Fitchburg Gas & Electric Light Company d/b/a Unitil
Massachusetts Electric Company d/b/a National Grid
Nantucket Electric Company d/b/a National Grid
NSTAR Electric Company d/b/a Eversource Energy
(collectively, the “EDCs”)**

and

Massachusetts Department of Energy Resources

August 23, 2019

Submitted by



**One International Place, Suite 2610
Boston, MA 02110**

Portions of this proposal contain confidential, proprietary, and/or commercially sensitive information, and which accordingly have been redacted from the “Public Version” of this proposal. Bay State Wind LLC has submitted a “Confidential/Proprietary Version” of this proposal which includes the redacted information, and which should be treated as a non-public record that is exempt from disclosure pursuant to applicable laws or as expressly set forth in the Request for Proposals.

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Attachments

Attachment	Document Title	Document Type	Document Status
Attachment 5-1	DONG Energy Annual Report 2016	Financial Report	Redacted
Attachment 5-2	Ørsted Annual Report 2017	Financial Report	Redacted
Attachment 5-3	Ørsted Annual Report 2018	Financial Report	Redacted
Attachment 5-4	Eversource 2016 Financial Report	Financial Report	Redacted
Attachment 5-5	Eversource 2017 Financial Report	Financial Report	Redacted
Attachment 5-6	Eversource 2018 Financial Report	Financial Report	Redacted
Attachment 5-7	Fisheries Communication and Outreach Plan	Communication Plan	Redacted

A horizontal bar chart comparing the percentage of respondents who believe the U.S. should take more action to reduce greenhouse gas emissions, categorized by age group (18-29, 30-49, 50-69, 70+) and gender (Men, Women). The chart shows that younger age groups and women are more likely to believe in taking more action.

Age Group	Gender	Percentage
18-29	Men	85%
	Women	85%
30-49	Men	75%
	Women	75%
50-69	Men	65%
	Women	65%
70+	Men	55%
	Women	55%

Acronyms and Abbreviations

AC	alternating current
AEP	Annual Energy Production
AIS	Automatic Identification System
aMSL	above mean sea level
ASIT	Air-Sea Interaction Tower
AWEA	American Wind Energy Association
Bay State Wind	Bay State Wind LLC
Bid	this response to the RFP
Bidder	Bay State Wind LLC
BMP	best management practice
BOEM	Bureau of Ocean Management
CCIS	Capacity Capability Interconnection Standard
CDC	Commercial Development Group, Inc.
CEII	Critical Energy/Electric Infrastructure Information
CFR	Code of Federal Regulations
COP	Construction and Operations Plan
CPPD	Certification, Project, and Pricing Data
CPT	cone penetration test
CSC	CT Siting Council
CT DEEP	CT Department of Energy and Environmental Protection
CT	Connecticut
CTV	Crew Transfer Vessel
DCO	Development Consent Order
DoD	U.S. Department of Defense
DOER	Massachusetts Department of Energy Resources
DP2	dynamic positioning
DPU	Massachusetts Department of Public Utilities
DW South Fork	Deepwater South Fork, LLC; an affiliate of the Bidder
DWW Rev 1	DWW Rev 1, LLC
EDC	The Electric Distribution Companies listed on the cover page to this proposal

EIA	Environmental Impact Assessment
EMF	electric and magnetic field
EPA	U.S. Environmental Protection Agency
EPC	Engineering, Procurement, Construction
ESA	Endangered Species Act
ESI	Eversource Investment, LLC, an Owner of Bidder
Eversource	Eversource Energy, the corporate parent of ESI
FAA	Federal Aviation Administration
FCM	Forward Capacity Market
FERC	Federal Energy Regulatory Commission
FLiDAR	floating light detection and ranging
FONSI	Finding of No Significant Impact
ft	foot
GHG	greenhouse gas emissions
GIS	generation information system
GW	gigawatt
GWh/y	gigawatt-hours per year
GWSA	Global Warming Solutions Act
HDD	horizontal directional drilling
HSE	Health, Safety, and Environment
HV	high voltage
ISO-NE	ISO New England
km	kilometer
kV	kilovolt
kW	kilowatt
Lease	
LGIA	Large Generator Interconnection Agreement
LiDAR	light detection and ranging
LIHEAP	Low Income Heating Assistance Program

LIPA	Long Island Power Authority
m	meter
M.G.L.	Massachusetts General Laws
m/s	meter per second
MassDEP	Massachusetts Department of Environmental Protection
MEPA	Massachusetts Environmental Policy Act
MHC	Massachusetts Historical Commission
MOU	Memorandum of Understanding
MP	monopile
MVA	megavolt-amps
MVAr	megavolt-amps (reactive)
MW	megawatt
MWh	megawatt-hour
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NEPOOL	New England Power Pool
NHESP	Natural Heritage and Endangered Species Program
nm	nautical mile
NOAA Fisheries	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
NPCC	Northwest Power Coordinating Council
NSRA	Navigational Safety Risk Assessment
NTM	Notice to Mariners
NYSERDA	New York State Energy Research and Development Authority
O&M	operations and maintenance
OCS	Outer Continental Shelf
OEM	original equipment manufacturer
Orsted NA	Orsted North America Inc., an Owner of Bidder
Ørsted	Ørsted A/S, the corporate parent of Orsted NA
Owners	Orsted NA and ESI, the 50/50 owners of Bidder

POI	Point of Interconnection
PPA	Power Purchase Agreement
Project	Bay State Wind Project
REC	Renewable Energy Certificate
RFP	Request for Proposals For Long-Term Contracts For Offshore Wind Energy Projects
RICRMC	Rhode Island Coastal Resources Management Council
ROD	Record of Decision
RODA	Responsible Offshore Development Alliance
SAP	Site Assessment Plan
SCADA	Supervisory Control and Data Acquisition
SEMA/RI	Southern Massachusetts and Rhode Island load zone
SOV	Service Operating Vessel
SWPPP	Stormwater Pollution Prevention Plan
TP	transition piece
TSS	Traffic Separation Scheme
UHF	ultra-high frequency
USACE	U.S. Army Corps of Engineers
USCG	U.S. Coast Guard
USFWS	U.S. Fish and Wildlife Service
VHF	very high frequency
WEA	Wind Energy Area
WTG	wind turbine generator

XLPE cross-linked polyethylene

Confidentiality and Enabling Statements

Portions of this proposal contain confidential, proprietary, and/or commercially sensitive information, and which accordingly have been redacted from the “Public Version” of this proposal. Bay State Wind LLC has submitted a “Confidential/Proprietary Version” of this proposal which includes the redacted information, and which should be treated as a non-public record that is exempt from disclosure to the maximum extent permissible under applicable laws and as expressly set forth in the Request for Proposals. For convenience, confidential, proprietary, and/or commercially sensitive information has been identified through shading in the narrative portion of the Confidential/Proprietary Version this proposal.

This proposal includes information concerning the Bidder's expectations, beliefs, plans, objectives, goals, strategies, and assumptions of future events regarding Bay State Wind Project (the Project). That information constitutes "forward-looking statements" based on the current expectations, estimates, assumptions or plans of the Bidder and does not guaranty the future. These expectations, estimates, assumptions or plans may vary materially from actual results. Factors affecting the development, construction and operation of the Project are difficult to predict, many of which are beyond the Bidder's control. New factors also may emerge from time to time, and it is not possible for the Bidder to predict all of those factors, nor can the Bidder assess the impact of each factor on the Project or the extent to which any factor, or combination of factors, may cause actual results to differ materially from those contained in any forward-looking statements.

Applicant Information

Applicant:	Bay State Wind LLC	Address:	One International Place, Suite 2610 Boston, MA 02110
Contact:	Ryan Chaytors	Phone:	(617) 767-6956
		Email:	RYACH@orsted.com

1. CERTIFICATION, PROJECT AND PRICING DATA (CPPD FORM)

The Certification, Project and Pricing Data (“CPPD”) document is a Microsoft Excel workbook that is provided on the website at www.MACleanEnergy.com.

Please see the following attachments for the various CPPD forms:

- Attachment 1-1 for the GLL CPPD form (fixed)
- Attachment 1-2 for the Voluntary Agreement CPPD form (fixed)
- Attachment 1-3 for the GLL CPPD form (escalating)
- Attachment 1-4 for the Voluntary Agreement CPPD form (escalating)

See Attachment 1-5 for the Bid Fee form.

2. EXECUTIVE SUMMARY OF THE PROPOSAL

The bidder is required to provide an executive summary of the project proposal that includes a complete description of the proposed generation bid, the proposed contract term and pricing schedule, the overall project schedule and other factors the bidder deems to be important. A table summarizing proposal(s) including details such as capacity (MW), commercial online date, pricing (\$/MWh), etc. is encouraged.

2.1 Proposal Introduction

100

[illegible]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

Unmatched Offshore Wind Experience and Capabilities

[REDACTED]

Ørsted, the largest offshore wind developer and owner in the world, built the world's first offshore wind farm in 1991, off the coast of Denmark. 25 years later, Ørsted built the Block Island Wind Farm, America's first offshore wind farm, serving Rhode Island. Ørsted has constructed 5.6 gigawatts (GW) of offshore wind capacity, nearly 30 percent of globally installed offshore wind capacity, with another 4.3 GW under construction.

Ørsted has the deepest bench of technical offshore wind experts in the industry, with over 2,000 dedicated employees in our American, Danish and British offices - all devoted to ensuring the economic, technical, and environmental viability of its offshore wind projects. Ørsted's record of developing offshore wind projects on-time and on-budget is unmatched in the industry, as is its operation and maintenance organization. Ørsted embodies the complete offshore wind package – from development and engineering through procurement and construction to operation and maintenance.

Eversource, headquartered in Boston and Hartford, is the leading transmission developer in the northeast. Eversource has successfully built more than \$6 billion of energy infrastructure in the last three years. Eversource brings industry-leading experience in constructing and maintaining large energy infrastructure projects including transmission and distribution projects (involving high-voltage and extra high-voltage overhead, underground, submarine, and hybrid transmission lines, and associated terminal equipment).

Unrivaled Financial Capacity

Ørsted and Eversource are both able to take advantage of their substantial balance sheets (with a combined market capitalization of approximately \$64 billion and combined operating cash flows of currently \$3 billion annually) with strong investment-grade credit ratings to fully fund projects such as Bay State Wind.

Ørsted's financial strength combined with its proven construction and operations track record within offshore wind enables it to attract capital at very cost-efficient levels.

Eversource safely and reliably provides top tier electric and gas service and is a large cap company traded on the New York Stock Exchange, with an equity market capitalization of currently \$25 billion. Eversource has invested \$6 billion in new energy infrastructure in the past three years. Eversource maintains one of the highest credit ratings of any company in the Energy and Utility industry in the United States.

Ørsted's Unparalleled Offshore Wind Experience:

- 25+ years of experience**
- 2,000+ dedicated employees**
- Dedicated in-house EPC arm**
- 25 operational projects**
- 5.6 GW constructed capacity**
- 4 projects under construction**
- First and only major offshore wind farm decommissioning**
- First offshore U.S. wind farm**



[REDACTED]

[REDACTED]

[illegible]

[REDACTED]

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[REDACTED]

[REDACTED]

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[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

As part of the development of the Block Island Wind Farm, members of our Project team have:

- worked through the permitting process with BOEM, U.S. Army Corps of Engineers (USACE), National Ocean and Atmospheric Administration (NOAA) National Marine Fisheries Service (NOAA Fisheries), the U.S. Fish and Wildlife Service (USFWS), and the Rhode Island Coastal Resources Management Council (RICRMC); and
- engaged key stakeholders early in the process and established constructive relationships with the Wampanoag Tribe of Gay Head (Aquinnah), the Narragansett Indian Tribe, the commercial and recreational fishing community, and both regional and national environmental non-governmental agencies who advocate for the protection of marine mammals and ocean conservation.

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

Orsted, in an industry-first initiative, has partnered with the Responsible Offshore Development Alliance (RODA) to help improve communication between the commercial fishing industry and offshore wind energy developers. RODA is a broad membership-based coalition of fishing industry associations and fishing companies with an interest in improving the compatibility of new offshore development with their businesses. A core component of the partnership is the creation of a joint industry task force to explore improved approaches to project siting, design, and operation. RODA directly collaborates with relevant regulatory agencies, offshore developers, science experts, and others to coordinate science and policy approaches to managing development of the Outer Continental Shelf in a way that minimizes conflicts with existing traditional and historical fishing. This initiative provides a more structured process for further collaboration between the offshore wind and fishing industries.

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED] [REDACTED] [REDACTED] [REDACTED]	[REDACTED]
[REDACTED]	[REDACTED] [REDACTED] [REDACTED] [REDACTED]	[REDACTED]
[REDACTED]	[REDACTED] [REDACTED] [REDACTED]	[REDACTED]
[REDACTED]	[REDACTED] [REDACTED] [REDACTED] [REDACTED] [REDACTED]	[REDACTED]
[REDACTED]	[REDACTED] [REDACTED] [REDACTED]	[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

A series of horizontal bars, mostly black with some grey segments, representing a data visualization. The bars are arranged in a list-like structure, with varying lengths and positions. Some bars have a small grey segment at the beginning, while others are entirely black. The bars are set against a white background.

3. OPERATIONAL PARAMETERS

3.1 Maintenance Outage Requirements

Specify partial and complete planned outage requirements in weeks or days for all generation facilities and associated facilities required for the delivery of energy from the generation facilities to the delivery point. Also, list the number of months required for the cycle to repeat (e.g., list time interval of minor and major overhauls, and the duration of overhauls).

██████████ summarizes the planned outage requirements for the Project facilities. Detailed explanations are included in the following subsections. All outage activities have been accounted for in the CPPD form.

[illegible]

3.1.1 Wind Turbine Generators (WTGs)

[illegible]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

3.1.2 Foundations and Structures

[REDACTED]

[REDACTED]

3.1.3 Offshore Transmission Assets (Offshore Substations, Offshore Export Cables and Array Cables)

[REDACTED]

[REDACTED]

[REDACTED]

3.1.4 Onshore Transmission Assets (Onshore Substation)

The onshore substation will be monitored both remotely and locally on a continuous basis. The equipment in the onshore substation will be configured with a condition monitoring system that will sound an alarm upon detecting equipment issues.

[REDACTED]

[REDACTED]

3.2 Operating Constraints

Specify all the expected operating constraints and operational restrictions for the project (i.e., limits on the number of hours a unit may be operated per year or unit of time).

Operating constraints for the Project are primarily related to technical parameters defined by the equipment OEMs, which can be categorized by wind resources and weather conditions (see Section 4.1 for more detailed information), grid outages, and Health, Safety, and Environment issues.

The below listed operating constraints and technical parameters have been accounted for in the availability and Annual Energy Production (AEP) assessment and are reflected in the CPPD (Part V – Operational Information).

3.2.1 Technical Parameters

- [REDACTED]
- [REDACTED]
- [REDACTED]

3.2.2 Offshore Accessibility for Maintenance Work

Accessibility is primarily determined by wave height for sailing operations, and wind speed and visibility conditions for flying operations. Typically, outages are planned around low wind periods and good offshore accessibility.

3.3 Reliability

Describe how the proposal would provide enhanced electricity reliability to Massachusetts, including its impact on transmission constraints.

The Project is designed to markedly enhance electric system reliability, particularly during the winter months when electric and natural gas demand experience a coincidental peak resulting in New England's gas pipeline infrastructure being placed under constraint. As a large source of stable, predictable, and reliable clean energy, injecting directly into the Southern Massachusetts and Rhode Island (SEMA/RI) load zone, the Project will help alleviate these winter gas pipeline constraints. The Project's capacity factor is greatest during the winter months making it particularly well suited to mitigating winter price spikes and volatility as well as winter transmission constraints.

The Project's capabilities for enhancing electricity reliability in Massachusetts are further outlined in Table 3.2 and Sections 3.3.1 through 3.3.6 below. These capabilities will improve the reliability and efficiency of the ISO New England (ISO-NE) system.

Table 3.2 Benefits to the ISO-NE System of the Project

Capability	Grid Stability	Power System Balancing	Grid Optimization
Sub-second speed of frequency response	✓	✓	
Delivery of reactive power and voltage support	✓		✓
Fast ramp-down/de-load	✓	✓	
Fast ramp-up at all operating ranges	✓	✓	
Automated response in system events	✓	✓	✓
Real-time "available power estimation"	✓	✓	

3.3.1 Contribution to Reducing Winter Electricity Price Spikes

Extreme weather patterns have amplified constraints on New England's natural gas pipelines and ultimately have caused spikes in wholesale energy prices, primarily during winter cold snaps. This dynamic was apparent during the Polar Vortex of Winter 2013/2014 when ISO-NE saw wholesale prices soar. During this snap, January natural gas prices averaged over \$24/million metric British thermal units (MMBTU), the highest monthly price in more than 10 years, and on January 28, 2014, prices exceeded \$73/MMBTU.

[REDACTED]

To the extent offshore wind displaces gas-fired generation during the peak hours of winter months and reduces the fuel demand of natural gas-fired generators, the Project will alleviate pipeline congestion, exerting downward pressure on delivered gas costs, *i.e.* the primary driver of wholesale energy prices in New England.

The Bidder's winter season production will also supplant the cost and emissions of either oil-fueled or dual-fueled power plants that burn oil when natural gas is unavailable or uneconomic. In the winter of 2017/2018, natural gas supplies became very tight as temperatures plummeted, and over a 2-week period customers paid an additional \$700 million dollars in wholesale electricity costs. Because natural gas was unavailable for electricity use, 2 million barrels or 85-90 million gallons of oil was dispatched leading to an increase of 1 million tons of greenhouse gas emissions. This equals 2 times the amount of oil that was burned in all of 2016 and 4 times what had been burned in 2017 until the cold snap.

[REDACTED]

With the risk of such events expected to increase as non-gas fired resources in the region continue to retire and be replaced primarily by gas-fired capacity, the introduction of new, clean, non-gas fired generation is essential.

3.3.2 Avoiding Transmission Constraints

[REDACTED]

[REDACTED]

[REDACTED]

3.3.4 Enhancing Electricity Reliability

The scale of the Project will help effectively bridge the gap created by retirement of some of New England's largest generators and increase the diversity of the region's energy mix, thereby making it more reliable and resilient. Indeed, some of the Project's key reliability benefits stem from the fact that the total nameplate capacity is spread across all WTGs, each of which act as an independent power plant. As such, even if one of these power plants fail, the remaining WTG will continue to produce power. This reliability strength is amplified by the unparalleled O&M experience of Orsted NA and ESI (the Owners), which allows the Bidder to maintain availability of the Project at a rate well above industry average.

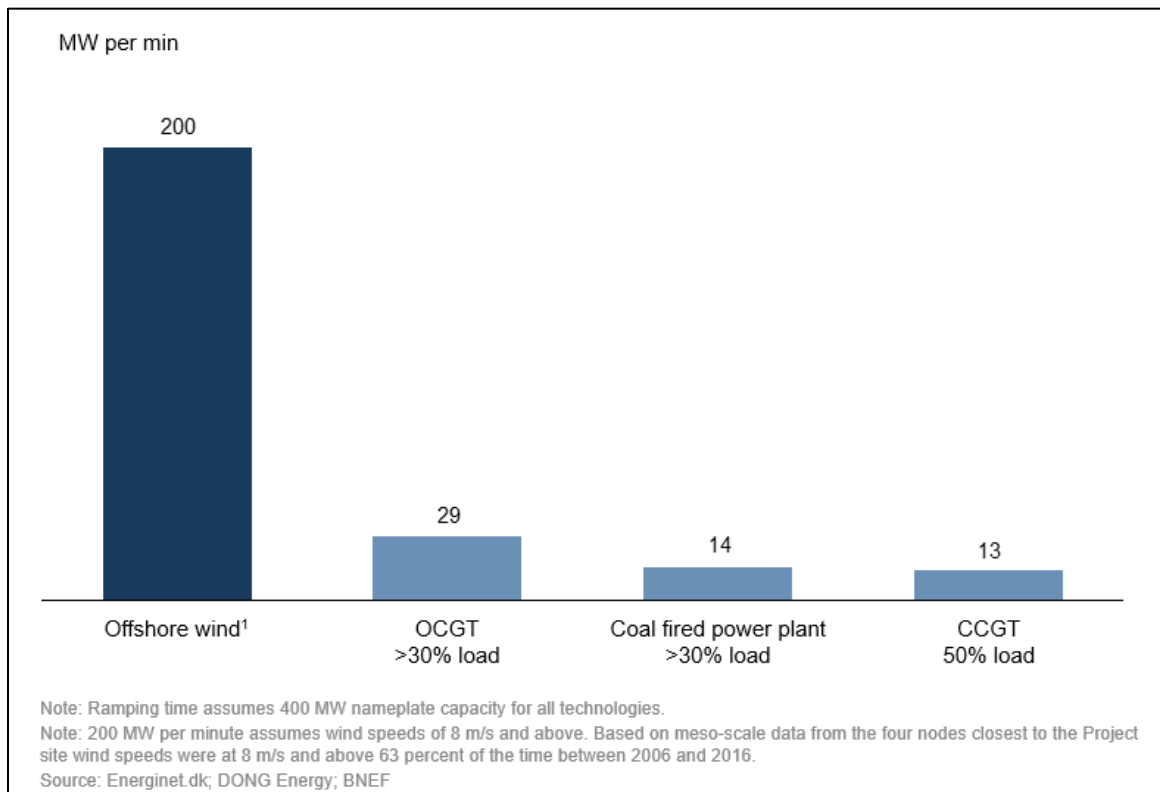
3.3.5 Project Benefits to the Ancillary Service Market

The Project will deploy software that allows it to automatically adjust its power output in response to the onshore grid frequency effectively providing inertial response to the grid. Furthermore, the Project has the capability to inject or absorb reactive power at all operating ranges. By utilizing this capability, the Project will aid ISO-NE in managing voltage on the transmission system without requiring additional reactive compensation.

This significantly improves the stability of the system and aids ISO-NE in avoiding cascaded trips and partial blackouts.

3.3.6 Project's Operating Flexibility Benefits for ISO-NE

The Project will be capable of quickly changing its power output from the power available at the given wind speed. If required, the Project could undergo a fast power ramp down and operate at lower stable export levels. This would allow ISO-NE to manage system electric demand needs and ensure the security of supply during high renewable production or from excess generation to stabilize the onshore grid frequency. Technically, a faster response provider can offset the need for larger volumes of response (i.e., a 1 MW fast response may have the equivalent impact of a 1.5 MW slow response). Additionally, the fast-acting capability of WTGs can also help stabilize grid oscillations by damping the power oscillating at certain frequencies. By utilizing this proven capability from the WTGs, ISO-NE will have access to a more flexible resource and can further optimize the frequency response needs (see Figure 3.1).

Figure 3.1 Up- and Downwards Regulation of Production

3.4 Moderation of System Peak Load

Describe how the proposal would contribute to moderating system peak load requirements and provide the following information:

- i. Estimated average output for each summer period (June- September) from 1:00 - 6:00 pm
- ii. Estimated average output for each winter period (October-May) from 5:00 – 7:00 pm

██████████ of clean energy generating capacity to the region's main load centers, the Project will help moderate system peak load requirements throughout its ██████████ lifetime, particularly during winter peak loads, as described in Section 3.3.1. In addition, the Bidder's proprietary site layout optimization tools enable it to maximize production from the Project, allowing the Project to deliver more energy to the grid in more hours of the year.

██████████ As such, the Project is able to contribute significantly to moderating system peak load, thereby creating value for Massachusetts customers.

Attachment 3-2 quantifies the Project's contribution to moderating system peak load requirements and contains:

- 1) Net hourly energy production, based on the wind resource data (a 12 x 24 energy projection) at P50².

² P50 refers to the confidence level of the probability of the modeled data.

- 2) Estimated average output for each summer period (June-September) from 1:00 – 6:00 pm.
- 3) Estimated average output for each winter period (October-May) from 5:00 – 7:00 pm.



The Project's net production profile for an average day (24 hours) in June and January at P50 are provided in [REDACTED] and [REDACTED]. The peak hours, as defined in the RFP, have been highlighted.

³ Please note that the winter and summer periods are defined per clauses (i) and (ii) in Section 7.4 with summer being June – September and Winter being October – May.



4. ENERGY RESOURCE AND DELIVERY PLAN

4.1 Energy Resource Plan

For Eligible Facilities, the bidder is required to provide an energy resource or fuel supply plan for its proposed project, including supporting documentation. The fuel supply/energy resource profile information should be consistent with the type of technology/resource option proposed and the term proposed. Bidders should respond to all information requests which are relevant to the bid in a timely manner.

All Projects

Provide a summary of all collected wind data for the proposed site. Identify when and how (e.g. meteorological mast or LiDAR – for “Light Detection and Ranging”) the data was collected and by whom.

The Bidder has dedicated significant resources to wind resource data collection for the Project, as well as the modeling and analysis of this data into AEP estimates.

[REDACTED]

[REDACTED] In addition, the Bidder continues to gather data through its long-term development of the Project Area, its experience developing and operating the nearby Block Island Wind Farm, and its ongoing development of the nearby or co-located Revolution Wind, South Fork, and Sunrise Wind projects. [REDACTED]

[REDACTED]

The Bidder’s wind yield assessment team applied production and electrical losses as well as operations and maintenance related outages, based on Ørsted’s more than two decades of experience in wind farm operations, to arrive at the projected net AEP for the Project.

The following section provides a detailed summary of the data that support the Bidder’s energy yield estimate. Further, below is a summary table of wind data resources used by the Bidder to support the Project’s energy resource plan.

[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]

4.1.1 Wind Data

The Bidder has compiled Primary and Reference wind data in connection with its assessment of the Project site's wind energy resource.

The Primary data set provides a statistical description of the wind conditions at the Project site.

[REDACTED]

[REDACTED]

To account for deviations between the mean wind speed in the measurement period and the historical long-term mean wind speed, the Bidder utilizes modeled mesoscale Reference data.

[REDACTED]

Primary Data

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

Arriving at Final Long-Term Mean Wind Speed

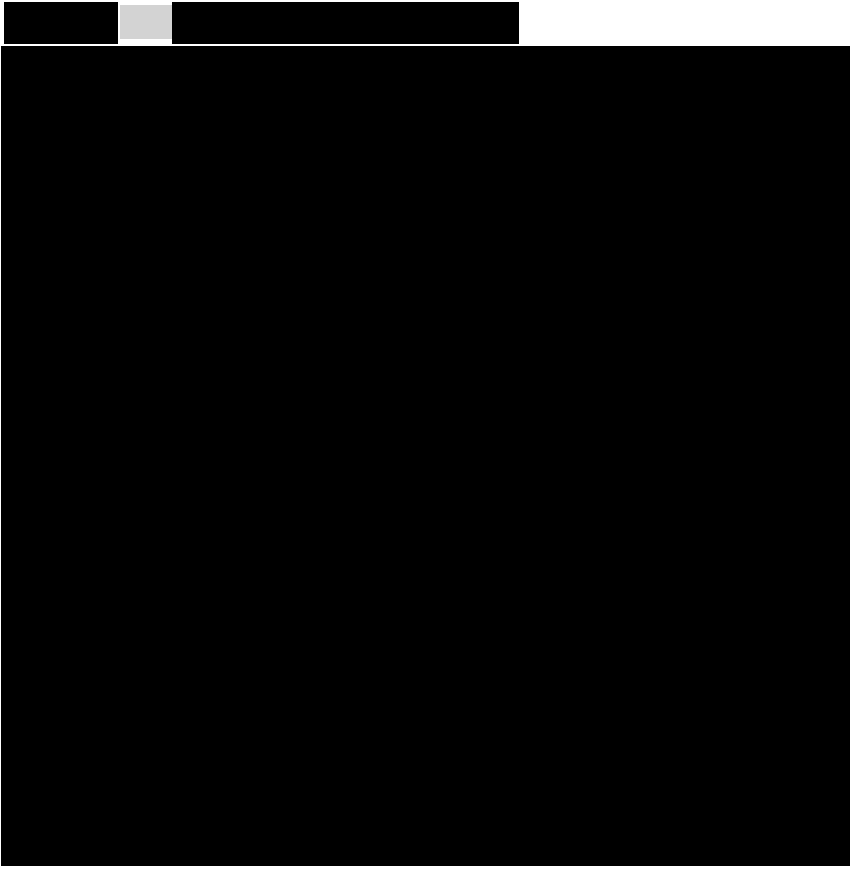
To derive the long-term wind climate at the site the following steps are taken in the analysis:

- [Redacted]
- [Redacted]
- The mean wind speed is then corrected using the mesoscale data as long-term reference. This accounts for differences between the mean wind speed in the measurement period and the long-term historical mean wind speed.
- [Redacted]

[Redacted]

[Redacted]	[Redacted]	[Redacted]	[Redacted]	[Redacted]
[Redacted]	[Redacted]	[Redacted]	[Redacted]	[Redacted]
[Redacted]	[Redacted]	[Redacted]	[Redacted]	[Redacted]
[Redacted]	[Redacted]	[Redacted]	[Redacted]	[Redacted]
[Redacted]	[Redacted]	[Redacted]	[Redacted]	[Redacted]

[Redacted]



Indicate where the data was collected and its proximity to the proposed facility site. Include an identification of the location and height for the anemometers and/or “range gate” heights for sensing by LiDAR that were used to arrive at an assessment of the site generation capability.

See the preceding description of where the data was collected and its proximity to the proposed site.

Describe any additional wind data collection efforts that are planned or ongoing.

[REDACTED]

Provide (a) at least one year of hourly wind resource data. Real Data collected from the site is preferred, though projected data is permissible. Methodology must also be included and (b) a wind resource assessment report for the proposed facility from a qualified unaffiliated third party wind resource assessment firm. Include an analysis of the available wind data which addresses the relationship between wind conditions and electrical output. Provide a projection of net annual energy production, including projections of average net hourly energy production, based on the wind resource data (a 12 x 24 energy projection) at both P50 and P90 levels.

The Bidder has provided (a) more than one year of hourly wind resource data (Attachment 4-1), and (b) a third-party wind resource assessment report from [REDACTED] (Attachment 4-4).

The wind resource analysis summarized above together with the site-adjusted power curve (see below) gives the gross energy production of the Project. This is the annual production to be expected in the absence of any losses.

The gross production is then adjusted to account for expected losses. The largest of these is due to wake losses, the shadowing effect between the WTGs. The wake is calculated using Ørsted’s in-house modeling tools that have been validated against data production data from a large number of offshore wind power plants. The wake loss depends on the site-specific wind conditions. Similarly, an electrical loss is modelled from the electrical infrastructure of the Project, while availabilities of the WTGs and the other components of the wind power plant are estimated based on Ørsted’s vast experience and the Project’s O&M plan.

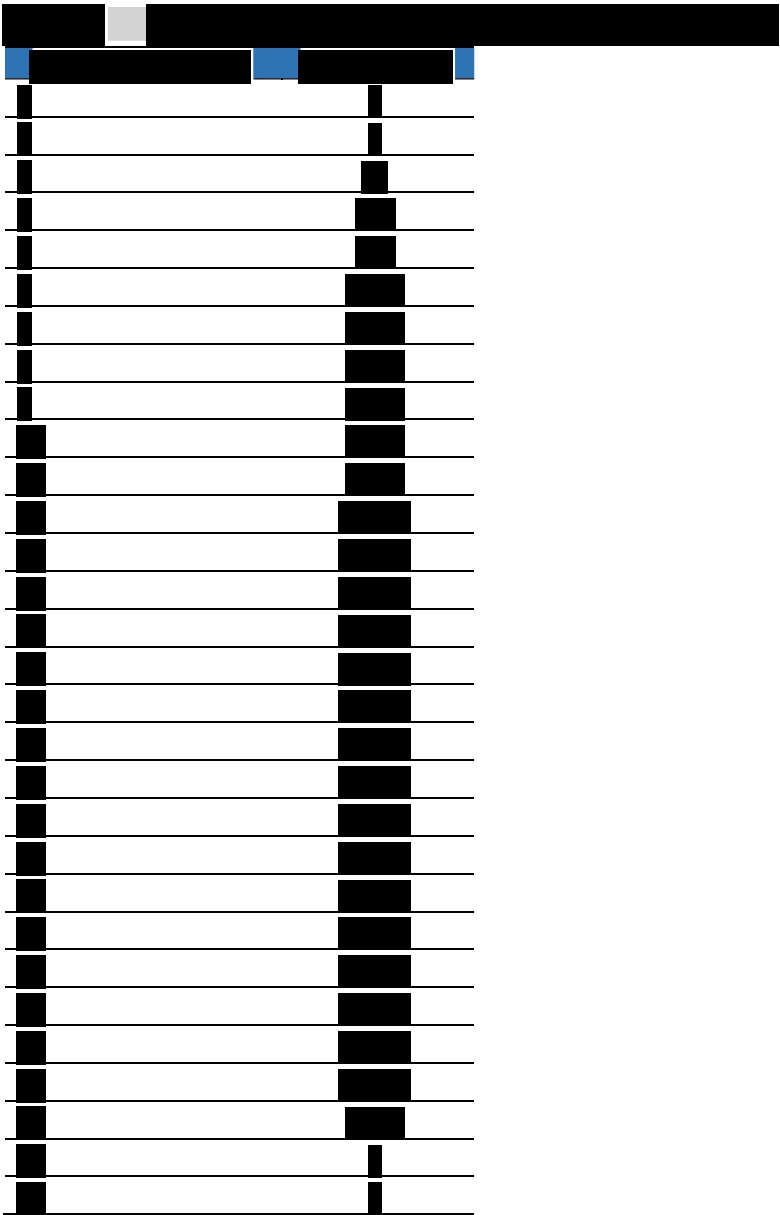
[REDACTED]

Attachment 3-2 contains both the P50 and P90 12X24 data.

Provide a site-adjusted power curve. Each curve should list the elevation, temperature and air density used.

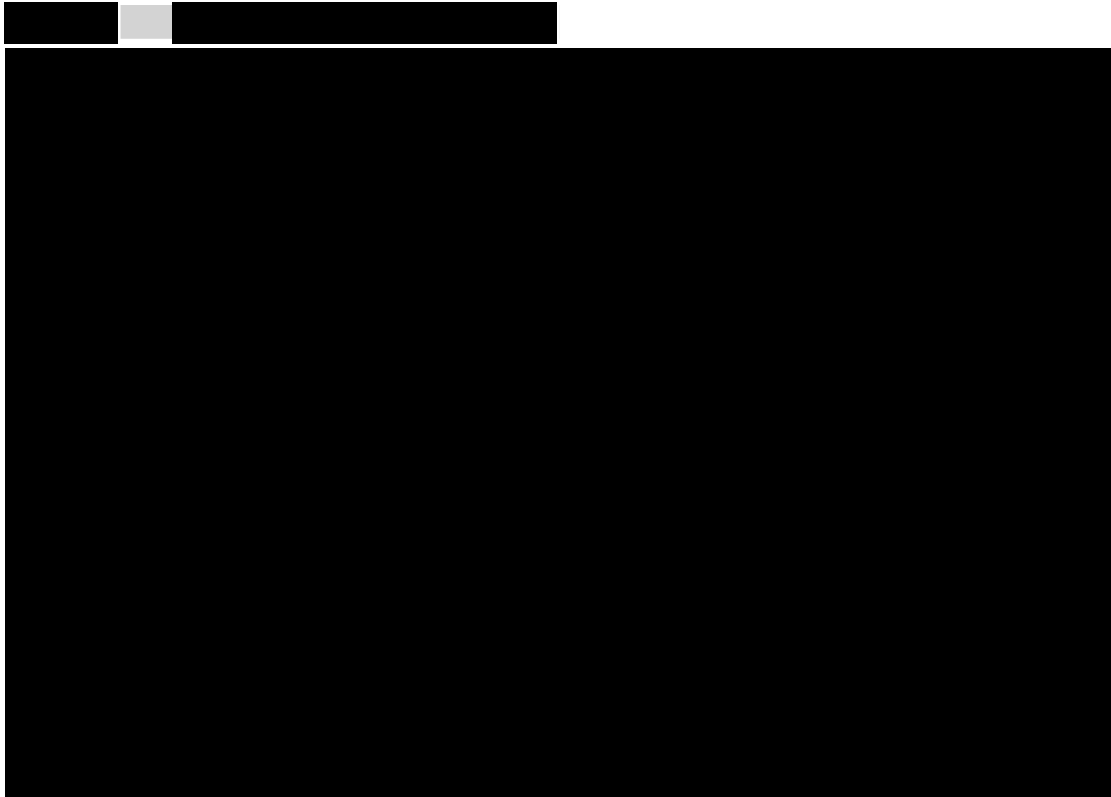
4.1.2 Power Curve

A site-adjusted power curve is provided below in [REDACTED] which addresses the relationship between wind conditions and electrical output and depicted in [REDACTED]



The power curve is the relationship between the wind speed and the produced power for a single WTG as calculated following industry standard procedures (International Electrotechnical Commission 61400-12-1). The site-adjusted power curve is specified at the mean air density at the

[Redacted text block]



Identify the assumptions for losses in the calculation of projected annual energy production, including each element in the calculation losses.

4.1.3 Physical, Environmental and Operational Efficiencies and Availabilities

The following physical, environmental, and operational losses are assumed in calculating the Project's projected AEP.

Wake. Each WTG creates a turbulent wake effect which in a wind farm can impact downwind WTGs. The N.O. Jensen model is used to calculate the wake efficiency using the specified power and thrust curves for each WTG.

[REDACTED]

Blade Surface Roughness. Contamination of the rotor by dirt and insects will lead to an increase in the surface roughness, which in turn leads to lower aerodynamic efficiency of the blade. Offshore, due to the remote location, the occurrence of blade contamination due to dirt and insects is expected to be quite low. In addition, the expected high frequency of sustained periods of rain will act as a very efficient cleaning system for the blades, reducing any contamination to a negligible level. It has been also assessed that the risk of icing is negligible at the wind farm location.

[REDACTED]

Representativeness of Wind Conditions. This adjustment factor accounts for potential adjustments to the power curve due to the differences between the wind conditions under

which the power curve is measured and under which the wind turbines operate within the offshore wind farm. [REDACTED]

Induction Zone Adjustment. This adjustment accounts for the free wind speed, as measured during power curve tests, being affected by the WTG induction zone, also known as compression zone effect, which have a boosting effect. [REDACTED]

Electrical Efficiency. [REDACTED] The factor includes efficiencies gained from the use of cutting-edge technologies such as the WTG transformer, array cables, export cables and substations (transformer units, reactors and filters).

Turbine Availability. [REDACTED] This factor takes account of scheduled and unscheduled losses due to downtime of the WTGs. Ramp-up adjustments are accounted during the early operation start-up.

Array Cable Availability. [REDACTED] Issues that may affect availability are the design of the cable entry system and ground conditions on the site.

Substation Availability. [REDACTED]

Export Cable Availability. [REDACTED]

Grid Availability. [REDACTED]

4.2 Offshore Wind Energy Generation Delivery Plan

Please provide an energy delivery plan and profile for the proposed project, including supporting documentation. The energy delivery profile must provide the expected Offshore Wind Energy Generation to be delivered into the ISO-NE market settlement system and permit the Evaluation Team to determine the reasonableness of the projections for purposes of Sections 2.2.1.3 Eligible Bid Categories and 2.2.1.7 Capacity Requirements, and 2.2.1.8 Interconnection and Delivery Requirements of the RFP. Such information should be consistent with the energy resource plan provided above and also considering any and all constraints to physical delivery into ISO-NE.

The energy delivery plan is based on the input and methodology presented in Sections 3.4 and 4.1.2, and it is provided as a P50 average year expectation for the hourly profile (see

Attachment 3-2). See Section 6 for the absence of constraints to physical delivery into ISO-NE.

4.3 REC/Environmental Attribute Delivery Plan

Please provide documentation and information demonstrating that the project will Deliver GIS Certificates representing those RECs or Environmental Attributes. Please describe whether transfer of all GIS Certificates is authorized under the current ISO-NE GIS rules and protocols, or if a rule or protocol change is required. To the extent such change is required, please provide details regarding the proposal and the process for implementing the change.

As an Offshore Wind Energy Generation facility, the Project will produce Class-1 Renewable Energy Certificates (RECs) (see Section 7.7).

The Bidder will use the New England Power Pool (NEPOOL)-generation information system (GIS) to track these Class-1 RECs and their environmental attributes as they are delivered throughout the lifetime of the Project. While the Bidder has not currently registered with NEPOOL-GIS, it will do so at the appropriate time to allow it to deliver GIS Certificates as required by the RFP. As required by the form of Power Purchase Agreement (PPA), the Bidder will deliver RECs either directly into each Electric Distribution Company's (EDC's) account or execute an irrevocable forward transfer certificate. Documentation will be provided once available.

4.4 Energy Storage System Operations

Project Summary: Please provide the following:

Identify if New or Existing Facility, or an upgrade to Existing Facility: _____

Technology Type

Point of Interconnection

Deliverability Restrictions (if any)

Nameplate MW AC (at 100% project completion)

Net Contract MW AC (at 100% project completion)

Storage Energy (MWh)

Discharge Duration (hours)

Full Duty Cycle Efficiency (%)

Required Cycles per year/per day

Expected annual capacity degradation (%)

Specific Battery Chemistry (if applicable)

Describe the operation of the proposed Energy Storage System: (i.e. run hour limitations, ramp rates, spinning reserves, regulation up, regulation down). Please provide proposed operational management terms that memorialize the operational commitments of the facility.

Describe the location of the Energy Storage System, the anticipated interconnection point, and the value of the relative proximity of the system to the Offshore Wind Energy Generation facility, including any decreased risk of curtailment and/or deferred investment for the Offshore Wind Energy Generation Facility.

Describe the proposed technology and equipment manufacturer by name and model (include inverter characteristics if applicable).

Describe the viability and operational reliability of the proposed technology and track record of the manufacturer. Provide examples of similar applications of the same size and scope.

Please provide an energy delivery plan and profile for the proposed project, including supporting documentation. This documentation may be either an hourly storage use schedule separately from the hourly wind delivery schedule, or the following parameters of the storage technology that will be used in conjunction with the bid: Charge rate (MW), Discharge rate (MW), Storage capacity (MWh), Round-trip efficiency (%). The energy delivery profile must provide the expected Offshore Wind Energy Generation to be delivered into the ISO-NE market settlement system by the Energy Storage System and permit the Evaluation Team to determine the reasonableness of your projections. Such information should be consistent with the energy resource plan provided above and also considering any and all constraints to physical delivery into ISO-NE.

Describe the conformance of the operation of the Energy Storage System with ISO-NE's implementation of FERC order 841, including whether the proposed Energy Storage System will be classified as a Binary Storage Facility or Continuous Storage Facility, the designation of the ISO-NE Markets that the Energy Storage System would participate in, and the plan to operate in multiple ISO-NE Markets.

Please list all anticipated revenue streams associated with the Energy Storage System

- For existing facilities
 - describe existing operations, revenues, and participation in ISO-NE Markets
 - describe any planned changes in operation, participation in ISO-NE Markets and revenue streams
- Please describe (a) (i) the specific services and/or products that will be provided to the Distribution Companies due to the proposed operation of the Energy Storage System under your proposal and (ii) the specific costs to be paid by the Distribution Companies through the power purchase agreement for such services and/or products and (b) a statement of how the proposal complies with RFP requirements.

Please describe any additional benefits the Energy Storage System may provide not captured in the benefits provided through the operational commitments, including but not limited to,

- any non-monetizable benefits including but not limited to price changes in capacity and ancillary services markets, reduction in future market needs such as reserves or ramping, and increased capacity rating for Offshore Wind Energy Generation facility
- Emission reductions associated with the operation of the Energy Storage System and providing emission-free resources to the ancillary service markets including reserves and frequency regulation
- Value of procuring the Energy Storage System at the same time and as paired with the Offshore Wind Energy Generation facility.

Not applicable.

5. FINANCIAL/LEGAL

Bidders are required to demonstrate the financial viability of their proposed project. Bidders should provide the following information:

Ørsted and Eversource are publicly traded companies with a combined market capitalization of approximately \$64 billion and combined operating cash flows of approximately \$3 billion annually.

Ørsted is the global leader in financing, constructing and operating offshore wind. It has constructed 5.6 GW of generation over the past 25 years across numerous markets, with another 4.3 GW under construction. Eversource is an industry leader in the development and operation of large-scale transmission and distribution projects. With 8,000 employees, the Bidder's team has significant experience delivering projects throughout the northeast U.S.

As a result of the completed acquisition of Deepwater Wind, the Bidder's team also includes the individuals responsible for the first ever financing of an offshore wind farm in the United States and the first tax equity financing of an offshore wind farm anywhere in the world; unique expertise that will further inform the financial planning of projects in the Owners' U.S. portfolio.

The financial strength of Ørsted and Eversource – and by extension the Bidder's financial strength – is described in greater detail in the following responses.

5.1 PPA Provides for Predictable, Long-Term Revenue Stream

5.1 Each bidder is required to submit information and documentation that demonstrates that a long term contract resulting from this RFP Process would either permit the bidder to finance its proposal that would otherwise not be financeable, or assist the bidder in obtaining financing of its proposal.

A long-term PPA awarded through this RFP process will create a predictable, long-term revenue stream that appropriately values clean, renewable energy from offshore wind generation.

See Sections 5.3 and 5.13 for details regarding the financing plan and the requirement to secure a PPA prior to the initiation of construction of the Project.

5.2 Business Entity Structure

5.2 Please provide a description of the business entity structure of the bidder's organization from a financial and legal perspective, including all general and limited partners, officers, directors, managers, members and shareholders, involvement of any subsidiaries supporting the project, and the providers of equity and debt during project development. Provide an organization chart showing the relationship between the equity and debt participants and an explanation of the relationships. For jointly owned facilities, identify all owners and their respective interests, and document the Bidder's right to submit a binding proposal.

Orsted NA and ESI (together, the Owners) have entered into a 50/50 joint venture through which they control the Bidder and its affiliates, and hold the Lease within which the Project will be located.⁴ [REDACTED]

- [REDACTED]
- [REDACTED]

Specifically, the Owners jointly own the Bidder's parent company (and sole member-manager), Bay State HoldCo LLC. Neither the Bidder nor Bay State HoldCo LLC has any other members or shareholders.

Bay State HoldCo LLC is managed by a four-person board of directors who constitute "managers" within the meaning of the Delaware Limited Liability Company Act. At the direction and under the supervision of the directors of Bay State HoldCo LLC, the Bidder's project-development activities are facilitated by a four-person steering committee.

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

The Bidder has been authorized to submit this proposal by a written consent from its sole member, Bay State HoldCo LLC, a copy of which is [REDACTED]

5.3 Description of Financing Plan

5.3 Please provide a description of the financing plan for the project, including construction and term financing. The financing plan should address the following:

- i. Who will finance the project (or are being considered to finance the project) and the related financing mechanism or mechanisms that will be used (i.e. convertible debenture, equity or other) including repayment schedules and conversion features

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

- ii. The project's existing initial financial structure and projected financial structure

[REDACTED]

- iii. Expected sources of debt and equity financing

[REDACTED]

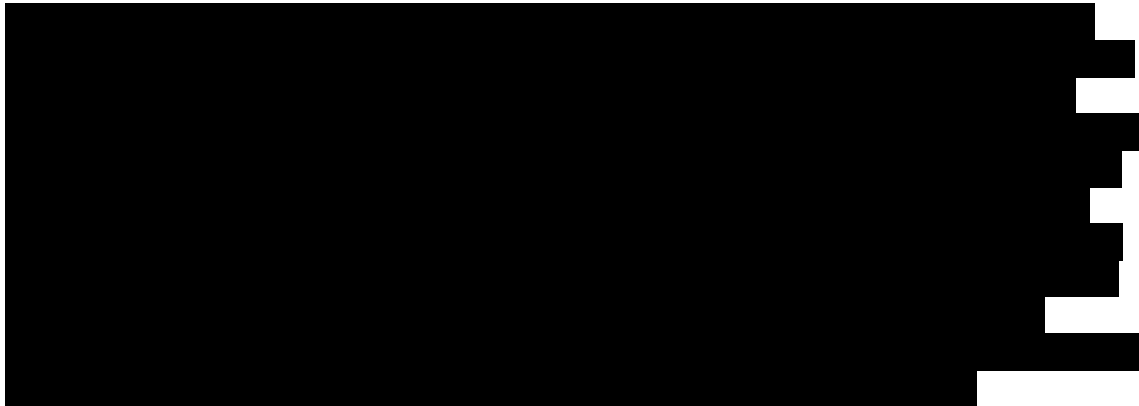
- iv. Estimated construction costs

[REDACTED]

- v. The projected capital structure

[REDACTED]

- vi. Describe any agreements, both pre and post commercial operation date, entered into with respect to equity ownership in the proposed project and any other financing arrangement.



In addition, the financing plan should address the status of the above activities as well as the financing of development and permitting costs. All bidders are required to provide this information.

As of June 30, 2019, the Owners have spent approximately [REDACTED] on assessing the Lease Area and other activities associated with the Project, [REDACTED]. [REDACTED] Remaining funding will be [REDACTED] in accordance with approved capital budgets under the applicable agreements referenced above. No other financial agreements or external resources are needed for the Project to move forward.

5.4 Bidder Experience in Securing Financing

- 5.4 Provide documentation illustrating the experience of the bidder in securing financing for projects of similar size and technology. For each project previously financed provide the following information:

- i. Project name and location
- ii. Project type and size
- iii. Date of construction and permanent financing
- iv. Form of debt and equity financing
- v. Current status of the project

The Bidder will rely on the extensive experience of Ørsted and Eversource to secure financing for the Project. Ørsted is the world's leader in offshore wind development and construction, with over 25 years of experience executing capital projects, including 25 operational offshore wind projects with 5.6 GW of constructed capacity.

As a result of the recent acquisition of Deepwater Wind, the Bidder's team also includes the individuals responsible for the first ever project and tax equity financing of an offshore wind farm in the nation; unique expertise that provides enhanced flexibility in financing options to the Project. In February 2015, Deepwater Wind closed on approximately \$300 million in senior secured project financing for the Block Island Wind Farm project, funded by a consortium of world-class lenders led by Societe Generale, and two word-class tax equity

investors – Citi and GE. The financing was awarded Renewable Energy Deal of the Year in 2015 by Project Finance International and IJ Global.

Similarly, with the completion of hundreds of capital projects over the past decade, Eversource has established a successful track record in delivering customer value and demonstrated expertise in building, financing, owning and maintaining infrastructure for the electric industry. Eversource has invested approximately \$6.0 billion over the past 3 years on new energy infrastructure in the northeast.

Table 5.1, Table 5.2, and Table 5.3 provide lists of offshore wind projects and other large energy transmission projects financed and developed by the Owners.

Table 5.2 Projects Financed and Developed by Ørsted									
Project Name	Location	Type	Size (MW)	Construction Start (Year)	Construction Capital Structure / % Ørsted	Commercial Operation (Year)	Permanent Capital Structure (Year)	Permanent Capital Structure / % Ørsted	Status
Skipjack									

Table 5.2 Projects Financed and Developed by Ørsted

Project Name	Location	Type	Size (MW)	Construction Start (Year)	Construction Capital Structure / % Ørsted	Commercial Operation (Year)	Permanent Capital Structure (Year)	Permanent Capital Structure / % Ørsted	Status
Skipjack									
Hornsea 2	United Kingdom	Offshore Wind	1,386	Offshore expected Sep 2020	100% Equity / 100% Ørsted	2022	TBD	TBD / TBD	Under Construction
Borssele 1&2	Netherlands	Offshore Wind	700	Offshore expected Q1 2020	100% Equity / 100% Ørsted	2020	TBD	TBD / TBD	Under Construction
Hornsea 1	United Kingdom	Offshore Wind	1,218	2016	100% Equity / 100% Ørsted	2019	2018	100% Equity / 50% Ørsted	Under Construction
Borkum Riffgrund 2	Germany	Offshore Wind	465	2017	100% Equity / 100% Ørsted	2018	2017	100% Equity / 50% Ørsted	Under Construction
Walney Extension	United Kingdom	Offshore Wind	660	2015	100% Equity / 100% Ørsted	2018	2017	100% Equity / 50% Ørsted	Operating

Table 5.2 Projects Financed and Developed by Ørsted (continued)

Project Name	Location	Type	Size (MW)	Construction Start (Year)	Construction Capital Structure / % Ørsted	Commercial Operation (Year)	Permanent Capital Structure (Year)	Permanent Capital Structure / % Ørsted	Status
Race Bank	United Kingdom	Offshore Wind	573	2015	100% Equity / 100% Ørsted	2018	2016	100% Equity / 50% Ørsted	Operating
Burbo Bank Extension	United Kingdom	Offshore Wind	258	2015	100% Equity / 100% Ørsted	2017	2016	100% Equity / 50% Ørsted	Operating
Block Island Wind Farm	United States	Offshore Wind	30	2014	80% Debt 20% Equity	2016	2017	60% Debt 35% Tax Equity 5% Equity	Operating
Gode Wind 1	Germany	Offshore Wind	332	2015	100% Equity / 100% Ørsted	2016	2015	100% Equity / 50% Ørsted	Operating
Gode Wind 2	Germany	Offshore Wind	252	2015	100% Equity / 100% Ørsted	2016	2014	100% Equity / 50% Ørsted	Operating
Westermest Rough	United Kingdom	Offshore Wind	210	2014	100% Equity / 100% Ørsted	2015	2014	100% Equity / 50% Ørsted	Operating
Borkum Riffgrund 1	Germany	Offshore Wind	312	2013	100% Equity / 100% Ørsted	2015	2012	100% Equity / 50% Ørsted	Operating
West of Duddon Sands	United Kingdom	Offshore Wind	389	2013	100% Equity / 50% Ørsted	2014	2010	100% Equity / 50% Ørsted	Operating
Anholt	Denmark	Offshore Wind	400	2012	100% Equity / 100% Ørsted	2013	2011	100% Equity / 50% Ørsted	Operating
Gunfleet Sands 3	United Kingdom	Offshore Wind	12	2012	100% Equity / 100% Ørsted	2013	2012	100% Equity / 100% Ørsted	Operating
Lincs	United Kingdom	Offshore Wind	270	2011	100% Equity / 25% Ørsted	2013	2009	100% Equity / 25% Ørsted	Operating
London Array 1	United Kingdom	Offshore Wind	630	2011	100% Equity / 50% Ørsted	2013	2004	100% Equity / 25% Ørsted	Operating
Walney 1 & 2	United Kingdom	Offshore Wind	367	2010	100% Equity / 100% Ørsted	2012	2009	100% Equity / 50.1% Ørsted	Operating
Horns Rev 2	Denmark	Offshore Wind	209	2008	100% Equity / 100% Ørsted	2010	2007	100% Equity / 100% Ørsted	Operating

Table 5.2 Projects Financed and Developed by Ørsted (continued)

Project Name	Location	Type	Size (MW)	Construction Start (Year)	Construction Capital Structure / % Ørsted	Commercial Operation (Year)	Permanent Capital Structure (Year)	Permanent Capital Structure / % Ørsted	Status
Gunfleet Sands 1 & 2	United Kingdom	Offshore Wind	173	2008	100% Equity / 100% Ørsted	2010	2011	100% Equity / 50% Ørsted	Operating
Avedøre Holme	Denmark	Offshore Wind	10.8	2009	100% Equity / 100% Ørsted	2009	2009	100% Equity / 100% Ørsted	Operating
Burbo Bank	United Kingdom	Offshore Wind	90	2006	100% Equity / 100% Ørsted	2007	2006	100% Equity / 100% Ørsted	Operating
Barrow	United Kingdom	Offshore Wind	90	2005	100% Equity / 50% Ørsted	2006	2004	100% Equity / 100% Ørsted	Operating
Nysted	Denmark	Offshore Wind	165.6	2002	100% Equity / 100% Ørsted	2003	2010	100% Equity / 43% Ørsted	Operating
Horns Rev 1	Denmark	Offshore Wind	160	2002	100% Equity / 40% Ørsted	2003	2006	100% Equity / 40% Ørsted	Operating
Vindeby	Denmark	Offshore Wind	5	1991	100% Equity / 100% Ørsted	1991	1991	100% Equity / 100% Ørsted	Decommissioned

Table 5.3 Projects Financed and Developed by Eversource

Project Name	Location	Type	Size	Construction Start (Year)	Construction Capital Structure ¹	Commercial Operation (Year)	Permanent Capital Structure (Year)	Permanent Capital Structure ²	Status
Greater Boston Reliability Solution	MA	Electric Transmission	115 kV and 345 kV	2017	44% Debt / 56% Equity	2021	2017-2019	46% Debt / 54% Equity	Partially In-Service/Under Construction
Greater Hartford Central CT (GHCC)	CT	Electric Transmission	115 kV	2015	44% Debt / 56% Equity	2019	2015-2019	46% Debt / 54% Equity	Partially In-Service/Under Construction
Interstate Reliability (NEEWS)	CT	Electric Transmission	345 kV	2013	44% Debt / 56% Equity	2015	2015	46% Debt / 54% Equity	Operating
Long-Term Lower Southern Massachusetts (SEMA) Upgrades	MA	Electric Transmission	115 kV and 345 kV	2009	44% Debt / 56% Equity	2014	2014	46% Debt / 54% Equity	Operating
Greater Springfield Reliability (NEEWS)	MA/CT	Electric Transmission	115 kV and 345 kV	2011	44% Debt / 56% Equity	2013	2013	46% Debt / 54% Equity	Operating
Middletown to Norwalk	CT	Electric Transmission	115 kV and 345 kV	2003	44% Debt / 56% Equity	2009	2009	46% Debt / 54% Equity	Operating
Glenbrook Cables	CT	Electric Transmission	115 kV	2006	44% Debt / 56% Equity	2008	2008	46% Debt / 54% Equity	Operating
Long Island Replacement Cable	CT/NY	Electric Transmission	138 kV	2006	44% Debt / 56% Equity	2008	2008	46% Debt / 54% Equity	Operating
Stoughton Cables	MA	Electric Transmission	345 kV	2005	44% Debt / 56% Equity	2007 / 2009	2007 / 2009	46% Debt / 54% Equity	Operating
Bethel to Norwalk	CT	Electric Transmission	345 kV	2004	44% Debt / 56% Equity	2006	2006	46% Debt / 54% Equity	Operating

1. During construction, Eversource typically finances projects with a combination of short-term debt and internally generated cash flow. Projects are not financed at the project level with non-recourse debt, but rather on balance sheet at the regulated entity developing the project. Capital structure for the regulated entity is generally maintained at the allowed ratemaking capital structure, which can change over time. The current allowed capital structure has been provided.

2. Once a project reaches commercial operation, short-term financing during construction is typically replaced with long-term debt, but the capital structure will continue to be generally maintained at the allowed ratemaking capital structure, which can change over time. The current allowed capital structure has been provided.

5.5 Financial Resources and Strength

5.5 Please provide evidence that the bidder has the financial resources and financial strength to complete and operate the project as planned.

As described throughout Section 5, Ørsted and Eversource are stable and diverse energy companies with robust balance sheets that reflect the financial strength needed to complete and operate the Project in the ordinary course of their respective businesses.

Financial and cash flow data for Ørsted and Eversource is provided in Table 5.4, Table 5.5, Table 5.6, and Table 5.7. Annual reports are provided in Attachments 5-2 through 5-7.

Table 5.4 Eversource Selected Consolidated Financial Data – Balance Sheet and Income Statement

(Millions of Dollars)	2018	2017	2016
<i>Balance Sheet Data:</i>			
Property, Plant and Equipment, Net	25,610	23,617	21,351
Total Assets	38,241	36,220	32,053
Total Capitalization	24,729	23,567	20,470
<i>Income Statement Data:</i>			
Operating Revenues	8,448	7,752	7,639
Net Income	1,041	996	950

From Eversource 2018 10K

Table 5.5 Eversource Selected Consolidated Cash Flow Data – Funds from Operations and Debt Issuances

(Millions of Dollars)	2018	2017	2016
Net Cash Flow Provided by Operating Activities	1,784	1,996	2,208
Issuance of Long-term Debt	2,200	2,500	800
Increase/(Decrease) in Short-term Debt	(379)	73	(12)
Total Debt Issuances	1,821	2,573	788

From Eversource 2018 10K

Table 5.6 Ørsted Selected Consolidated Financial Data – Balance Sheet and Income Statement

(Millions of Dollars)	2018	2017	2016
<i>Balance Sheet Data</i>			
Total Assets	26,186	21,978	20,473
Capital Employed	12,434	10,548	9,144
<i>Income Statement Data</i>			
Revenue	11,542	8,926	9,180
EBIT	3,698	2,435	2,082

From Ørsted 2018 Annual Report

Assumes DKK to USD exchange rate of 0.15

Table 5.7 Ørsted Selected Consolidated Cash Flow Data – Funds from Operations and Debt Issuances

(Millions of Dollars)	2018	2017 ⁵	2016
Cash flow from operating activities	1,551	153	1,691
Interest-bearing net debt	-333	-228	519

From Ørsted 2018 Annual Report

Assumes DKK to USD exchange rate of 0.15

As demonstrated, both Eversource and Ørsted are large, growing companies, and have a combined cash flow of approximately \$3 billion and a combined market capitalization of approximately \$64 billion. Moreover, both possess deep capital-market expertise, as evidenced by their ability to routinely access the public debt and equity markets. For example, in November 2017, Ørsted issued green hybrid capital securities and green senior unsecured bonds totaling €1.25 billion (approximately \$1.5 billion), and in May 2019, Ørsted issued green senior bonds totaling GBP 900 million (approximately \$1.1 billion).

Eversource parent successfully issued \$650 million of Series I and M Senior Notes in January 2018 and an additional \$900 million of Series N and O Senior Notes in December 2018. In addition, Eversource subsidiary NSTAR Electric Company completed its first ever green bond issuance totaling \$400 million in May 2019. Finally, on June 4, 2019, Eversource completed an equity offering of a total of 17.94 million common shares, consisting of 5.98 million common shares issued directly by the Company and 11.96 million common shares issuable pursuant to a forward sale agreement. The issuance of the 5.98 million common shares resulted in net proceeds of \$426.9 million.

Eversource– Financial Highlights

Eversource is a large cap company traded on the New York Stock Exchange, with an equity market capitalization of approximately \$25 billion.

Eversource is listed as number 358 on the Fortune 500 2019 list of the largest U.S. corporations (by gross revenues).

Eversource currently maintains one of the highest credit rating of any company in the Energy and Utility industry in the United States. Eversource has invested \$6.8 billion in new energy infrastructure in the past three years.

Ørsted – Financial Highlights

Ørsted is traded on Nasdaq Copenhagen Stock Exchange, with an equity market capitalization of approximately \$39 billion.

Ørsted was listed in June 2016. The IPO was the largest in Europe in the last 5 years and the largest IPO ever in Denmark both in terms of deal size and market cap.

Ørsted has non-cancellable credit facilities totaling approximately \$1.7 billion.

Ørsted has invested approximately \$7.8 billion in new energy infrastructure from 2016 to 2018.

5.6 Audited Financial Statements

- 5.6 Provide complete copies of the most recent audited financial statement or annual report for each bidder for each of the past three years; including affiliates of the bidder (if audited statements are not available, reviewed or compiled statements are to be provided). Also,

⁵ The decrease in cash flow from operating activities between 2016 and 2017 is largely driven by a change in funds tied up in working capital of \$1,185 million in 2017 compared with \$225 million in 2016.

provide the credit ratings from Standard & Poor's and Moody's (the senior unsecured long term debt rating or if not available, the corporate rating) of the bidder and any affiliates and partners.

Although the Bidder does not have any audited financial statements or annual reports, the annual reports for Ørsted (formerly known as DONG Energy) for the past three fiscal years (ending December 31, 2018) are provided as Attachment 5-2, Attachment 5-3 and Attachment 5-4. The annual reports for Eversource for the past three fiscal years (ending December 31, 2018) are provided as Attachment 5-5, Attachment 5-6, and Attachment 5-7. The unaudited 2016, 2017, and 2018 annual financials for the Bidder and its joint venture affiliates are provided as Attachment 5-8.

The Bidder does not have any outstanding debt and therefore does not have a credit rating. The current senior unsecured (long-term) debt ratings of Ørsted and Eversource are provided in Table 5.8.

Table 5.8 Ørsted and Eversource Credit Ratings

Sponsor	S&P	Moody's	Fitch
Ørsted	BBB+ (stable)	Baa1 (stable)	BBB+ (stable)
Eversource	BBB+ (stable) ¹	Baa1 (stable)	BBB+ (stable)

¹Rating for senior unsecured long-term debt. Corporate Credit rating is A+.

5.7 Board of Directors, Officers, and Trustees List

5.7 Please also include a list of the board of directors, officers and trustees for the past three years and any persons who the bidder knows will become officers, board members or trustees.

The governance of the Owners' four jointly-controlled companies is described in Section 5.2. The directors of both Bay State HoldCo LLC and BSW HoldCo LLC are

[REDACTED]

There are two former directors for Bay State HoldCo LLC and BSW HoldCo LLC:

[REDACTED]

There are no officers or trustees for the Bidder.

5.8 Bid Security

5.8 The bidder should demonstrate its ability (and/or the ability of its credit support provider) to provide the required security, including its plan for doing so.

The Owners have ample resources to provide bid security on behalf of the Bidder. As of June 30, 2019,

[REDACTED]

Ørsted's financing strategy is to concentrate all group borrowings at the group parent level and to support finance operations and investments at subsidiary level through the injection of equity and group internal debt.

[REDACTED]

The Owners will provide of the contract security in accordance with the requirements of the PPAs.

5.9 Credit Issues/Credit Rating Downgrade Events

5.9 Provide a description of any current or recent credit issues/credit rating downgrade events regarding the bidder or affiliate entities raised by rating agencies, banks, or accounting firms.

Ørsted has not experienced any current credit issues or recent rating downgrade events, and is not aware of any pending credit issues or credit rating downgrade events, nor any other financial issues raised by rating agencies, banks, or accounting firms.

On July 25, 2019, S&P lowered Eversource's senior unsecured credit ratings from A to BBB+ and its corporate credit rating from A+ to A-. S&P also raised Eversource's outlook from negative to stable. Despite these changes, Eversource still maintains one of the highest credit ratings of any company in the Energy and Utility industry in the United States.

As demonstrated in Section 5.6, all three major credit rating agencies rate Ørsted's and Eversource's credit as stable, and both Eversource and Ørsted are well regarded and maintain strong investment grade credit profiles.

5.10 Federal Production Tax Credit or Investment Tax Credit Role

5.10 Describe the role of the Federal Production Tax Credit or Investment Tax Credit (or other incentives) on the financing of the project.

[REDACTED]

5.11 Pending Litigation

5.11 Bidders must disclose any pending (currently or in the past three years) litigation or disputes related to projects developed, owned or managed by Bidder or any of its affiliates in the United States, or related to any energy product sale agreement.

See the annual reports referenced in Section 5.6, which disclose material litigations involving the Owners' respective affiliates. In particular, a historic Ørsted NA affiliate (Elsam Kraft A/S, which has now been merged with other Ørsted entities) was party to litigation in which the Danish competition authority found that it charged excessive prices in the Danish wholesale power market from July 1, 2003 through July 1, 2006 (Elsam Kraft A/S only became owned by Ørsted NA's ultimate parent company on July 1, 2006). On appeal, however, the High Court of Western Denmark ruled in Ørsted's favor on May 24, 2018 for the period of January 1, 2005 through July 1, 2006; and the Danish Appeals Permission Board subsequently ruled that that decision may not be appealed to the Danish Supreme Court. Nevertheless, following the Danish competition authority's finding, consumers also brought claims for damages, for

which a litigation provision has been established; those claims remain pending notwithstanding Ørsted's victory on appeal.

Eversource Energy, one of the parent companies of the Bidder, and Avangrid, Inc. are defendants in a class action (PNE Energy Supply LLC v. Eversource Energy and Avangrid, Inc., Docket No. 1:18-cv-11690-DJC) alleging that the defendants manipulated the wholesale prices of natural gas sold to electric generation facilities in New England. The complaint was dismissed on June 7, 2019. PNE filed an appeal in the First Circuit Court of Appeals on July 12, 2019. The briefing period begins on September 4, 2019.

A similar consolidated class action case against Eversource Energy and Avangrid before the same judge (Scott Breiding, et al. v. Eversource Energy and Avangrid, Inc., C.A. No. 17-12274-DJC), asserting the same claims as in the PNE case, was dismissed by the court on September 11, 2018. The Breiding decision is now on appeal in the First Circuit Court of Appeals. The Breiding appeal has been fully briefed and was argued before the First Circuit Court of Appeals on July 24, 2019.

In connection with the development, construction, and operation of the Block Island Wind Farm, Ørsted's affiliate Deepwater Wind successfully defended several lawsuits and regulatory challenges, including an appeal of the Rhode Island Public Utilities Commission's approval of its power purchase agreement. Within the past three years, a federal appellate court affirmed the dismissal of a lawsuit challenging the power purchase agreement, Riggs v. Curran, 863 F.3d 6 (1st Cir. 2017); and a federal district court dismissed a lawsuit seeking to enjoin cable-installation activities, Narragansett Indian Tribe v. Narragansett Elec. Co., No. 16-0216 (D.R.I. Nov. 30, 2016) (dismissing case).

[REDACTED]

[Redacted]

5.12 Expected Operating Life

5.12 What is the expected operating life of the proposed project? What is the depreciation period for all substantial physical aspects of the bid, including generation facilities, delivery facilities to move power to the grid, and mandatory and voluntary transmission system upgrades?

[Redacted]				
[Redacted]				
[Redacted]				
[Redacted]	[Redacted]	[Redacted]	[Redacted]	[Redacted]
[Redacted]	[Redacted]	[Redacted]	[Redacted]	[Redacted]
[Redacted]	[Redacted]	[Redacted]	[Redacted]	[Redacted]
[Redacted]	[Redacted]	[Redacted]	[Redacted]	[Redacted]

5.13 Financing Commitment

5.13 Has the bidder already obtained financing, or a commitment of financing, for the project? If financing has not been obtained, explain how obtaining a long-term agreement as proposed will help you in obtaining financing for the proposed project, in obtaining more favorable terms for the financing of the proposed project, or in supporting the future capital investment.

[Redacted]

See Section 5.3 for details regarding the financing plan.

5.14 Agreements with Respect to Energy

5.14 State whether bidder has executed agreements with respects to energy, RECs and/or capacity for the proposed project (including any agreements that have been terminated) and provide information regarding the associated term and quantities, and whether bidder has been alleged to have defaulted under or breached any such agreement. State whether the bidder or its affiliates have submitted proposals to other buyers, the status of consideration of such proposals, and the impact of such proposal(s), if they result in an executed contract or contracts, on the proposal(s) submitted in response to this RFP.

The Bidder has not entered into or executed any agreements for energy, renewable energy certificates (RECs) or capacity for the Project.

The Bidder or its affiliates have submitted the following proposals for energy, RECs or capacity to other U.S. buyers, the status of consideration of such proposals, and the impact of such proposal(s), if they result in an executed contract or contracts, on the proposal(s) submitted in response to this RFP. This description excludes any proposals that have expired and/or opportunities no longer under consideration that did not result in a contract.

- The Bidder has submitted a proposal to the New York State Energy Research and Development Authority (NYSERDA) in February 2018 for its Sunrise Wind project. On July 18, 2019, NYSERDA announced the selection of the Sunrise Wind project to negotiate an Offshore Wind Renewable Energy Certificate (OREC) agreement.
- The Bidder's affiliate, DWW Rev 1, LLC (DWW Rev 1), has entered into a PPA for 400 MW with The Narragansett Electric Company d/b/a National Grid, for its Revolution Wind offshore wind project, under Rhode Island's participation in the 2017 Massachusetts Section 83C offshore wind solicitation. That PPA has received regulatory approval.
- DWW Rev 1 has entered into PPAs for a total of 200MW with The Connecticut Light and Power Company d/b/a Eversource Energy and The United Illuminating Company as a result of the Connecticut Department of Energy and Environmental Protection's (CT DEEP's) 2017 offshore wind solicitation. These PPAs also relate to the Revolution Wind project and have received regulatory approval.

- CT DEEP awarded DWW Rev 1 an additional 104 MW of PPAs with the same Connecticut electric distribution companies under the 2018 Zero Carbon Resources solicitation. These PPAs, which have been submitted for regulatory approval, are part of the build-out of Revolution Wind, [REDACTED]

- In 2017, the Bidder's affiliate, Deepwater South Fork, LLC (DW South Fork), executed a PPA for 98 MW offshore wind project with the Long Island Power Authority (LIPA) in response to a solicitation seeking new sources of energy and capacity. In 2018, LIPA approved in principle an amendment to the PPA for an additional 40 MW expansion of the project; that amendment is in the process of being finalized. [REDACTED]

Ørsted developed and owns the 30 MW Block Island Wind Farm – the first offshore wind facility in the U.S. [REDACTED]

Ørsted also has participated in other offshore wind opportunities in the U.S. through its subsidiary companies, including the execution of contracts in Maryland and Virginia and the receipt of an award in New Jersey, Attachment 12-1 describes the status of those ventures, [REDACTED]

5.15 Affiliated Entities and Joint Ventures

5.15 List all of bidder's affiliated entities and joint ventures transacting business in the energy sector.

As detailed in Section 5.2, Ørsted NA and ESI jointly control the companies that are involved in the Project.

Virtually all of Eversource's business is conducted in the energy sector. Ørsted owns, sometimes jointly, over one hundred entities active in the energy sector. Please see Figure 5.1 for a corporate structure chart of the Owners' joint venture, as well as Ørsted's 2018 and Eversource's 2018 Annual Reports (Attachments 5-4 and 5-7) for a complete list of affiliated entities and joint ventures.

As described in Section 5.17, the Bidder's affiliates include one of the EDCs, and measures have accordingly been put in place to guard against unfairness or undue preference for the Bidder in this RFP process.

5.16 Statement regarding Bankruptcy/Reorganization Proceedings

5.16 Has bidder, or any affiliate of Bidder, in the last five years, (a) consented to the appointment of, or been taken in possession by, a receiver, trustee, custodian or liquidator of a substantial part of its assets, (b) filed a bankruptcy petition in any bankruptcy court proceeding, (c) answered, consented or sought relief under any bankruptcy or similar law or failed to obtain a dismissal of an involuntary petition, (d) admitted in writing of its inability to pay its debts when due, (e) made a general assignment for the benefit of creditors, (f) been the subject of an involuntary proceeding seeking to adjudicate that Party bankrupt or insolvent, (g) sought reorganization,

arrangement, adjustment, or composition of it or its debt under any law relating to bankruptcy, insolvency or reorganization or relief of debtors?

The Bidder and its affiliates have not taken any of the above-described actions in the last five years. For the avoidance of any doubt, this response encompasses not only the Bidder's three affiliates that are jointly controlled by Orsted NA and ESI, but also Ørsted and Eversource's affiliates.

5.17 Conflicts of Interest

5.17 Briefly describe any known conflicts of interest between Bidder or an affiliate of Bidder and any Distribution Company, or any affiliates of the foregoing.

The Bidder has an affiliate relationship with NSTAR Electric Company d/b/a Eversource Energy and acknowledges that conflicts of interest are an important issue that the Evaluation Team and the Independent Evaluator must consider. Accordingly, measures have been put in place to ensure that the Bidder and its affiliates comply not only with applicable laws and regulatory standards, but also with Standards of Conduct developed by the EDCs, including NSTAR Electric Company d/b/a Eversource Energy, to ensure an open, fair and transparent competitive solicitation, evaluation and selection process and prevent any actual or apparent instance of unfairness, discrimination, or undue preference toward an affiliate Bidder in this RFP process.

ESI is an affiliate of NSTAR Electric Company d/b/a Eversource Energy, one of the Massachusetts EDCs participating in the RFP process and a member of the Evaluation Team. See Attachment 5-10 for Eversource's corporate structure. Eversource maintains a rigorous compliance program, Code of Business Conduct and policies to avoid conflicts of interest and appearances of impropriety, and to ensure compliance with state and federal codes and standards of conduct and affiliate transactions rules. In particular, Eversource has endorsed and supported the use of the Standard of Conduct as enhanced for this RFP process, which is binding on all Eversource employees (including ESI) and representatives, and whose principles are consistent with Eversource's compliance program and Code of Business Conduct.

Importantly, Eversource and Ørsted have also adopted additional measures to ensure and facilitate adherence to the Standard of Conduct. To effectuate the Standard of Conduct's requirement of a Bid Team and an Evaluation Team, affected Eversource employees and representatives on each team receive a copy of the Standard of Conduct, a training overview of the Standard of Conduct, a roster of the employees on each team, which rosters are posted on the Massachusetts Clean Energy Site (<https://macleanenergy.com/83c/83c-documents>), and sign a certificate acknowledging and agreeing to follow the Standard of Conduct. Employees assigned to each team are required to wear color-coded identification badge covers that clearly identify Bid Team members (green) and Evaluation Team members (red). Affected employees are given training on—and periodic reminders of—their obligations, with a single point of contact (the Deputy General Counsel & Chief Compliance Officer) identified for any compliance-related questions. In addition, the Eversource Bid Team and Evaluation Team use separate IT server locations that have security limiting access to specific team members as approved by the Chief Compliance Officer and IT. Employees of Orsted NA and its affiliates also receive an updated Bid Team roster periodically. All meetings of the joint venture steering committees and boards of directors begin with a reminder of the

Standard of Conduct and the importance of separation between the Bid Team and the Evaluation Team.

Beyond the Standard of Conduct and internal measures in furtherance of it, Ørsted and Eversource are subject to the following requirements and procedures:

- The fairness measures imposed by Section 83C as well as the Massachusetts Department of Public Utilities' (DPU) implementing regulations thereunder, including the appointment of the Independent Evaluator responsible for overseeing the RFP Process and authorized to order the setting aside of any winning bid found to be the result of a process that was not fair and objective, and that was substantially prejudiced as result.
- The measures imposed by the Massachusetts Electric Industry Restructuring Act of 1997, as well as the DPU's implementing regulations thereunder, to ensure strict separation between EDCs and any unregulated generation affiliate thereof, including the Standards of Conduct for EDCs and their affiliates set forth at 220 CMR 12.
- Other measures included in the RFP process, which the Independent Evaluator determined "satisfies the transparency principle, in the IE's opinion." (Peregrine Energy Group, *Independent Evaluator Report on the Proposed Timetable and Method of Solicitation and Solicitation Process under Section 83C of the Green Communities Act – Round 2* [April 1, 2019]) (Independent Evaluator Report).
- Other legal standards designed to ensure fairness in PPAs, such as the Federal Energy Regulatory Commission's (FERC) review of Market-Based Rate Authorization requests and of affiliate transactions under *Boston Edison Co. re: Edgar Elec. Energy Co.*, 55 FERC ¶ 61,382 (1991), *Ameren Energy Generating Co.*, 108 FERC ¶ 61,081 (2004), and *Allegheny Energy Supply Co.*, 108 FERC ¶ 61,082 (2004) (collectively, *Edgar-Allegheny*).
- Additional requirements contained in the joint venture agreements between Ørsted NA and ESI that go above and beyond the measures imposed by existing law and the RFP process, such as more specific standards for separation between Bid Team Members and Evaluation Team Members, training on fairness measures, and procedural safeguards to reduce the possibility of any actual or apparent unfairness in the bid evaluation and PPA negotiation processes.

5.18 Litigation, Disputes, Claims or Complaints against any Distribution Company

5.18 Describe any litigation, disputes, claims or complaints involving the Bidder or an affiliate of Bidder, against any Distribution Company or any affiliate of any Distribution Company.

The Bidder is unaware of any pending litigation, disputes, claims or complaints involving the Bidder or any affiliate of the Bidder against any of the EDCs or any affiliate of any EDC.

5.19 Litigation, Disputes, Claims or Complaints, or Events of Default

5.19 Describe any litigation, disputes, claims or complaints, or events of default or other failure to satisfy contract obligations, or failure to deliver products, involving Bidder or an affiliate of Bidder, and relating to the purchase or sale of energy, capacity or renewable energy certificates or products.

Neither the Bidder nor any of its affiliates has been implicated in any litigation, disputes, claims or complaints, or events of default or other failure to satisfy contract obligations, or failure to deliver products, involving, and relating to the purchase or sale of energy, capacity or renewable energy certificates or products in the United States.

See Section 5.11 for further details regarding litigation.

5.20 Statement Regarding any Governmental Investigation

5.20 Confirm that neither Bidder nor any directors, employees or agents of Bidder, nor any affiliate of Bidder are currently under investigation by any governmental agency, and that none of the above have in the last four years been convicted or found liable for any act prohibited by State or Federal law in any jurisdiction involving conspiracy, collusion or other impropriety with respect to bidding on any contract, or have been the subject of any debarment action (detail any exceptions).

Neither the Bidder, the Owners or their affiliates, nor any of their respective directors, employees, or agents (acting in their professional capacities) is currently under investigation by any governmental agency, or has in the last four years been convicted or found liable for any act prohibited by State or Federal law in any U.S. jurisdiction involving conspiracy, collusion or other impropriety with respect to bidding on any contract, or has been the subject of any debarment action.

See Section 5.11 on litigation involving affiliates of Eversource.

5.21 Regulatory and other Approvals needed to Execute a Binding Sale Agreement

5.21 Identify all regulatory and other approvals needed by bidder to execute a binding sale agreement.

[REDACTED]

5.22 Conformance to FERC's Applicable Regulatory Requirements

5.22 Describe how the project will conform to FERC's applicable regulatory requirements, including, but not limited to, FERC requirements relating to allocation of transmission capacity and open access, the justness and reasonableness of rates, the potential for undue preference or discrimination, and affiliate dealings, if any. Describe how your proposed approach is consistent with FERC precedent and ratemaking principles.

In this section, the Bidder demonstrates that its proposal conforms to applicable FERC regulatory requirements.

(i) [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

5.23 Direct and Indirect Affiliations and Affiliate Relationships

5.23 Describe and document any and all direct and indirect affiliations and affiliate relationships, contractual, financial or otherwise in the past three years between the bidder and one or more of the Distribution Companies and their affiliates, including all relationships in which one of the Distribution Companies or their affiliates has a financial or voting interest (direct or indirect) in the bidder or the bidder's proposed project. These relationships include:


- Corporate or other joint arrangements, joint ventures, joint operations whether control exists or not;
- Minority ownership (50% or less investee);
- Joint development agreements;
- Project agreements;
- Operating segments that are consolidated as part of the financial reporting process;
- Related parties with common ownership;
- Credit, debenture, and financing arrangements, whether a convertible equity feature is present or not;
- Wholly owned subsidiaries; and
- Commercial (including real property) relationships with any Distribution Company.

None of the EDCs has a financial or voting interest, direct or indirect, in the Bidder or the Project.

The following direct and indirect affiliate relationships result from the 50/50 joint venture through which Ørsted and Eversource control the Bidder and its affiliates.

- As noted in Section 5.17, the Bidder is an affiliate of NSTAR Electric Company d/b/a Eversource Energy, one of the EDCs participating in the RFP process and a member of the Evaluation Team. See Attachment 5-10 for Eversource's corporate structure.
- As described in Section 5.3, Ørsted and Eversource entered into multiple agreements related to the ownership, financing, development, and operation of the Project in December 2016. First, Eversource acquired a 50 percent membership interest in Bay State HoldCo LLC (the Bidder's sole member-manager), as well as in BSW HoldCo LLC (the sole member-manager of BSW ProjectCo LLC), through subscription agreements. Second, the Owners entered into limited liability company agreements for Bay State HoldCo LLC and BSW HoldCo LLC that provide for governance of all four jointly-controlled companies, as well as the mechanics of project funding. Third, following Ørsted NA's acquisition (through its subsidiary Ørsted US East Coast

Offshore Wind HoldCo LLC) of Deepwater Wind in November 2018, ESI acquired a 50 percent membership interest in North East Offshore, LLC in February 2019.

- 
- As detailed in Section 5.14, the Bidder's affiliate, DWW Rev 1, has entered in PPAs for its Revolution Wind project with (i) The Narragansett Electric Company d/b/a National Grid, an affiliate of Massachusetts Electric Company and Nantucket Electric Company d/b/a National Grid, two of the EDCs participating in the RFP process and members of the Evaluation Team; and (ii) The Connecticut Light and Power Company d/b/a Eversource Energy, an affiliate of the Bidder and NSTAR Electric Company d/b/a Eversource Energy. DWW Rev 1 also has entered into an option agreement with National Grid Ventures, Inc., also an affiliate with the two National Grid EDCs involved in this RFP, pursuant to which National Grid Ventures, Inc. has the right to acquire the offshore transmission and onshore interconnection facilities for the Revolution Wind project.
- Deepwater Wind Block Island, LLC (affiliated with the Bidder through Ørsted) and The Narragansett Electric Company d/b/a National Grid, an affiliate of Massachusetts Electric Company and Nantucket Electric Company d/b/a National Grid are parties to a PPA regarding the 30 MW Block Island Wind Farm. The same parties entered into a transmission service agreement and an interconnection agreement for the Block Island Wind Farm,
- In connection with the study of potential interconnection points, the Bidder has interacted with affiliates of National Grid and Eversource Energy as part of the ISO-NE process.

Eversource's contribution to ESI to date has been provided in the form of inter-company debt from Eversource. ESI has a revolving credit agreement with Eversource to facilitate the issuance of intercompany debt.

6. SITING, INTERCONNECTION, AND DELIVERABILITY

6.1 Site Plan

This section addresses project location, siting, real property rights and interconnection issues. Bidders should ensure that the threshold criteria outlined in Section 2.2 of the RFP are verified in their responses.

6.1 Provide a site plan (or plans) including a map (or maps) that clearly identifies the location of the proposed project site, Offshore Delivery Facilities, project locations, the assumed right-of-way width, the total acreage for Eligible Facilities, the anticipated interconnection point (or, if applicable, multiple points for Offshore Delivery Facilities), deployment facilities, and the relationship of the site to other local infrastructure, including transmission facilities, roadways, federal and state waters, and waterways. In addition to providing the required map(s), provide a site layout plan which illustrates the location of all major equipment and facilities on the site.

Site plan included? ☒ Yes ☐ No If not, please explain:

[Redacted]

[Redacted]

Offshore Facilities

[Redacted]

The WTGs and array cable layouts are all confined within the Lease Area and have been developed to optimize production, maximize safety during operations, and minimize the environmental footprint.

[Redacted]

[Redacted]

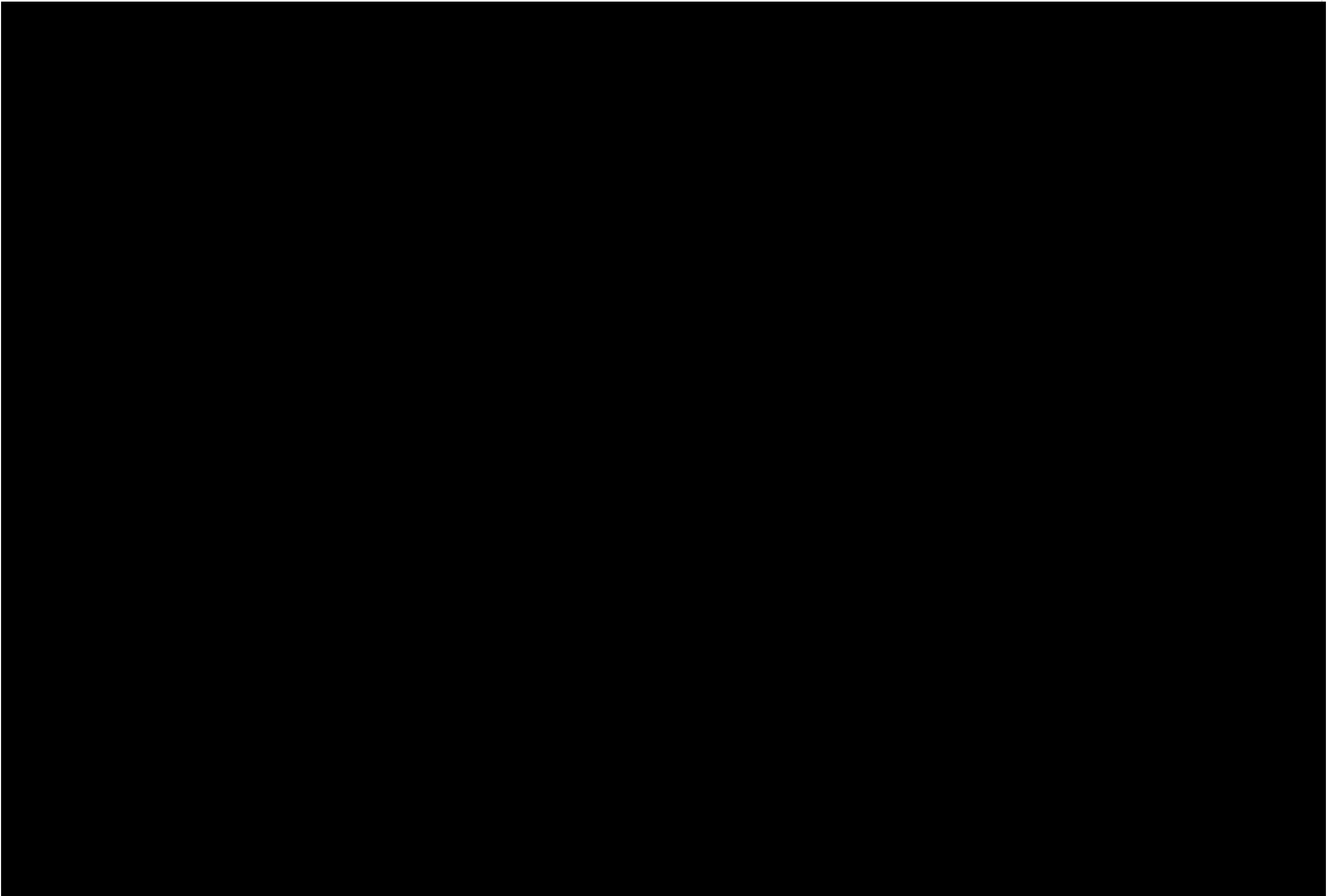
Onshore Facilities

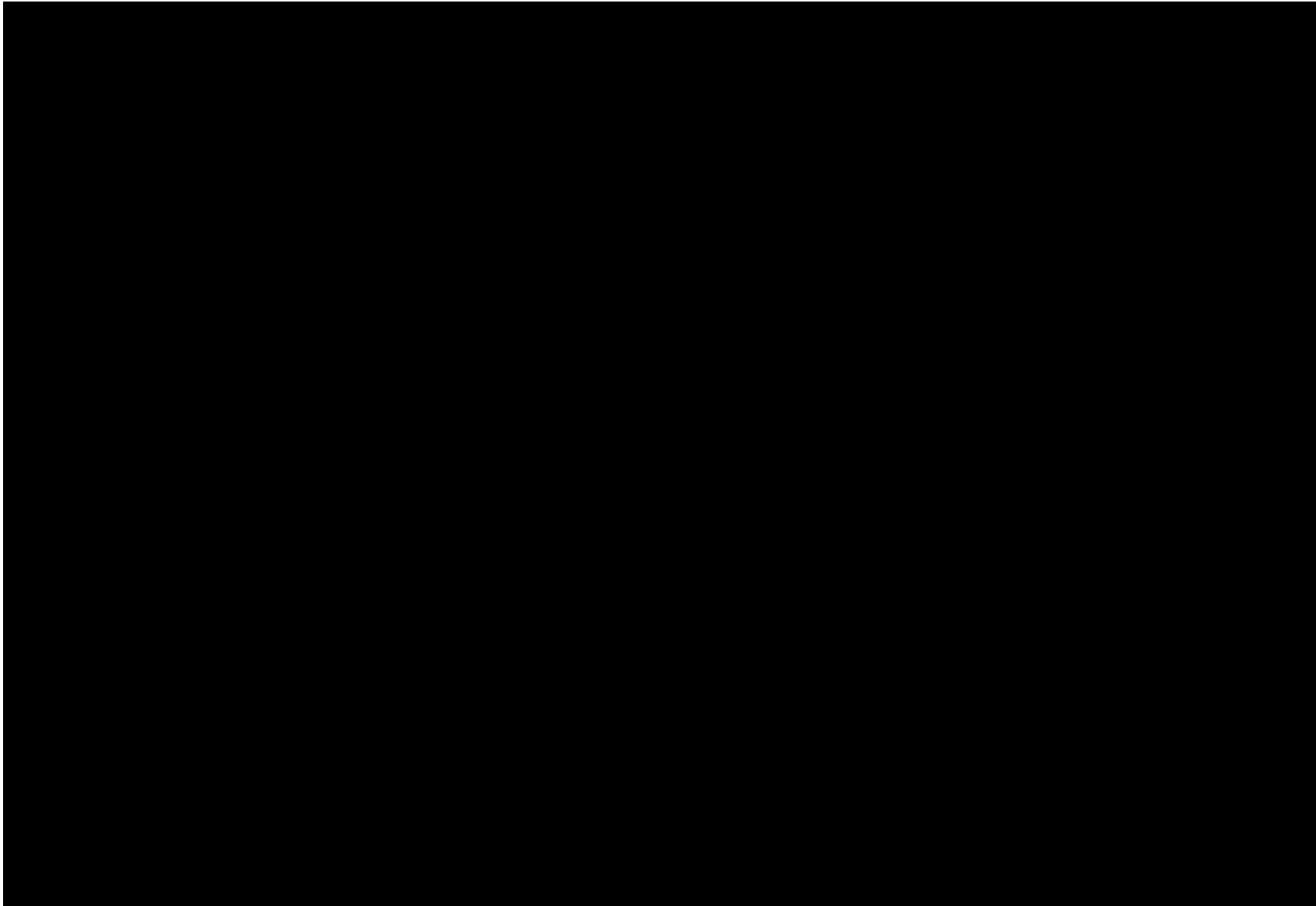
[Redacted]

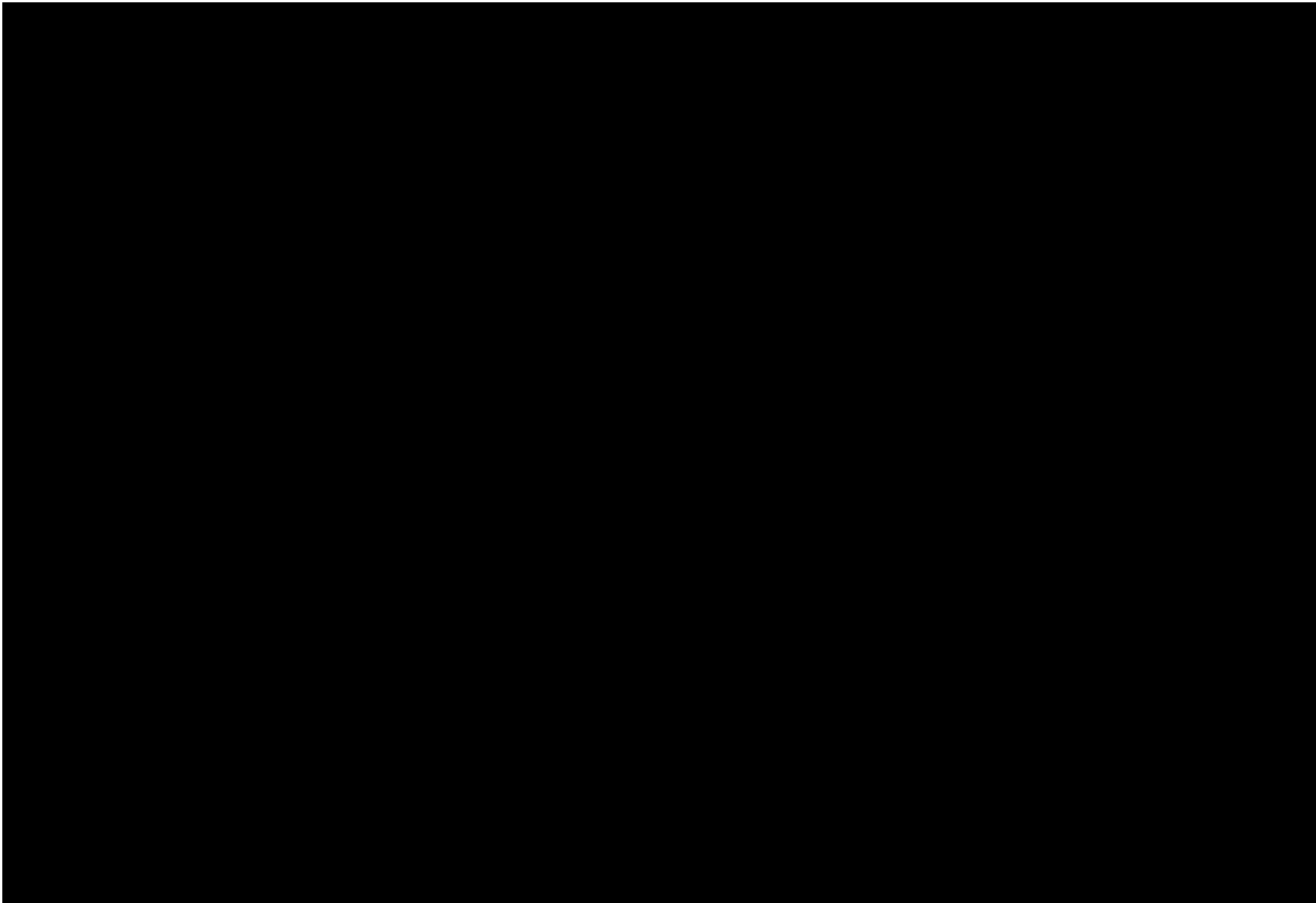
[Redacted]

[illegible]

[REDACTED]		
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]







6.2 Property Rights

6.2 Identify any real property rights (e.g., fee-owned parcels, rights-of-way, development rights or easements or leases) that provide the right to use the Eligible Facility site and Offshore Delivery Facilities, including for Eligible Facilities and any rights of way needed for interconnection.

- i. Does the project have a right to use the Eligible Facility site and/or Offshore Delivery Facilities locations for the entire proposed term of the PPA or tariff (e.g., by virtue of ownership or land development rights obtained from the owner)?

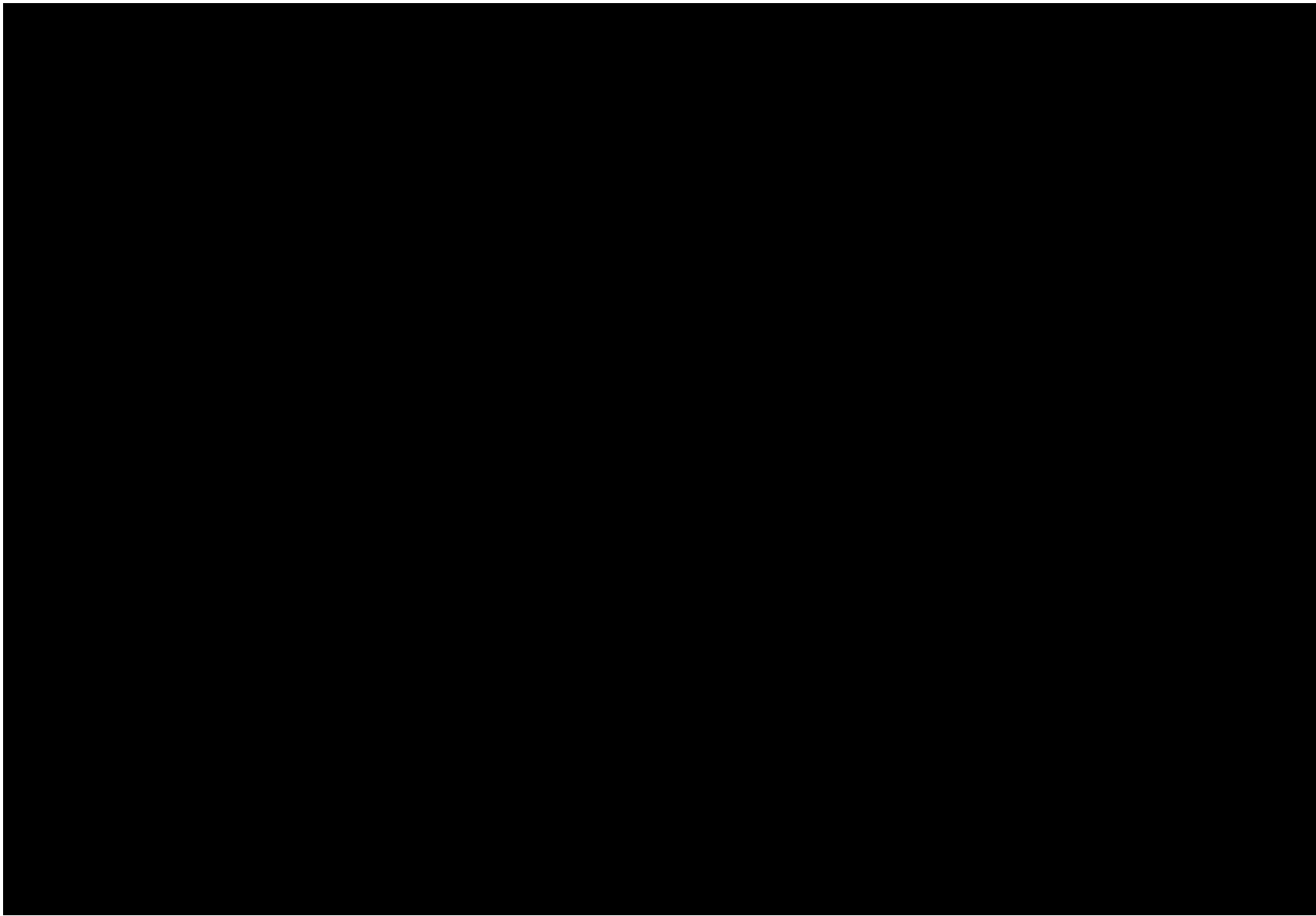
☐ Yes ☒ No If not, please explain:

The Bidder has secured full and exclusive site control for its generation site for a period that exceeds the term of the PPA.

The Bidder holds a Federal lease for an offshore wind energy generation site located on the Outer Continental Shelf. The Commercial Lease of Submerged Lands for Renewable Energy Development on the Outer Continental Shelf [REDACTED] (the Lease; included as Attachment 6-1⁶) is granted by the United States of America acting through the Bureau of Ocean Management (BOEM) per the Outer Continental Shelf Lands Act. Figure 6.4 depicts the generation site subject to the Lease.



⁶ Documentation of re-assignment of the Lease to Ørsted (formerly DONG Energy) as well as a clarification on Lease blocks is also provided in Attachment 6-1.



[REDACTED]

[REDACTED]

- ii. If so, please detail the Bidder's rights to control the Eligible Facility site and/or Offshore Delivery Facilities locations.

6.2.1 Commercial Lease of Submerged Lands for Renewable Energy Development on the Outer Continental Shelf [REDACTED]

The Bidder is the Lessee of an offshore commercial lease granting it the exclusive right to subsequently seek BOEM approval for the development of the Lease. The Lease of is granted by the United States of America acting through BOEM per the Outer Continental Shelf Lands Act.

Under Addendum D to the Lease (Attachment 6-1), BOEM will grant the rights for the location and operation of the export cable from the Lease Area to the boundary of Federal and State waters. That grant will occur in the normal course of the regulatory process in which BOEM approves the COP for the Project and issues a Record of Decision (ROD) on the approval of the COP.

6.2.2 State Licenses and Easements

The granting of the property rights required for the installation of the interconnection route through state waters (from the Federal boundary to the onshore substation site) is part of the State permitting process. [REDACTED]

See Section 7.2 for additional details on Project permitting.

6.2.3 Onshore Substation

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

-
- iii. Describe the status of acquisition of real property rights, any options in place for the exercise of these rights and describe the plan for securing the necessary real property rights, including the proposed timeline. Include these plans and the timeline in the overall project timeline.
-

6.2.5 Timeline for Acquisition of all Licensees and Easements

Under the Lease, the Bidder currently possesses all real property rights required to access its generation site for a period that exceeds the term of the PPA.

As described above, the Bidder will acquire access to the interconnection route through a combination of the permitting process and agreements with private parties.

- *Regulatory Process.* The issuance of the permits to construct and operate the Project issued by BOEM, [REDACTED] will include the real property rights required for the installation of the export (interconnection) cable in Federal and State waters. The timing for the granting of those real property rights is subsumed within the schedule for the issuance of the permits. [REDACTED]

- [REDACTED]

- [REDACTED]

A timeline for acquisition of property rights and receipt of necessary permits and/or licenses is provided in Section 7.2 and an overall Project schedule is provided in Attachment 9-1.

6.2.6 Joint Use of Existing or Proposed Real Property Rights

-
- iv. Identify any joint use of existing or proposed real property rights
-

The properties identified for the Project include both on- and off-shore components. The Lease Area and export cable route are currently used for recreational and commercial boating activities; and will continue to be in use during construction and operation of the Project. Potential impacts and mitigation for such impacts to marine and ocean uses in the Project Area are addressed in Section 7.

In order to protect the public and the offshore assets of the Project, the Bidder will work with:

- the U.S. Coast Guard (USCG) to establish aids to navigation and Notices to Mariners,
- NOAA to map Project Areas on nautical charts, and

- local fishing and boating organizations and community leaders during construction, as spotters and spokespersons emphasizing the need to avoid use conflicts and maintain safety.

[REDACTED]

[REDACTED]

[REDACTED]

6.3 Proper Zoning or Permitting

6.3 Provide evidence that the Eligible Facility site and/or Offshore Delivery Facilities locations are properly zoned or permitted. If the Eligible Facility site and/or Offshore Delivery Facilities locations are not currently zoned or permitted properly, identify present and required zoning and/or land use designations and permits and provide a permitting plan and timeline to secure the necessary approvals.

Detail the zoning and permitting issues:

6.3.1 Onshore

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

6.3.2 Offshore

Offshore, the Project (i.e. the generation assets) will be located within the designated Lease Area (Figure 6.3). Once approved by BOEM in the COP, the easement for the export cable will be included in Addendum D of the Lease. As discussed in Section 5.1, the export cable route will cross [REDACTED] before landing at the onshore substation site.

Permitting Plan and timeline:

6.3.3 Permitting Timeline

A permitting plan for the Project is provided in Section 7.2 and a critical path schedule is provided in Section 9.

Start Date: June 2015

End Date: [REDACTED]

6.4 Description of the Area Surrounding the Eligible Facility Site

6.4 Provide a description of the area surrounding the Eligible Facility site and/or Offshore Delivery Facilities locations (including landfall), including a description of the local zoning, flood plain information, existing land or waterway use, and setting.

6.4.1 Onshore

Local Zoning. Zoning for the onshore portions of the Project is addressed in Section 6.3.

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

6.4.2 Offshore

Local Zoning and Floodplain. Local zoning and floodplain information is not applicable for the offshore portions of the Project. Permitting requirements, including COP approval [REDACTED] are described in Section 7.1.

[REDACTED]

[REDACTED]

6.5 Interconnection Path Site Control

6.5 Describe how the bidder plans to gain interconnection path site control and describe the status of the plan.

Section 6.2 includes a map and description of the proposed interconnection pathway and point, and the Bidder’s plan for gaining interconnection site control, including the status of the Bidder’s execution of that plan.

6.6 Interconnection Request to ISO-NE

6.6 Please provide documentation to show evidence of the interconnection request to ISO-NE, the applicable New England Transmission Owner, or any neighboring control areas, to interconnect at the Capacity Capability Interconnection Standard. Please describe the status of any planned interconnection to the grid. Additionally, any studies undertaken by ISO-NE or the bidder must be provided.

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

Additional details on the status of the interconnection process are provided below.

6.6.1 Status of Interconnection Process

Capacity Network Resource Interconnection Service

[REDACTED]

[REDACTED] under the ISO-NE Open Access Transmission Tariff Schedule 22-Standard Large Generator Interconnection Procedures. A copy of the Interconnection Request confirmation is included as Attachment 6-3. The Bidder received [REDACTED].

[REDACTED]

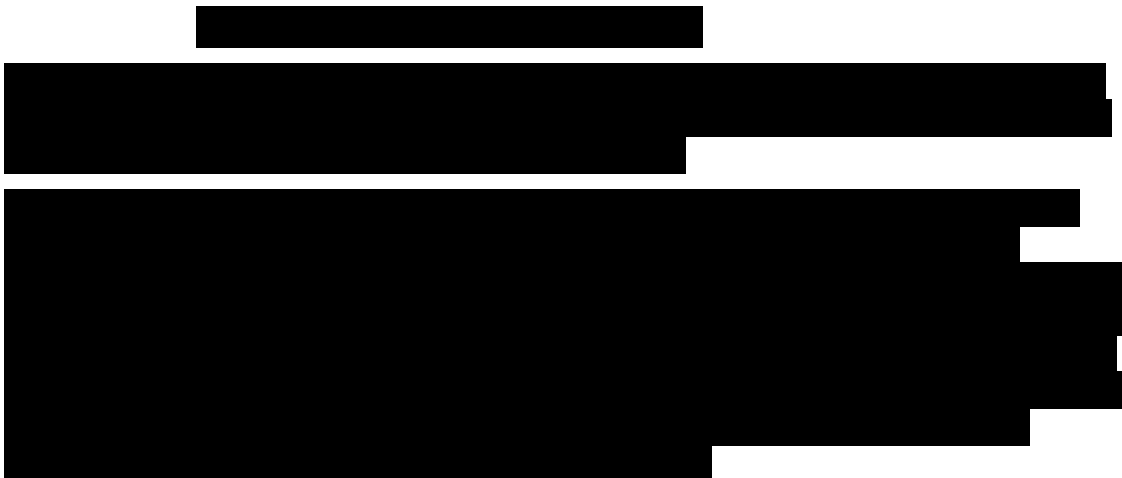
[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]



6.7 Electrical System Performance Studies

6.7 The studies should describe the Project's electrical system performance, its impact to the reliability of the New England Transmission system, how the project would satisfy ISO NE's I.3.9 requirements, and how the project will meet the Capacity Capability Interconnection Standard. Projects that do not have I.3.9 approval from ISO-NE must include technical reports or system impact studies that approximate the ISO-NE interconnection process, including but not limited to clear documentation of study technical and cost assumptions, reasoning, and justification of such assumptions. All projects must also provide analysis that approximates the ISO-NE CCIS interconnection analysis as defined in Planning Procedure 10. Please also provide the status of any additional interconnection studies already underway with ISO-NE and/or the transmission owner. All studies must follow the current ISO-NE interconnection procedures and detail any assumptions regarding resources ahead of the Project in the ISO-NE interconnection queue. All network upgrades identified in these studies must be clearly documented and included in the bid price. Provide a copy of an interconnection agreement, if any, executed by the bidder with respect to the proposed project. If an interconnection agreement has not been executed, please provide the steps that need to be completed before an interconnection agreement can be executed and the associated timeline.

Performance and its impact:

As described in Section 3.3, the Project will enhance the reliability of the New England transmission system, particularly during the winter months when electric and natural gas demand experience a coincidental peak resulting in New England's gas pipeline infrastructure being placed under pressure.

Specific improvements to reliability and efficiency of the ISO-NE system include:

- Load-following generation profile with respect to winter constraints,
- Sub-second speed of frequency response,
- Delivery of reactive power and voltage support,
- Fast ramp-down/de-load,
- Automated response in system event, and
- Real-time "available power estimation".

Overall, the Project will improve the thermal, voltage and stability performance of the New England bulk power transmission system by injecting reliable wind generation into the system.

6.7.1 Interconnection Studies

[REDACTED]

[REDACTED]

- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

Large offshore wind farms undertake harmonic studies to determine the level of harmonic distortion within the wind farm interconnection facilities and at the onshore POI. Harmonic assessments are required to determine if harmonic filters are required and if so, their technical specifications. [REDACTED]

Attachments:

Copy of completed I.3.9 approval or I.3.9-equivalent study attached: ☒

If none, please explain:

[REDACTED]

Copy of completed CCIS-equivalent study attached: ☐

If none, please explain:

[REDACTED]

[REDACTED]

[REDACTED]

Copy of Interconnection Agreement attached: ☐ If none, please explain:

[REDACTED]

6.8 Multiple Interconnection Requests

6.8 If multiple interconnection requests have been made, please specify all such active requests which have not been superseded by subsequent requests and information regarding the status of each. Provide copies of any requests made and studies completed.

The Bidder has submitted numerous Interconnection Requests with ISO-NE to support other current and future project developments. Table 6.2 is a list of all interconnection requests submitted to ISO-NE by the Bidder.

6.9 Cost Estimates

6.9 Please provide cost estimates for any necessary network upgrades identified in the studies identified in Section 6.7.

[REDACTED]

6.10 Studies Using the ISO-NE Proposed Interconnection Process Changes

6.10 To the extent that you provide an alternative interconnection scenario based on ISO-proposed interconnection process changes, you must also include studies using the proposed ISO-NE-proposed process. Any such studies must be accompanied with clear documentation of study technical and cost assumptions, reasoning, and justification of such assumptions.

ISO-NE has not notified the Bidder of any interconnection request process changes while the Project has been under study. If any process changes are proposed by ISO-NE, the Bidder will complete any necessary studies per ISO-NE requirements. Accordingly, since there is not an alternative interconnection scenario being provided at this time, there are not additional studies using the proposed ISO-NE-process applicable for integration into this proposal.

6.11 Electrical Models

6.11 Provide the electrical models of all energy resources supporting the proposed project in accordance with the filing requirements of the ISO-NE Tariff Schedule 22 and 23.

Electrical models attached: ☒ If none, please explain:

Electrical models of the wind farm electrical transmission facilities are provided by the Bidder as IDV files in Attachment 6-5. The attachment provides the data suitable for use in PSSE software to model the wind farm from a load flow perspective.

Electrical models for the purposes of dynamic stability simulations are proprietary to a third-party WTG manufacturer and the Bidder has a limited right of use. The Bidder is not authorized to release these models to the Evaluation Team. If the Evaluation Team needs access to these models, the Bidder will help applicable parties obtain access to such documents pursuant to a multi-party non-disclosure agreement.

6.12 Electrical One-Line Diagram

6.12 Provide a copy of an electrical one-line diagram showing the interconnection facilities, the relevant facilities of the transmission and/or distribution provider, and any required network upgrades identified in the studies required in section 6.9 of this document

Electrical one-line diagram attached: ☒ If none, please explain:

A one-line diagram for the wind farm transmission system is provided as [REDACTED] and Attachment 6-6. In this diagram, WTGs are abstracted and do not appear, and the diagram is oriented with the array system at the bottom and grid interconnect at the top.

[REDACTED]

[REDACTED]

[REDACTED]

6.13 Current or New Interconnection Facilities Owned by Bidder

6.13 Specify and describe the current or new interconnection facilities (lines, transformers, switching equipment, system protection and controls, etc.) that bidder owns or is intending to construct or have constructed in order to deliver the proposed energy.

[REDACTED] Additional detail regarding the planned interconnection facilities is provided in Section 6.1.

Wind Farm Array System and WTGs – [REDACTED]

[REDACTED]

The individual WTGs and their generator step-up transformers will be connected to a [REDACTED] submarine array cable network, which will terminate at an offshore substation. Section 6.1 provides further information on the WTGs and the inter-array cables, and Figure 6.3 in Section 6.1 for the offshore site plan.

[REDACTED]

Export Circuits – [REDACTED]

Onshore Substation – A new onshore substation will be constructed to terminate the [REDACTED] circuits from the Project's [REDACTED]. The onshore substation will consist of the following equipment:

- [REDACTED] submarine/underground circuits from the offshore wind generation
- [REDACTED] switchgear housing circuit breakers and disconnect switches
- [REDACTED] fixed shunt reactor per export circuit
- [REDACTED] variable shunt reactor per export circuit

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

Section 6.1 provides further information on the onshore substation.

[REDACTED]

[REDACTED]

[REDACTED]

Voltage Control – A power plant controller will dispatch the WTG reactive power in order to regulate the [REDACTED] voltage at the offshore substation. The transformer at the new onshore substation will be equipped with load tap changers which will control the voltage at the [REDACTED] bus. [REDACTED]

6.14 Incremental Data Requirements

6.14 Incremental data requirements:

1. IDV file(s) in PSSE v32 format modelling all upgrades to the transmission network identified in the studies required in section 6.7 of this document. ☒ If none, please explain:

Electrical models of the wind farm electrical transmission facilities are provided by the Bidder as IDV files in Attachment 6-5. The attachment provides the data suitable for use in PSSE software to model the wind farm from a load flow perspective.

2. If the Bidder does not use PSSE, provide in text format necessary modeling data as follows:

- Line Data:

Voltage: Thermal Ratings:

Impedances (r, X and B)

Line Length: from to

(bus numbers and names)

Not applicable; data for the line characteristics and electrical properties are provided in the IDV file in Attachment 6-5.

- Transformer data (including Phase shifting transformers if applicable):

Terminal Voltages: Thermal Ratings:

Impedance

From: To:

(bus numbers and names)

Not applicable; data for the onshore and offshore transformers are provided in the IDV file in Attachment 6-5.

- Reactive compensation models as necessary

Not applicable; data for the reactive compensation are provided in the IDV file in Attachment 6-5.

- Other changes to the model that would occur due to a Project such as terminal changes for lines/transformer/generator leads/loads etc.

The IDV file provided in Attachment 6-5 represents the offshore windfarm electrical system for steady state analysis. [REDACTED]

6.15 Energy Delivery

6.15 Please detail with supporting information and studies (as available) that the delivery profile contemplated in your proposal reflects any constraints or curtailments, if any, after the upgrades that are expected to take place pursuant to the CCIS standards. If you are planning to make voluntary upgrades beyond those associated with the CCIS standard, as more fully described in the RFP, please describe the transmission network upgrades necessary, their estimated cost (for which the bidder would have cost responsibility, and the impact on the proposed generation schedule by reducing remaining constraints or curtailments.

[REDACTED]

[REDACTED]

[REDACTED]

- [REDACTED]

- [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

6.16 Sufficiency of Proposed Point of Delivery into ISO-NE

6.16 Please provide sufficient information and documentation to demonstrate that the proposed point of delivery into ISO-NE, along with their proposed interconnection and transmission upgrades including any transmission upgrades beyond the point of interconnection, is sufficient to ensure the scheduled delivery profile of the proposal's Offshore Wind Energy Generation.

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

7. ENVIRONMENTAL ASSESSMENT, PERMIT ACQUISITION PLAN AND NEW CLASS I RPS CERTIFICATION

Ørsted has unmatched experience permitting offshore wind, having developed, permitted, and installed more than 1,100 offshore WTGs in a wide range of water bodies around the globe. Additionally, through the development and construction of the Block Island Wind Farm, the Bidder's team has gained a unique understanding of the environmental conditions and permitting requirements for the waters of the northeast United States. Building upon over seven years of intensive environmental studies in these regional waters as well as on-going engagement with State and Federal resource agencies, the Bidder has developed a comprehensive permit acquisition plan.

In addition to its experience with the Block Island Wind Farm, the Project will benefit from the parallel permitting and outreach activities by the Bidder's team for this Project, the Revolution Wind project, the South Fork Wind Farm, and the Sunrise Wind project, all of which will be located in the Wind Energy Areas (WEA) off the coasts of Massachusetts and Rhode Island. The Bidder's team is executing a comprehensive and coordinated plan for the siting and permitting of multiple projects with similar Federal requirements and State considerations. For example, the team is currently performing comprehensive environmental and technical surveys across lease areas, as well as extensive governmental and stakeholder consultations for each of the projects.

As part of the development of the Block Island Wind Farm, members of the Bidder's team conducted permit coordination with the BOEM, USACE, NOAA Fisheries, USFWS, and RICRMC. In addition to these regulatory authorities, the development team engaged key stakeholders early in the process and established constructive relationships with the Wampanoag Tribe of Gay Head (Aquinnah), the Mashpee Wampanoag Tribe, the Narragansett Indian Tribe, the commercial and recreational fishing community, and both regional and national environmental non-governmental agencies who advocate for the protection of marine mammals, birds, and ocean conservation.

Relying on these experiences and combining permitting and environmental assessment expertise and knowledge from the European wind markets with local knowledge of the regulatory regime and processes in the U.S. will ensure that the Project is fully permitted in accordance with the necessary regulations and in the most expedited fashion practicable.

7.1 Permits, Licenses, Environmental Assessments and/or Environmental Impact Statements Required

This section addresses environmental and other regulatory issues associated with project siting, development and operations for all aspects of the project (including generation, delivery, storage, interconnection, etc.), and in all jurisdictions (federal, all interested states, etc.).

- 7.1 Provide a list of all the permits, licenses, and environmental assessments and/or environmental impact statements required to construct and operate the project. Along with this list, identify the governmental agencies and States that are responsible for issuing approval of all the permits, licenses, and environmental assessments and/or environmental impact statements. If a bidder has secured any permit or has applied for a permit, please indicate this in the response.









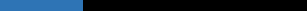
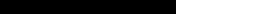
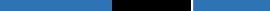


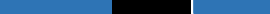

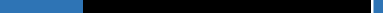

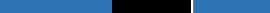


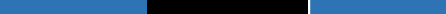








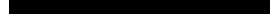
A list of the Federal authorizations and required consultations with Federal regulatory agencies is provided in Table 7.1. Table 7.1 includes the status of any permit application(s) or permits that have been secured by the Bidder. Note that the permitting schedule is subject to change based on engagement with regulatory agencies and other stakeholders.

Table 7.1 Federal Authorizations and Required Consultations

Consent/Permit and/or Consultation	Regulatory Agency	Status
Commercial Lease of Submerged Lands for Renewable Energy Development on the Outer Continental Shelf, in accordance with Section 8 of the Outer Continental Shelf Lands Act	Department of the Interior, BOEM	[REDACTED]
Site Assessment Plan (SAP) [REDACTED]		[REDACTED]
Construction and Operations Plan (COP) [REDACTED]		[REDACTED]
Facility and Design Report		[REDACTED]
Fabrication and Installation Report (30 Code of Federal Regulations [CFR] §§ 585.700-702)		[REDACTED]
National Environmental Policy Act (NEPA), including consultation under: Magnuson-Stevens Fishery Conservation and Management Act, Marine Mammal Protection Act, National Historic Preservation Act, Endangered Species Act	BOEM, USACE, New England District, NOAA Fisheries, U.S. Department of Defense (DoD), Advisory Council on Historic Preservation, USFWS Northeast Region (Region 5) and cooperating regulatory agencies	[REDACTED]
Individual Permit pursuant to Rivers and Harbors Act, Section 10, and Section 408 and Clean Water Act, Section 404	USACE	[REDACTED]
Private Aids to Navigation Permit and Notice to Mariners (NTMs)	U.S. Coast Guard, District I	Private Aids to Navigation Permit [REDACTED]
No Hazard Determination	Federal Aviation Administration (FAA)	Filed January 30, 2019
Consultation with DoD	Office of the Assistant Secretary of Defense for Energy, Installations, and Environment, DoD Siting Clearinghouse and U.S. Naval Seafloor Cable Protection Office	[REDACTED]

Table 7.1 Federal Authorizations and Required Consultations (continued)

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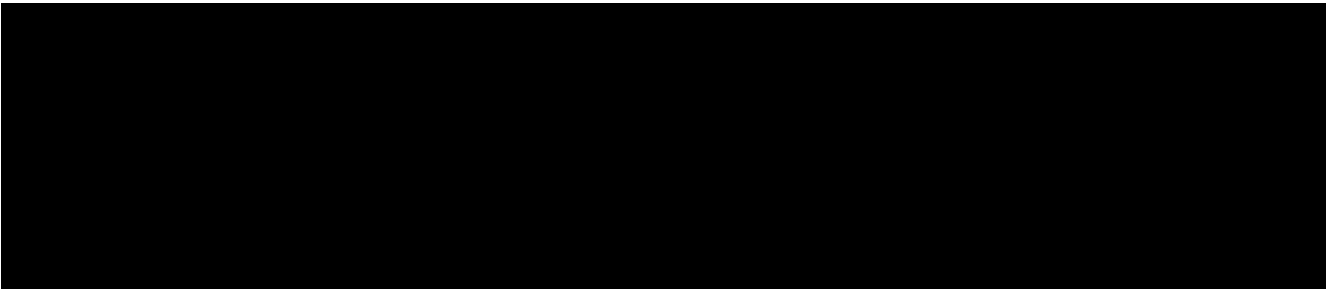
7.2 Anticipated Timeline for Seeking and Receiving Required Permits

7.2 Provide the anticipated timeline for seeking and receiving the required permits, licenses, and environmental assessments and/or environmental impact statements. Include a project approval assessment which describes, in narrative form, each segment of the process, the

required permit or approval, the status of the request or application and the basis for projection of success by the milestone date. All requirements should be included on the project schedule in Section 10.

A comprehensive list of required permits and licenses, regulatory consultations, and environmental assessments necessary for Project authorization is provided in Section 7.1. A matrix of applicable regulations and permits, including the current status and/or anticipated date of receipt, is provided in Table 7.1 through Table 7.4.

As detailed in Section 12.2, the Bidder's organization has extensive experience in acquiring permits for commercial projects of similar scale. Furthermore, the Bidder has achieved considerable progress in advancing the permitting process consistent with its comprehensive development plan and associated Project schedule (see Attachment 9-1). The timeline for application submittal and receipt for all required permits, licenses, and environmental assessments and/or environmental impact statements is detailed in Section 9.1 and is summarized below in Figure 7.1.



- Consistent engagement with regulatory agencies;
- In-depth knowledge of Federal and State permitting processes (including that gained in permitting the Block Island Wind Farm);
- Project milestones achieved to date; and
- Ørsted's and Eversource's collective experience in conducting environmental impact assessments and permitting large infrastructure projects.



The applicable Federal, State, and local regulatory requirements for Project development within the Lease Area and [REDACTED] are summarized in [REDACTED]. The Bidder has made significant progress in advancing the permitting and siting process for the Project, and the schedule for the Project is realistic based on work completed to date, including site assessment activities and engagement with regulators and other stakeholders.

7.3 Prior Experience in Environmental Impact Assessment Process

7.3 Provide information detailing prior experience in environmental impact assessment processes.

The Bidder's team has unmatched experience in the development of offshore wind in the United States through its 30 MW Block Island Wind Farm, which is the first offshore wind farm constructed in America. The Block Island Wind Farm has been in commercial operation since December 2016. Ørsted team members managed all aspects of the development, permitting, engineering, procurement, financing, and contracting for the Block Island Wind Farm, a process that began in 2008. The Bidder has supplemented that with personnel from its Owners, Ørsted and Eversource, who have extensive experience in permitting of complex infrastructure projects across Europe and New England, including the undertaking of Environmental Impact Assessments (EIAs) as part of the development process. Additionally, the Bidder is supported by environmental consultants with extensive experience in permitting large offshore energy and terrestrial transmission projects in New England.

In addition to the Block Island Wind Farm, Ørsted has a proven track record for successfully leading the development process including EIA work involving approximately 25 offshore wind farm projects. The extensive experience Ørsted brings to the Project team through producing or managing the EIA or being the responsible lead for obtaining or amended existing permits for construction and/or operation of offshore wind projects across Europe and southeast Asia is illustrated in Figure 7.2 and Table 7.5.

Figure 7.2 Projects where EIA or Major Permitting Work was carried out by Ørsted

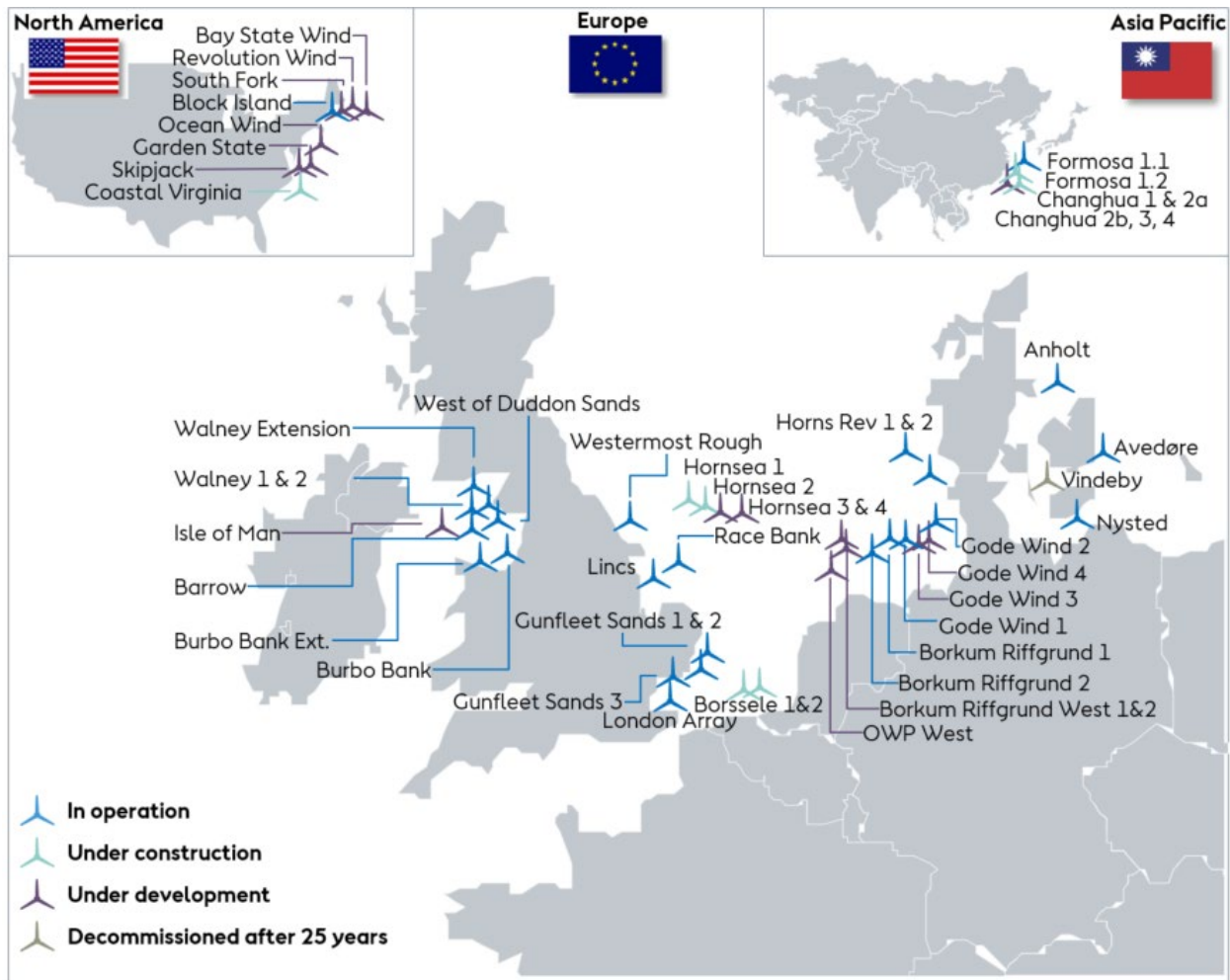


Table 7.5 Ørsted Experience in Permitting Offshore Wind Farms

Project	Country	Permit approval	Ørsted permitting involvement	Capacity (MW)	Construction Completed
Vindeby	DK	1990	First-ever offshore windfarm in the world. Project was successfully decommissioned by Ørsted in 2017.	4.95	1991
Middelgrunden	DK	1999	Ørsted responsible for permitting process for the WTGs located close to Copenhagen.	20	2000
Horns Rev 1	DK	2001	Ørsted responsible for permitting process.	160	2002
Nysted	DK	2001	Ørsted responsible for permitting process.	166	2003
Horns Rev 2	DK	2005	Ørsted responsible for permitting process.	209	2009
Avedøre	DK	2008	Ørsted responsible for permitting process for intertidal-based WTGs.	7	2009
Gunfleet Sands 1 + 2	UK	2004	Ørsted responsible for permitting process for offshore and onshore parts of the development.	108 + 65	2011

Table 7.5 Ørsted Experience in Permitting Offshore Wind Farms (continued)

Project	Country	Permit approval	Ørsted permitting involvement	Capacity (MW)	Construction Completed
Walney I+2	UK	2008	Ørsted responsible for permitting process for offshore and onshore parts of the development.	184+ 184	2012
London Array I	UK	2006	Ørsted responsible for permitting process for offshore and onshore parts of the development.	630	2012
Anholt	DK	2010	Consent provided by Authority. Ørsted responsible for specific stakeholder agreements (e.g. with fisheries) and environmental monitoring.	400	2013
Gunfleet Sands III Demo	UK	-	Ørsted responsible for permitting process for offshore and onshore parts of the demonstration project.	12	2013
West of Duddon Sands	UK	2008	Ørsted responsible for permitting process for offshore and onshore parts of the development.	389	2014
Borkum Riffgrund I	DE	2004/ 2014	Permitted by other developer. Ørsted applied for amendment of existing consent to allow for the first-ever suction buckets in Germany. Successfully managed challenging noise requirements during construction.	312	2015
Westermøst Rough	UK	2012	Ørsted achieved amendment of existing consent under the Section 36 regime to allow for bigger WTGs. Achieved local planning consent for onshore substation at very short timescale.	210	2015
Gode Wind I+II	DE	2013	Ørsted applied for amendment of existing consent to allow for bigger WTGs. Successfully managed challenging noise requirements during construction.	332+252	2016
Block Island Wind Farm	US	2014	Ørsted responsible for permitting process for offshore and onshore parts of the development.	30	2016
Burbo Bank Extension	UK	2014	Ørsted responsible for full Development Consent Order (DCO) process including consultation with all stakeholders. Onshore infrastructure constructed in Wales requiring local permits.	258	2017
Walney Extension	UK	2014	Ørsted responsible for full DCO process including consultation with all stakeholders for the offshore and onshore aspects of the development. Managed various issues related to offshore and onshore environmental impacts.	660	Under construction
Hornsea Project I	UK	2014	Ørsted involved in DCO process with previous project owner. Managed various issues related to offshore and onshore environmental impacts.	1218	Under construction
Race Bank	UK	2015	Ørsted achieved amendment of existing consent from 2012 under the Section 36 regime to allow for bigger WTGs and changed cable route. Managed crossing of protected area in intertidal zone using bespoke installations tools.	565	Under construction

Table 7.5 Ørsted Experience in Permitting Offshore Wind Farms (continued)

Project	Country	Permit approval	Ørsted permitting involvement	Capacity (MW)	Construction Completed
Borkum Riffgrund 2	DE	2016	Ørsted applied for amendment of existing consent to allow for bigger WTGs and foundation choice to include both monopiles and suction bucket.	450	Under construction
Hornsea Project 2	UK	2016	Ørsted responsible for full DCO process including consultation with all stakeholders for the offshore and onshore aspects of the development. Managed various issues related to offshore and onshore environmental impact.	1300	Under construction
Hornsea Project 3	UK		DCO in process by Ørsted.	-	Under development
South Fork Wind Farm	US		COP under review by BOEM.	~130	Under development
Revolution Wind	US		COP under preparation by Ørsted and Eversource.	704	Under development
Bay State Wind	US		COP under review by BOEM.	-	Under development
Ocean Wind	US		COP under preparation by Ørsted.	1100	Under development
Sunrise Wind	US		COP under preparation by Ørsted and Eversource.	880	Under development
Skipjack Wind Farm	US		COP under review by BOEM.	120	Under development
Greater Changhua	TW		EIA under preparation by Ørsted.	-	Under development

Similarly, Eversource has experience in the development of large, complex energy projects that require robust EIAs over the past 10-15 years. Eversource has invested approximately \$6.0 billion over the past 3 years on new energy infrastructure in the northeast.

Eversource has developed extensive relationships with local, state, and federal agencies with which it is necessary to work to successfully site and permit such projects and is intimately familiar with the regulatory framework in the New England states. Table 7.6 provides an overview of several illustrative projects for which Eversource was required to complete the robust EIA process with either federal and/or state oversight. These projects, several of which are interstate transmission projects, demonstrate Eversource's experience in completing permitting and siting efforts for multi-State projects and is directly applicable to the Project. This experience demonstrates Eversource's ability to complete these processes successfully, and to secure approvals/authorizations that are consistent across multiple jurisdictions.

Table 7.6 Eversource EIA Experience – Project Highlights

Environmental Permitting Scope	Permit / Siting Challenges	Outcome/Status
Martha's Vineyard Hybrid Submarine Cable Project – Construction of a 4.5-miles (7.2-km)-long cable across Vineyard Sound from Falmouth, MA to Tisbury, MA. This was a first-of-its-kind collaboration between Comcast and Eversource (NSTAR).		
<p>National Environmental Policy Act (NEPA) review by lead federal Agency (USACE)</p> <p>Section 106 consultation with Massachusetts Historical Commission and Bureau of Underwater Archaeological Resources</p> <p>Section 401 Water Quality Certification by the MassDEP M.G.L. Chapter 91 Waterways Licensing from MassDEP</p> <p>Massachusetts Environmental Policy Act (MEPA) review, including preparation of Draft and Final Environmental Impact Reports</p> <p>Massachusetts Department of Public Utilities (DPU) Siting Division Section 72 License</p> <p>Consultation with Massachusetts Office Coastal Zone Management and review under the Massachusetts Oceans Management Plan</p> <p>Consultation with Massachusetts Division of Fisheries & Wildlife's Natural Heritage & Endangered Species Program (NHESP)</p> <p>Consultation with Massachusetts Division of Marine Fisheries</p> <p>Cape Cod Commission Development of Regional Impact review</p> <p>Martha's Vineyard Commission Development of Regional Impact review</p> <p>Local Conservation Commission approval under the Wetland Wetlands Protection Act</p>	<p>First infrastructure project permitted under the Massachusetts Ocean Management Plan (implemented on Dec 31, 2009)</p> <p>Underwent three project siting reviews (DPU, Cape Cod Commission, and Martha's Vineyard Commission Development of Regional Impact review)</p> <p>Collaborative effort with Comcast Cable company</p> <p>Traversed busy public ferry service route during installation</p> <p>Protected eelgrass beds along shoreline</p>	<p>Successful installation on time and on budget</p> <p>Avoided protected eelgrass beds</p> <p>Awarded the Environmental Business Council's Nicholas Humber Environmental-Energy Award for Outstanding Collaboration (2013)</p>

Table 7.6 Eversource EIA Experience – Project Highlights (continued)

Environmental Permitting Scope	Permit / Siting Challenges	Outcome/Status
Greater Springfield Reliability Project – High-voltage transmission project involving construction of a new 39-mile (63-km) 345 kV circuit from Bloomfield, CT to Ludlow, MA. This multi-State project included multiple system upgrades with over 600 new transmission structures and 13 new or rebuilt substations and switching stations.		
NEPA review by lead federal Agency (USACE) MEPA review, including preparation of Draft and Final Environmental Impact Reports Section 401 Water Quality Certification by MassDEP and the CT Department of Energy and Environmental Protection (CT DEEP) Section 404 Permitting under the Clean Water Act by the USACE Siting Approval by the Massachusetts Energy Facilities Siting Board and the CT Siting Council (CSC) M.G.L. Chapter 91 Waterways Licensing from MassDEP for crossing of the Connecticut River Local Conservation Commission approval under the Wetland Wetlands Protection Act in the cities/towns of Agawam, West Springfield, Springfield, Chicopee and Ludlow	Consultations with multiple environmental agencies in MA, including the Massachusetts Historical Commission (MHC), NHESP, and the Massachusetts Department of Conservation and Recreation Avoidance and minimization of wetland impacts Development of compensatory wetland mitigation plan Acquisition of land and land rights to support expansion of transmission rights-of-way, including land rights needed from Massachusetts Department of Conservation and Recreation Section 106 consultations with Native American Tribes	Development of cultural avoidance and mitigation plans approved by all Tribes, USACE, MHC, and the Advisory Council on Historic Preservation All siting approvals and permits received NEPA Finding of No Significant Impact (FONSI) Project completed and placed in service in 2013 Project was finished on time and under budget, despite challenging weather events that included Superstorm Sandy and the blizzard of 2013
Long Island Replacement Cable Project – Replacement of a 139 kV submarine cable system within Long Island Sound, between Norwalk (CT) and Northport (Long Island, NY). The existing system was installed in the late 1960s and consisted of seven (7) fluid filled cables surface laid on the floor of Long Island Sound. Due to a history of cable impacts and leaks, Eversource (CL&P) proposed to replace the system in the early 2000s with three cross-linked polyethylene (XLPE) cables (3-phases per cable, 3 circuits in total) buried in sediments using jetting methodologies.		
NEPA review by lead federal Agency (USACE) Section 404 Permitting under the Clean Water Act by USACE Section 401 Water Quality Certification by New York State Department of Environmental Conservation Section 401 Water Quality Certification by the CT DEEP, and Office of Long Island Sound Programs Permitting by CT DEP Siting Approval by the CSC Article VII Siting Approval by the Public Service Commission	Active use of shellfish aquaculture beds in Norwalk Harbor and south of Sheffield Island (CT) Long term monitoring of impacts to shellfish resources Water quality impacts associated with removal of existing cables and jetting/burial of new cables Disruption/effects on CT and NY Lobster industry in Long Island Sound Effects on fisheries and marine mammals during construction	Successful consultations with lobstermen and shellfish interests/organizations and development of construction mitigation to minimize/avoid impacts All siting approvals and permits received NEPA FONSI Project completed and placed in service in 2008, on time and on budget

Table 7.6 Eversource EIA Experience – Project Highlights (continued)

Environmental Permitting Scope	Permit / Siting Challenges	Outcome/Status
Interstate Reliability Project – This project spanned 3 States: Connecticut, Rhode Island, and Massachusetts and was completed in cooperation with National Grid. In Connecticut, the project included 37 miles (59 km) of new 345 kV transmission lines in 11 CT Towns: Lebanon, Columbia, Coventry, Mansfield, Chaplin, Hampton, Brooklyn, Pomfret, Killingly, Putnam, and Thompson. The project also included upgrades at three existing substations: Card Street Substation (Lebanon), Lake Road Switching Station (Killingly), and Killingly.		
NEPA review by lead federal Agency (USACE) Section 401 Water Quality Certification by CT DEEP Section 404 Permitting under the Clean Water Act by the USACE Siting Approval by the CSC	Consultations with multiple environmental agencies in CT, including the Natural Diversity Data Base, the CT State Historic Preservation Office, Avoidance and minimization of wetland impacts Development of compensatory wetland mitigation plan Acquisition of land and land rights to support expansion of transmission rights-of-way Section 106 consultations with Native American Tribes	Development of cultural avoidance and mitigation plans approved by all Tribes, the USACE, MHC, and the Advisory Council on Historic Preservation. All siting approvals and permits received NEPA FONSI Project completed and placed in service in 2015 Project was finished on time and on budget

7.4 Fisheries Mitigation Measures

7.4 Please provide information on any fisheries mitigation measures designed to avoid, minimize and mitigate impacts on the commercial fishing industry, including but not limited to, progress on the following practices: fisheries outreach and communication plan; project siting and design; and financial compensation.

The Bidder is committed to building sustainable working relationships with fisheries stakeholders throughout all phases of the Project, with a focus on meaningful engagement that produces mutual benefits. Our goal is to keep fishermen fishing. We know that offshore wind and all other ocean users can coexist as we see that happening every day at the Block Island Wind Farm.

The Bidder intends to follow Ørsted's Fisheries Communication and Outreach Plan with the commercial and recreational fishing community. The Bidder's organization has extensive construction and operational experience and capability as evidenced by the development, construction, and operation of 25 offshore wind farms globally. In the past, outreach with commercial and recreation fishing community has resulted in significant changes to wind projects, including cable routing, array layout, and turbine placement. This exchange of information with the fishing industry has been mutually beneficial, resulting in fewer conflicts and better collaboration. [REDACTED]

The Bidder's organization has a dedicated Marine Affairs department made up of veteran mariners and commercial fishermen that specifically work in coordination with marine stakeholders, including commercial and recreational fishermen. The Fisheries section of Marine Affairs is made up of a Fisheries Relations Stakeholder Manager, several Fisheries Liaisons and a wide network of onshore and offshore Fisheries Representatives. Outreach conducted by the Marine Affairs department has provided input into the Fisheries Communication and Outreach Plan (Fisheries Plan), which has been implemented for the Project. [REDACTED]

In addition to the Fisheries Plan discussed below, the Bidder has implemented, and, in connection with the permitting of the Project, will continue to implement relevant mitigation strategies as discussed in BOEM's *Guidelines for Providing Information on Fisheries Social and Economic Conditions for Renewable Energy Development on the Atlantic Outer Continental Shelf Pursuant to 30 Code of Federal Regulations (CFR) Part 585 and Development of Mitigation Measures to Address Potential Use Conflicts between Commercial Wind Energy Lessees/Grantees and Commercial Fishermen on the Atlantic Outer Continental Shelf Report on Best Management Practices and Mitigation Measures*. The Bidder continues to emphasize transparency in its engagement with the fishing community, addressing issues in a manner consistent with BOEM's suggested methods while exploring ways to go above and beyond the guidelines.

7.4.1 Fisheries Outreach and Communication Plan

Attachment 7-2 includes the Fisheries Communication and Outreach Plan for the Project (Fisheries Plan). The Bidder expects this Fisheries Plan to evolve as a result of the Federal

and State permitting process, as well as continuing engagement with stakeholders such as the commercial fishing industry. The Bidder will appropriately refine and modify this Fisheries Plan through the development, construction and/or operation of the Project.

Core Philosophy – the 4 Cs

The core of the Bidder's fisheries engagement philosophy revolves around the 4 Cs:

Communication: The Bidder will conduct an active dialogue with fishermen to understand their concerns about offshore wind energy development, learn what is necessary for fishermen to successfully operate in the area of an offshore wind energy project, and plan the Project to minimize the potential for conflict. The Bidder will provide clear, relevant, and timely information on activities with the fishing industry including general information about offshore wind energy, specific details on the Project, the schedule for on water activities, available science and the results of our studies and assessments. The Bidder will engage with and listen to representatives of the many different types of fishing activities that take place in the Project Area.

Coordination: The Bidder will share relevant information about wind energy and the proposed activities that could affect the fishing industry and coordinate activities to minimize impacts on fishermen. The Bidder will seek input from Fisheries Representatives and Liaisons and other industry organizations to enable the Bidder to continually improve coordination with commercial and recreational fishermen of all gear types.

Collaboration: The Bidder will adopt Ørsted's approach in collaborative science with the commercial and recreation fishing industry before, during, and after construction. These efforts include scientific studies and surveys completed on commercial fishing vessels, in close collaboration with the fishermen active in the area. Additionally, the Bidder will collaborate with the industry to identify practical solutions to optimize access and fishing in and around the Project. Finally, the Bidder will share non-proprietary research and information gathered by the Bidder in its studies that might be of help to further understand the living marine resources in the Project Area and their habitats.

Coexistence: The Bidder will strive to fairly and quickly resolve conflicts between the Project and individual fishermen. The Bidder believes ongoing discussions with the fishing industry will be more constructive if both parties are better informed about the nature of the other's business and if there is trust and open communication on both sides. The Bidder will employ an extensive fisheries outreach network to assist in this effort. Information gained during outreach with commercial and recreation fishing interests will be used to inform the layout of Project facilities (WTG locations, spacing, submarine cables, onshore facilities, etc.) with a focus on minimizing conflicts so that the Project and fishing can co-exist with each industry thriving in a shared environment. This open communication will continue throughout all phases of the Project and provide an "open door policy" for fishermen to voice their concerns.

Plan Development

The Project Fisheries Plan was developed consistent with the approach used by Ørsted in other offshore wind projects and tailored for the uniqueness of the fisheries industry in New England. Throughout Project development activities to date, Fisheries Liaisons in cooperation with Fisheries Representatives, working in liaison with the Marine Affairs department, has

collected data about the fishing communities associated with the Project Area. This information has been incorporated into the Fisheries Plan, which serves as the foundation for outreach activities, providing insight into the communities and pathways for successful communication. The Fisheries Plan will continue to evolve throughout the Project development process.

As part of that effort, the Bidder will continue to develop its network of Fisheries Representatives, while remaining consistent with BOEM Guidelines. Fisheries Representatives are knowledgeable members of the affected fishing communities who are responsible for collecting and disseminating information as well as serving as a conduit for concerns; they are chosen after consultation with community members and are compensated for their time and expertise. The Bidder has already engaged multiple Fisheries Liaisons as well as Fisheries Representatives in Massachusetts, Rhode Island, Connecticut and New York and New Jersey. Current and former Fisheries Representatives that the Bidder has engaged with include Martha's Vineyard Fishermen's Preservation Trust, Massachusetts Lobstermen's Association, the New Bedford Port Authority, the Commercial Fisheries Center of Rhode Island, and Rodman Sykes.

Ørsted, in an industry-first initiative, has partnered with the Responsible Offshore Development Alliance (RODA) to help improve communication between the commercial fishing industry and offshore wind energy developers. RODA is a broad membership-based coalition of fishing industry associations and fishing companies with an interest in improving the compatibility of new offshore development with their businesses. A core component of the partnership is the creation of a joint industry task force to explore improved approaches to project siting, design, and operation. The industries have already engaged in extensive communication regarding topics of concern to identify and develop transparent strategies for long-term avoidance and mitigation. RODA directly collaborates with relevant regulatory agencies (e.g., National Marine Fisheries Service, Bureau of Ocean Energy management, U.S. Coast Guard, fishery management councils, and state agencies), offshore developers, science experts, and others to coordinate science and policy approaches to managing development of the Outer Continental Shelf in a way that minimizes conflicts with existing traditional and historical fishing. This initiative provides a more structured process for further collaboration between the offshore wind and fishing industries.

The Fisheries Plan addresses the following three phases of the Project:

Surveys: Prior to start of survey activities, the Bidder has provided regional fishing interests with information on survey activities through extensive outreach by its Fisheries Liaisons and Fisheries Representatives. Before surveys commenced, the Bidder has issued specific Notices to Mariners (NTMs) in coordination with USCG. The NTMs have been broadcast by the USCG to the maritime and boating community. Examples of prior Notices to Mariners can be found at: <http://dwwind.com/information-for-mariners/> or <https://us.orssted.com/Mariners>.

The Bidder has also used an innovative program during prior and ongoing survey efforts to employ fishermen ashore or aboard survey vessels to advise on how to avoid conflict with other vessels or fishing gear in the area where the vessel is operating. In this program, an experienced fisherman has been employed to advise the vessel master and crew on fishing activity encountered. The fisherman, chosen for his/her depth of knowledge of the local

fishery, assists in avoiding gear interactions, serves as a trustworthy point-of-contact for fishermen on the docks or marine radio, and collects valuable data on vessels and fisheries active in the survey area.

Examples of activities that have been utilized for the Project surveys and planning include the following:

- Held discussions, meetings and notices in Project associated ports with local fishermen;
- Keeping mariners informed. Broadcast by the USCG Notices to Mariners, which were widely distributed electronically and physically and updated regularly;
- Notification and information about survey activities were distributed through digital listservs and commercial publications;
- Notification and information about survey activities were distributed in hardcopy directly to fishermen active in the survey area;
- Widely distributed contact information for Fisheries Representatives/Liaisons;
- Engaged a network of Fisheries Representatives/Liaisons for information distribution;
- When appropriate, employed experienced fishermen on survey vessels or ashore to assist in communications and de-confliction during survey activities; and
- Used very high frequency (VHF) radio to communicate vessel intentions at designated intervals during on water activity.

Construction: During the construction phase, the Bidder plans to engage in similar notification campaigns as described above, to alert fishermen and other mariners of the schedule of construction activities. The construction phase of the Project will see an increase in vessel activities, and the Bidder will coordinate with the USCG and other maritime stakeholders in the Project Area to minimize concerns and maintain safe operations. This will be further facilitated using a 24/7 Marine Coordination Center as the base for communications. Fishing vessels active near the construction areas will be communicated with via radio and other best available communication technology at time of construction. The Bidder will develop and refine construction communication plans in coordination with Federal and State agencies, as well as with the fishing industry and other mariners.

Examples of these activities include the following:

- Use a 24/7 Marine Coordination Center as a base of communications for all Project vessel activity to maritime stakeholders, which may utilize technology such as VHF/ultra-high frequency (UHF) marine radio and Automatic Identification System (AIS) monitoring;
- Develop a Project-specific website or web page to support sharing of information about Project construction progress;
- Issue USCG Notices to Mariners; Include on notices the Bidder's extensive list of maritime stakeholder contacts;
- Follow established procedures for gear loss prevention and interactions that may occur in the Project Area;

- Work with fishing gear groups to consider potential conflicts with gear types in the context of seasonal schedules;
- Distribute notifications and information about activities directly to fishermen active in the construction area using best available means;
- Continue to widely distribute contact information for Fisheries Representatives/Liaisons; and
- Engage our network of Fisheries Representatives/Liaisons for information distribution and gather feedback on communication progress.

Operations: The Bidder plans to engage in similar outreach efforts tailored to Project operations. During the operations phase, vessel activity and maintenance campaigns will continue to be communicated as needed and ongoing stakeholder feedback will be incorporated and updated via the fisheries outreach and communications plan.

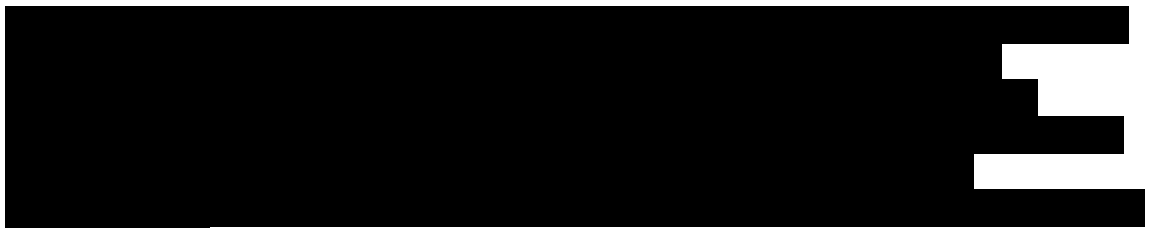
Examples of these efforts include:

- Use a Marine Coordination Center as a base of communications for all Project vessel activity to maritime stakeholders which may include technology such as VHF/UHF marine radio and AIS monitoring;
- Conduct stakeholder meetings to provide information on non-routine maintenance and servicing activities (if necessary), to identify issues or concerns;
- Maintain a Fisheries Liaison to ensure prompt response to stakeholder questions or concerns;
- Foster and utilize the Fisheries Outreach network for distribution of information on operations activities and maintenance vessel deployment as needed; and
- Continue to welcome an open-door policy for feedback on the Project.

7.4.2 Project Siting and Design

Since the Project's infrastructure design elements have the potential to adversely impact fishing and maritime activity, the Bidder has embarked on an extensive data gathering campaign to understand the Project Area. Data gathering activities have included:

- Reviewing existing data from surveys and studies,
- Conducting outreach with the fishing industry,
- Consulting with federal and state agencies, and
- Conducting site assessment surveys.



The Bidder has also been consulting with Federal and State agencies and other stakeholders.

To assess and quantify changes or impacts to wildlife attributable to the Project, the Bidder plans to conduct pre-, during, and post-construction site-specific studies of the potential effects of the Project on fisheries resources. As part of that process, the Bidder will work with local stakeholders, including fishermen, to identify priorities using outreach, surveys and questionnaires to assist in building consensus. The Bidder will also consult with the multiple State agencies, industry groups and associations to assist in the process.

As described above, the Bidder will continue to conduct research and undertake extensive outreach with fishermen to develop an understanding of how the Project Area is currently, and has been historically, used by commercial and recreational fisheries. The Bidder will engage in discussions and participate in workshops with fishermen and local organizations to map typical transit routes taken by fishermen within the Project Area.

The Bidder plans to continue Ørsted's strong response and commitment to fishing industry needs in design and implementation of its projects. Examples of that commitment include:

- Integrating experienced fishermen where their working knowledge directly enhances the projects, while also providing a fisherman's perspective on fishing activities as a unique additional data set;
- Reviewing public AIS, VMS, and landings data; view WindPlot data from fishermen; and consulting with various fishing stakeholders to determine where and how they fish and how they transit to and from their fishing grounds to incorporate into Project design, layout, and navigational risk assessments;
- Monitoring navigation data and information and continuing to consult with fishery stakeholders to determine the extent and impact of deviations to transiting routes and fishing patterns resulting from the wind farm; and
- Supporting and collaborating with RODA as well as local, State and Federal agencies in development of regional science strategies.

By collecting data on the Project, siting the Project outside of sensitive areas to the extent feasible, and working with stakeholders to design the Project to coexist with current fishing activities, the Bidder intends to avoid significant impacts to fisheries. The Bidder has sought input from the fishing industry and maritime industry to locate foundations and cable routes in the least impactful manner that is practicable for the Project.

[REDACTED]

The Marine Affairs department within the Bidder's organization has worked in coordination with marine stakeholders including the USCG Headquarters, Districts and Sectors, National Harbor Safety Committees, Pilots Organizations, commercial shipping, commercial and recreational fishing, addressing key concerns such as navigation, vessel access and safety. All of these provide input and feedback on project design considerations.

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

The Bidder has engaged, and will continue to engage, with stakeholder groups, regional fishermen, and other maritime stakeholders such as maritime experts and marine safety committees to determine Project layouts that can address stakeholder concerns.

7.4.3 Financial Compensation

The Bidder's organization is the first offshore wind developer in the U.S. to publish a Gear Conflict Prevention and Claim Procedure to address the potential for gear interaction between offshore wind activities and fishing activities. [REDACTED]

[REDACTED] The procedure was designed to be as straightforward as possible for the affected fishermen, while providing a transparent, fair, and balanced review process. The prevention measures and procedure are not meant to be exhaustive and will continue to be modified and improved.

Highlights of the procedure include:

- 1) Communication: What's happening, where, when?
 - Dockside: Fisheries Liaisons work with port Fisheries Representatives to identify mariners that fish in areas where on-water work is planned and communicate to those fishermen directly.
 - Website: Information for Mariners page will include project specific information and details for on water activities including vessel names and how to contact them.
 - Notice to Mariners (USCG): Notices broadcast by USCG via VHF and available online.

- Jump drives: Loaded with locations of existing facilities.
- VHF: Updates daily.
- Transit routes: Project vessels will attempt to follow general transit routes to and from port, as safe navigation practices permit.

2) Training:

- Personnel working offshore are trained on the procedures and on how to identify/avoid fishing gear.
- Contractors are given a briefing on the importance of the local fishing communities and instructed to communicate early and often with fishing vessels while always following USCG Rules of the Road.

3) Lessons Learned:

- Gather feedback and seek to continually improve communication on vessel activities.
- Incorporate lessons learned from previous interactions with local vessels.
- Vessels including Project vessels and individual fishing vessels should seek to avoid gear loss and follow prevention best practices.



7.5 Preliminary Environmental Characterization of the Site and Project

7.5 Provide a preliminary environmental characterization of the site and project, including both construction and operation. In addition, the bidder should identify environmental impacts associated with the proposed project and any potential impediments to development. A plan to avoid, minimize, or mitigate such impacts or impediments should also be included. The analysis should address each of the major environmental areas presented below, for the proposed project:

- i. Air quality
- ii. Community
- iii. Cultural resources
- iv. Fishery, avian, and marine mammal impacts
- v. Other ecological and biological resources (including endangered species)
- vi. Landscape and visual
- vii. Oceanography
- viii. Sound, noise and vibration
- ix. Socio-economic and land use
- x. Traffic and transportation (including Navigation)
- xi. Water resources (including quality and flood risk)

[REDACTED]

As described in Sections 7.2, 7.4 and 7.6, the Bidder is working with Federal and State agencies, federally recognized Tribes, and other stakeholders to appropriately assess environmental resources of concern, avoid and/or mitigate potential effects, and obtain the necessary permits and approvals to support the construction and operation of the Project.

[REDACTED]

- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]

The Bidder has engaged with the regulatory community before, during, and after completing the above-listed assessments to ensure that regulatory requirements and expectations are adhered to with regard to data quality and deliverables in support of the COP.

[REDACTED]

[REDACTED]		
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]

Standards (NAAQS). All of the towns on Martha's Vineyard are also included in the Metropolitan Providence Interstate Air Quality Control Region (AQCR 120), which is designated as attainment for all NAAQS. The entire state of Rhode Island is designated as attainment for all NAAQS. Rhode Island was previously designated as nonattainment for the 1-hour ozone standard and for the 1997 8-hour ozone standard. However, both of these NAAQS have been revoked by U.S. Environmental Protection Agency (EPA).

Air Quality Impact Assessment and Summary of Avoidance, Minimization and Mitigation Measures	
Potential Environmental Impacts and Impediments to Development	<div></div>
Avoidance, Minimization and Mitigation Measures	<div></div>
	<div></div>
	<div></div>
	<div></div>
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	<div></div>
	<div></div>
	<div></div>

Community:

Community Impact Assessment and Summary of Avoidance, Minimization and Mitigation Measures	
Potential Environmental Impacts and Impediments to Development	<div></div>
Avoidance, Minimization and Mitigation Measures	<div></div>

Community Impact Assessment and Summary of Avoidance, Minimization and Mitigation Measures	

Cultural resources: Cultural resources, marine and terrestrial, have the potential to exist in the Project Area and be impacted during installation of Project components. Therefore, the Project has completed desktop and site-specific surveys in coordination with Federal and State agencies and other stakeholders such as the Tribes to determine the presence of resources and determine appropriate measures to avoid and/or mitigate impacts.

Cultural Resources Impact Assessment and Summary of Avoidance, Minimization and Mitigation Measures	
Potential Environmental Impacts and Impediments to Development	
Avoidance, Minimization and Mitigation Measures	

Cultural Resources Impact Assessment and Summary of Avoidance, Minimization and Mitigation Measures	

Fishery, avian, and marine mammals:

Finfish and Shellfish: Finfish within the Project Area can be categorized in two groups based on vertical habitat use: demersal and pelagic. Demersal fishes tend to occur near the substrate and feed on benthic organisms supplemented by organic material that drifts down to the substrate through overlying waters. Demersal species likely to occur in the Project Area include:

American plaice, Atlantic cod, black sea bass, haddock, monkfish, ocean pout, red hake, scup, skates (barndoor, little, thorny, winter), smooth dogfish, spiny dogfish, silver hake, summer flounder, tautog, windowpane flounder, winter flounder, witch flounder and yellowtail flounder.

Pelagic fishes tend to occur in the water column rather than associated with the bottom. Some species remain near the water surface, while others prefer mid-water depths. Depth preferences may vary daily, seasonally, or over an individual's lifetime. Pelagic fishes that are likely to commonly occur in the Project Area include:

sharks, tunas (including the Atlantic Bluefin tuna), bluefish, butterfish, cobia, American eel, American shad, Atlantic herring, Atlantic mackerel, blueback herring, king mackerel, menhaden, Spanish mackerel, and striped bass.

Finfish and Shellfish Impact Assessment and Summary of Avoidance, Minimization and Mitigation Measures	
Potential Environmental Impacts and Impediments to Development	
Avoidance, Minimization and Mitigation Measures	

⁹ BOEM. 2014. Commercial Wind Lease Issuance and Site Assessment Activities on the Atlantic Outer Continental Shelf Offshore Massachusetts. Revised Environmental Assessment. June 2014. Available online at: <http://www.boem.gov/Revised-MA-EA-2014/>.

Avian: A large number of bird species occur in or potentially fly over the Lease Area. Birds most likely to regularly occur in the area include approximately 19 species of waterfowl, 4 species of loons and grebes, 10 species of shearwaters and petrels, 1 gannet, 2 cormorants, 2 shorebirds (phalaropes), 3 jaegers, 6 alcids (auks), and 20 species of gulls and terns.⁹ During three years of aerial surveys of the WEA and nearby waters, 25 species of seabirds were identified, with two species of sea ducks, white-winged scoter (*Melanitta deglandi*) and long-tailed duck (*Clangula hyemalis*), occurring in the highest numbers (Veit et al 2016).

Avian Impact Assessment and Summary of Avoidance, Minimization and Mitigation Measures	
Potential Environmental Impacts and Impediments to Development	<div>■ [REDACTED]</div> <div>■ [REDACTED]</div>
Avoidance, Minimization and Mitigation Measures	<div>■ [REDACTED]</div> <div>■ [REDACTED]</div> <div>■ [REDACTED]</div> <div>■ [REDACTED]</div> <div>■ [REDACTED]</div> <div>■ [REDACTED]</div> <div>■ [REDACTED]</div> <div>■ [REDACTED]</div> <div>■ [REDACTED]</div> <div>■ [REDACTED]</div>

Marine Mammals and Sea Turtles: The marine mammal (cetaceans and pinnipeds) and sea turtle species known to occur within the Northwest Atlantic OCS region, which includes the Project Area, include 38 marine mammals and five sea turtles. The abundance, distribution, and occurrence of these species varies seasonally and changes as a result of influences such as prey abundance, water temperature variations, and other factors. The OCS marine waters are habitat for marine mammal and sea turtle species and provide a setting for a variety of important life stages of these species including feeding, breeding, nursery grounds,

social conspecific interactions, and migration.¹⁰ Four endangered species of whale are known to occur within the waters of the north Atlantic OCS, four mysticetes and one odontocete – North Atlantic right whales (*Eubalaena glacialis*), fin whales (*Balaenoptera physalus*), sei whales (*Balaenoptera borealis*), and the sperm whale (*Physeter icrocephalus*). Of the five ESA listed species of sea turtles that may occur, four are the most likely to be found in these waters: leatherback (*Dermochelys coriacea*), loggerhead (*Caretta caretta*), Kemp’s ridley (*Lepidochelys kempii*), and green (*Chelonia mydas*) are known to be present in the waters off the southern New England coast, particularly in summer and fall.

Marine Mammals and Sea Turtles Impact Assessment and Summary of Avoidance, Minimization and Mitigation Measures	
Potential Environmental Impacts and Impediments to Development	<div>■ [REDACTED]</div> <div>■ [REDACTED]</div>
Avoidance, Minimization and Mitigation Measures	<div>■ [REDACTED]</div> <div>■ [REDACTED]</div> <div>■ [REDACTED]</div> <div>■ [REDACTED]</div> <div>■ [REDACTED]</div> <div>■ [REDACTED]</div> <div>■ [REDACTED]</div> <div>■ [REDACTED]</div> <div>■ [REDACTED]</div> <div>■ [REDACTED]</div>

Other ecological and biological resources (including endangered species): [REDACTED]

¹⁰ Kraus, S.D., S. Leiter, K. Stone, B. Wikgren, C. Mayo, P. Hughes, R.D. Kenney, C.W. Clark, A. N. Rice, B. Estabrook and J. Tielens. 2016. *Northeast Large Pelagic Survey Collaborative Aerial and Acoustic Surveys for Large Whales and Sea Turtles*. U.S. Department of the Interior, Bureau of Ocean Energy Management, Sterling, Virginia. OCS Study BOEM 2016-054. 117 pp. + appendices.

[REDACTED]

Federal and State jurisdictional wetland and waterbody resources are located on some portions of the onshore Project Area. Jurisdictional resources include coastal and freshwater resources located along the transmission and interconnection cable routes. [REDACTED]

[REDACTED]

Other Ecological and Biological Impact Assessment and Summary of Avoidance, Minimization and Mitigation Measures	
Potential Environmental Impacts and Impediments to Development	<div>[REDACTED]</div>
Avoidance, Minimization and Mitigation Measures	<div>[REDACTED]</div>

Other Ecological and Biological Impact Assessment and Summary of Avoidance, Minimization and Mitigation Measures	

Landscape and visual: The majority of southern Massachusetts and Rhode Island coastlines as well as the islands of Martha's Vineyard, Nantucket, and Block Island are highly developed and/or are popular tourist destinations; these areas support high levels of commercial, military and recreational vessel traffic. The Bidder completed an inventory and analysis of potentially sensitive viewpoints on mainland Massachusetts and Rhode Island, and on the islands of Martha's Vineyard, Block Island, and Nantucket that may have a direct line-of-sight view towards the Project and where views are not obscured by intervening terrain. The resources within these areas that are anticipated to have potential views of the Project include a mix of public, private and residential beaches, natural areas, and publicly accessible walking and biking paths.

Landscape and Visual Impact Assessment and Summary of Avoidance, Minimization and Mitigation Measures	
Potential Environmental Impacts and Impediments to Development	
Avoidance, Minimization and Mitigation Measures	

Landscape and Visual Impact Assessment and Summary of Avoidance, Minimization and Mitigation Measures	

Oceanography: The existing oceanographic conditions within the Project Area are considered moderate with long wave periods due to exposure to the Atlantic Ocean. The Project Area has a typical, significant wave height of approximately 5 ft which reduces towards shore. Sea states are characterized as calm to moderate, with a small fraction sea states recorded as severe. Dominate winds are from the southwest with swells primarily from the southern quadrants. Extreme weather events include Nor'easters and tropical storms, which produce high winds and low visibility conditions. Ice formation is not a regular occurrence but has been observed in the nearshore areas of the Project Area.

Oceanography Impact Assessment and Summary of Avoidance, Minimization and Mitigation Measures	
Potential Environmental Impacts and Impediments to Development	
Avoidance, Minimization and Mitigation Measures	

Sound, noise and vibration: The existing acoustic environment within the Project Area both onshore and offshore is characterized by a variety of sounds sources. Sound sources offshore consist of a combination of both natural sounds including waves, wind, precipitation and fish/marine mammals as well as anthropogenic sounds such as commercial, military, and recreational vessel traffic. Noise from ships dominates marine waters and emanates from the ships' propellers and other rotating machinery such as the main engines, gearboxes, generators, or fans machinery, the hulls passage through the water, and the increasing use of sonar and depth sounders. Other potential ship-related sources include vortex shedding from the hull, noise generated by pipes open to, and discharging into the sea, and noise associated with the wake. Most shipping contributes in a frequency range of less than one kilohertz.

The onshore Project Area is well-populated; therefore, contributors to in-air ambient sound levels would include human activity, vehicular traffic, as well as industrial and commercial sound sources. Background sound levels will vary both spatially and temporally depending on

proximity to area sound sources, roadways and natural sounds. Diurnal effects result in sound levels that are typically quieter during the night than during the daytime, except during periods when evening and nighttime insect noise may dominate the soundscape.

[illegible]

Socio-economics and land use: The communities along the Massachusetts south coast and the islands of Martha's Vineyard and Nantucket are characterized by both intensive development and/or are popular tourist destinations; these areas support high levels of commercial and recreational activity.

For the terrestrial component of the Project, current land use is largely industrial.

Socio-economics and Land Use Impact Assessment and Summary of Avoidance, Minimization and Mitigation Measures	
Potential Environmental Impacts and Impediments to Development	<p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p>

[illegible]

Traffic and transportation (including Navigation): In general, the waters off of southern New England experience high levels of commercial, military, and recreational vessel traffic. The southern edge of the Lease Area is over 20 nm (37 km) to the north of one of the busiest waterways on the east coast of the United States, the Nantucket-Ambrose TSS. AIS data shows vessels have a high fidelity to the Nantucket-Ambrose TSS lanes, and the traffic transiting in this TSS is far enough removed (greater than 8 nm from the Lease Area) from the Project Area to not be of concern.

Southern New England waters leading up to Rhode Island Sound are heavily trafficked by deep draft commercial vessels including tankers, car carriers, bulk freighters and cruise ships. Based on review of AIS data, the heaviest trafficked routes into and out of southern New England waters are to the west and northwest of the Lease Area. AIS data indicates that the majority of commercial and recreational vessel traffic is contained within the Buzzards Bay Recommended Traffic Route with some additional traffic within the Buzzards Bay TSS and the Narragansett Bay TSS. The former is primarily for vessels maintaining a coastal route through northern Rhode Island Sound, while the TSSs are for larger commercial vessels headed farther offshore. Buzzards Bay TSS is over 14 nm (26 km) from the closest point of the Lease Area, keeping traffic well outside of the Phase I Development Area. Commercial fishing and recreational boating, including sailboat racing, fishing and whale watching, are also popular in the waters of southern New England. In support of the Federal permitting process, the Bidder has completed a robust Navigational Safety Risk Assessment that will be reviewed by BOEM and USCG.

Traffic and Transportation Impact Assessment and Summary of Avoidance, Minimization and Mitigation Measures	
Potential Environmental Impacts and Impediments to Development	<div></div> <div></div> <div></div> <div></div> <div></div>
Avoidance, Minimization and Mitigation Measures	<div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div>

Traffic and Transportation Impact Assessment and Summary of Avoidance, Minimization and Mitigation Measures	

Water resources (including quality and flood risk): Waters in Project Area include marine, groundwater, and surface water resources. Marine resources in the Project Area are the Atlantic Ocean, Rhode Island Sound, and Narragansett Bay. Water quality in Rhode Island Sound are classified as ‘good’ by the EPA with the primary sources of pollutants, dissolved nutrients, groundwater discharge, and surface runoff outflow being Narragansett Bay, Long Island Sound, and Buzzards Bay. Narragansett Bay receives pollutants from major rivers that carry pollutants and runoff from urban areas. Water quality varies throughout Narragansett Bay depending on proximity to pollutant sources and tides.

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Water Resources Impact Assessment and Summary of Avoidance, Minimization and Mitigation Measures	
Potential Environmental Impacts and Impediments to Development	
Avoidance, Minimization and Mitigation Measures	

Water Resources Impact Assessment and Summary of Avoidance, Minimization and Mitigation Measures	

7.6 Documented Level of Public Project Support

- 7.6 Provide documentation identifying the level of public support for the project including letters from public officials, newspaper articles, etc. Include information on specific localized support and/or opposition to the project of which the bidder is aware. Provide copies of any agreements with communities and other constituencies impacted by the project, and a stakeholder map with a plan for community engagement activities. Please discuss the status of the stakeholder plan.

Community engagement is a critical and integral part of project siting, development, construction and operations. The Bidder has undertaken a comprehensive public engagement campaign since September 2015, focusing on affected stakeholders.

7.6.1 Public Project Support

The public response to the company's regional development projects and to the Project specifically has been positive. Multiple articles and press releases have been published providing direct support for the company and the Project, highlighting the company's experience and commitment to stakeholders (Table 7.8).

Table 7.8 Bay State Wind Project Support

1.	Bay State Wind is the first and only offshore wind project, and one of only 38 infrastructure projects nationally, to receive FAST-41 status. https://www.southcoasttoday.com/news/20180316/bay-state-wind-granted-fast-41-status
2.	Union official backs Bay State Wind. https://commonwealthmagazine.org/opinion/union-official-backs-bay-state-wind/
3.	In response to feedback from fishermen and community members, Bay State Wind has revised its turbine layout pattern. https://www.windpowerengineering.com/business-news-projects/offshore-wind-developer-collaborates-with-new-england-communities-to-revise-wind-farm-plans/
4.	Connecticut's Department of Energy and Environmental Protection has selected Ørsted's Revolution Wind project to move forward to negotiate a fixed-price power purchase agreement for 0.42TWh (terawatt hours) per year. https://www.maritime-executive.com/article/oersted-selected-for-connecticut-offshore-wind-farm

Table 7.8 Bay State Wind Project Support (continued)

5.	The Connecticut Port Authority and terminal operator of the State Pier in New London announced Thursday a \$93 million public-private partnership with a wind energy producer to upgrade the pier to capitalize on growing offshore wind energy. Bay State Wind, a joint venture of Ørsted, a wind energy company based in Denmark, and Eversource, which has committed \$225 million in a partnership with Ørsted, struck the deal with the Port Authority and Gateway, the operator of the terminal at the State Pier.
	http://ieefa.org/93-million-pier-project-in-connecticut-to-support-offshore-wind/
6.	As offshore wind companies jockey for position in preparation for Massachusetts' next round of bidding, Bay State Wind announced an adjustment to its proposal earlier this week. According to Lauren Burm, the head of public affairs for Bay State Wind, after speaking with "key stakeholders including the fishing community," the company altered its proposal in terms of spacing between turbines to a nautical mile in rows running east to west.
	https://www.southcoasttoday.com/news/20180808/bay-state-wind-alters-proposal-to-allow-more-distance-between-turbines
7.	Ørsted's new partnership with US utility Eversource will improve offshore wind permitting and local industry links and lower development costs
	https://analysis.newenergyupdate.com/wind-energy-update/orsted-deal-us-utility-sets-offshore-growth-surge
8.	Bay State Wind will hold open houses on the Vineyard and Nantucket in early December to allow community members to learn about the company as it prepares for a second bid to sell electricity to Massachusetts distributors.
	https://www.capecodtimes.com/news/20181118/bay-state-wind-plans-open-houses-on-vineyard-nantucket
9.	Bay State Wind will host an open house on Wednesday, Dec. 5, to hear from the public about the development of an offshore wind project off the southern Massachusetts coast, according to a press release. The open house will run from 4 to 6 pm at the Loft Restaurant, with a brief presentation about the project at 4:30 pm.
	https://www.mvtimes.com/2018/11/16/bay-state-wind-host-open-house/
10.	The infant US offshore wind industry, perhaps, reached adolescence at the start of this week when Europe's leading developer Ørsted announced it had acquired Deepwater Wind, the only firm with steel in the water to date. Ørsted had already raided its piggybank this summer, when it acquired US onshore developer Lincoln Clean Energy, marking the Danish firm's re-entrance into the onshore wind sector. But while these acquisitions, totaling \$1.09 billion, give Ørsted a sizeable market share, it also comes with the people and expertise Ørsted needs to make a success of its American dream.
	https://www.windpowermonthly.com/article/1495767/opinion-orsted-us-shopping-spree-not-just-capacity
11.	NEW BEDFORD — Bay State Wind invites residents to learn about a new clean energy sector — offshore wind — and have some hands-on fun in the process by building a model of an offshore wind farm at the July 11 AHA! Night.
	https://www.southcoasttoday.com/news/20190707/bay-state-wind-invites-families-to-build-wind-farm
12.	London — A little-known Danish company may have some of the answers for tackling climate change. Whether it has the impact it hopes will depend in part on its ability to compete with some of the biggest energy companies on the planet. Over the last three decades, the company, Ørsted, has figured out how to build giant wind farms powered by turbines the size of jumbo jets in the shallow waters around northern Europe.
	https://www.nytimes.com/2019/05/09/climate/orsted-offshore-wind-power-climate-change.html

Table 7.8 Bay State Wind Project Support (continued)

13. **NEW BEDFORD** — Bay State Wind is hosting four open houses to discuss its proposed offshore wind farm south of Martha's Vineyard. The project is being developed as a joint venture between Ørsted (formerly DONG Energy) and Eversource Energy, which together make up Bay State Wind.

https://www.southcoasttoday.com/news/2017/11/24/bay-state-wind-to-host-open-houses?fbclid=IwAR0VLx9RtA9oI6FTsZKIK5Kb-xHEbLv-qxwxyKrfH5ugbbWYpe_98IT7Mow

Documented Outreach and Public Engagement

Our community engagement and stakeholder plans have been thoughtfully developed with key constituencies in mind. We have been executing these plans for four years by engaging with local communities from Martha's Vineyard to Boston and the South Coast down to New Bedford, Massachusetts and Tiverton, Rhode Island. Our efforts include proactively reaching out to local communities through informational meetings, press releases, website promotion and a significant presence on social media.

Another key element of our outreach is open houses which we have been hosting since 2017. These open houses have helped educate stakeholders and solicit feedback on benefits and potential concerns. This feedback has then been incorporated into our Project design such as our turbine layout reconfiguration. As we move through permitting and construction, we are committed to a number of open house events at key stages in the development of the Project to provide an opportunity for stakeholders to continue to engage with the Project team.

below is a summary of our efforts to date. A more detailed record of agency and Tribal engagement is provided in Attachment 7-3.

The image shows a document with a blue header bar at the top. Below the header, there are several lines of text that have been completely redacted with black boxes. The redactions cover most of the content on the page, leaving only a few small fragments of text visible. The layout appears to be a standard document with a header and multiple paragraphs of body text.

[illegible]

The Bidder's initial outreach and engagement has resulted in letters of support for the Project from several individuals and organizations, as identified in [REDACTED]. Copies of these letters are included in Attachment 7-4.

Category	Value
Category 1	10
Category 2	20
Category 3	30
Category 4	40
Category 5	50
Category 6	60
Category 7	70
Category 8	80
Category 9	90
Category 10	100

7.6.2 Agreements with Regional Organizations

As detailed in this section, the Bidder has entered into several agreements with interested and affected constituencies. These include:

- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]

Copies of these MOUs can be found in [REDACTED]

7.6.3 Conclusion on Project Support

As documented above, the Bidder has made a concerted effort to understand and genuinely address the concerns of a diverse group of stakeholders through a comprehensive outreach effort. The Bidder has fully embraced the concept of “early and often” community engagement. The Project has developed a systematic and strategic approach to bringing the Project to local communities for their feedback and input. Through this continual engagement, the Project will continue to support host communities and refine the development, construction, and operation of the Project to reflect the priorities of the Commonwealth.

7.7 New Class I Renewable Portfolio Standard Eligible Resource Documentation

7.7 Provide documentation demonstrating that the project was or will be qualified as New Class I Renewable Portfolio Standard Eligible Resource under M.G.L. c. 25A, § 11F, and 225 CMR 14.00.

As a new offshore wind energy facility, energy from the Project will qualify as a New Class I Renewable Portfolio Standard (RPS) Eligible Resource because it meets the standards defined in M.G.L. c. 25A, § 11F, and 225 CMR 14.00.

While the Bidder has not currently submitted its Class 1 RES application with the Massachusetts Department of Energy Resources (DOER), it will do so at the appropriate time, and provide documentation once available.

7.8 Appropriate Tracking System Information and Documentation

7.8 All bidders must include sufficient information and documentation that demonstrates that the bidder will utilize an appropriate tracking system to ensure a unit-specific accounting of the delivery of Offshore Wind Energy Generation, to enable the Department of Environmental Protection, in consultation with DOER, to accurately measure progress in achieving the commonwealth's goals under chapter 298 of the acts of 2008 or Chapter 21N of the General

Laws. The RECs associated with Offshore Wind Energy Generation must be delivered into the Distribution Companies' NEPOOL GIS accounts.

The Bidder will utilize the NEPOOL GIS tracking system for attribute tracking, which will allow MassDEP, in consultation with DOER, to accurately measure progress in achieving the Commonwealth's goals under Chapter 298 of the Acts of 2008 or Chapter 21N of the General Laws.

The Bidder agrees to deliver the RECs associated with offshore wind energy generation into the EDCs' NEPOOL GIS accounts.

7.9 Existing, Preliminary, or Pending Claims of Litigation

7.9 Identify any existing, preliminary or pending claims or litigation, or matters before any federal agency or any state legislature or regulatory agency that might affect the feasibility of the project or the ability to obtain or retain the required permits for the project.

There are no existing, preliminary, pending, or foreseeable claims or litigation, or adversarial matters before any Federal agency or any State legislature or regulatory agency against the Bidder, the Owners, or their affiliates that might affect the feasibility of the Project, or the ability to obtain or retain the required permits for the Project.

See Section 5.11 for further details regarding litigation.

8. ENGINEERING AND TECHNOLOGY; COMMERCIAL ACCESS TO EQUIPMENT

This section includes questions pertinent to the engineering design and project technology. This section must be completed for all aspects of a project including generation, storage (as applicable) delivery, and interconnection facilities. Bidders should provide information about the specific technology or equipment including the track record of the technology and equipment and other information as necessary to demonstrate that the technology is viable.

8.1 Preliminary Engineering Plan

8.1 Provide a reasonable preliminary engineering plan, which includes the following information:

i. Type of generation and delivery technology

8.1.1 Preliminary Engineering Plan (Proposed Design¹¹).

The Project is an offshore wind facility having a [REDACTED]

[REDACTED]

[REDACTED] The generation will be interconnected with [REDACTED] via a network [REDACTED] array cables. [REDACTED] will collect the energy output from the generation and transform the voltage level from [REDACTED] The energy will be delivered from the offshore substations via [REDACTED] to the onshore point of interconnection.

The Proposed Design for the Project (a preliminary engineering plan) can be broken down into the key components described in [REDACTED].¹²

[REDACTED]

[REDACTED]

[REDACTED]

- ii. Major equipment to be used (including nacelle, hub, blade, tower, foundation, delivery facilities structures and platforms, electrical equipment and cable)

Generation

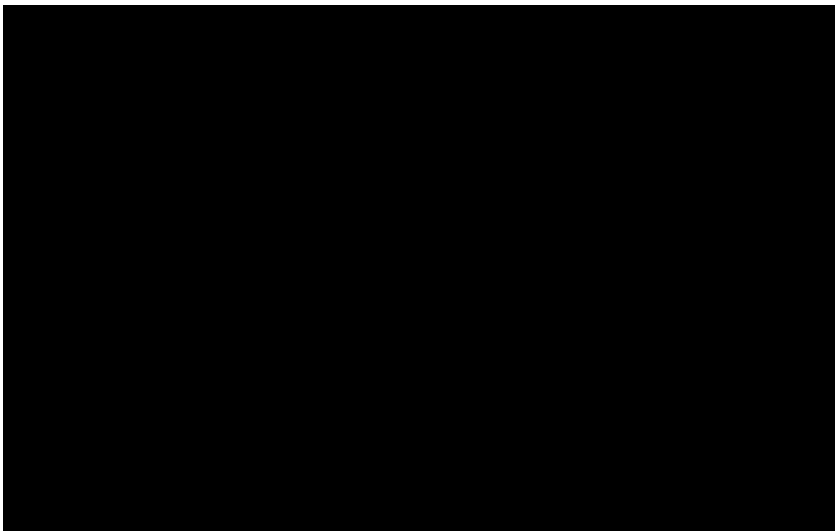
Foundations

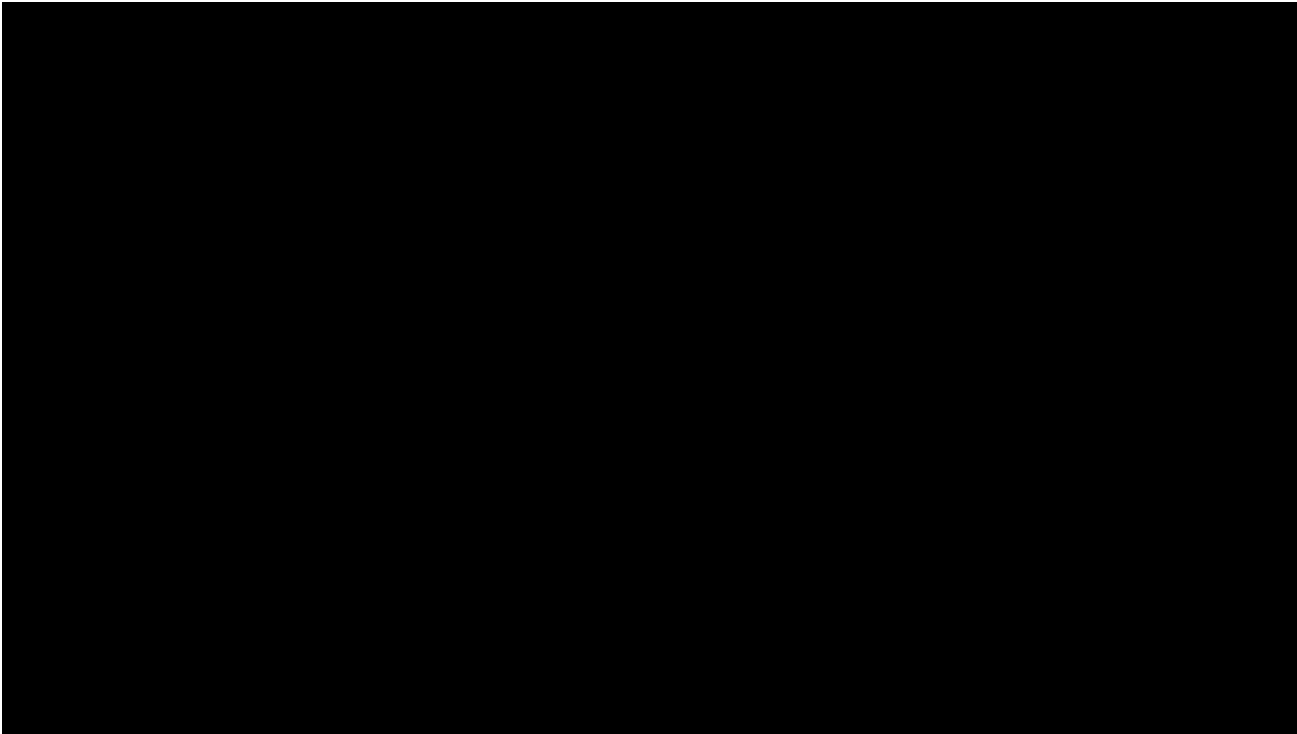
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The final foundation package selected will depend on the water depth, WTG size, and the results of detailed geotechnical investigations.

WTGs

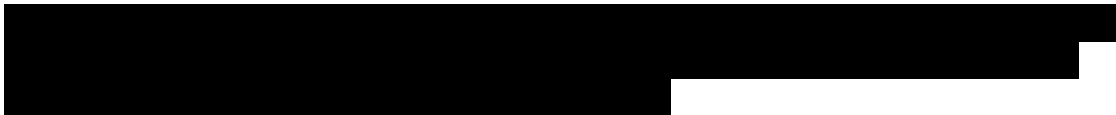





Transmission

Array Cables

The array cables connect the WTGs to the offshore substation. The WTGs are arranged in “strings,” with a number of WTGs on a single cable string, based on the power capacity of the platform connecting cables and the WTG rating.



A map showing the cable layout can be found in 

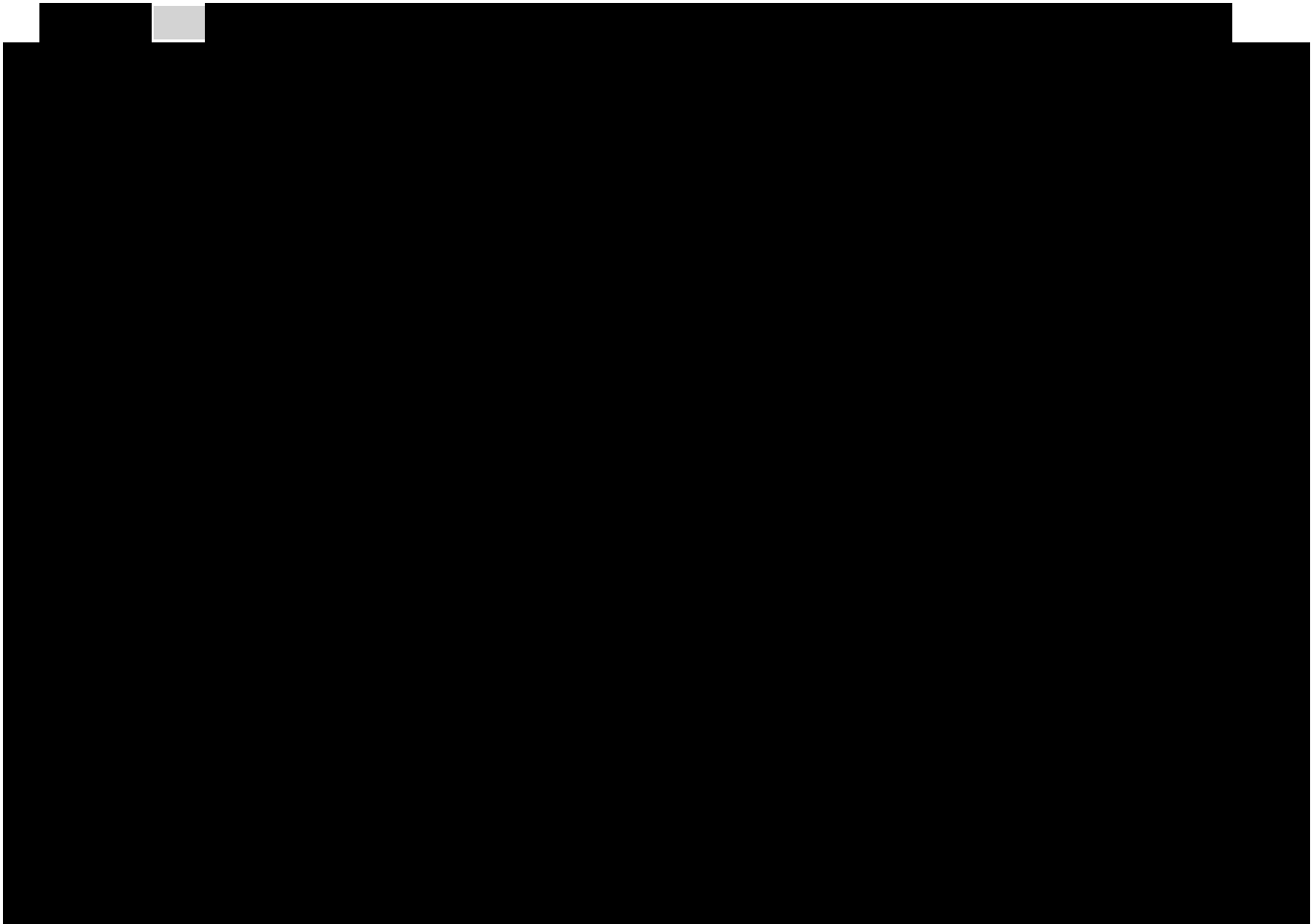


Export Cable System

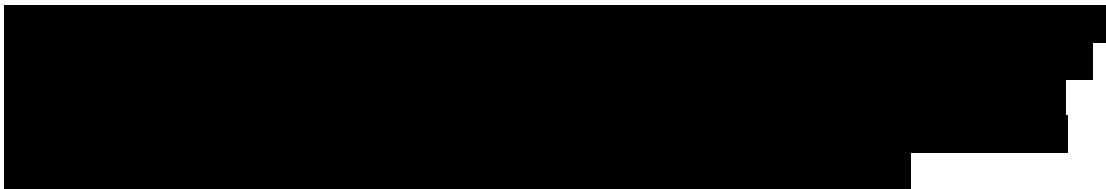
The export cable system (part of the transmission system) connects the offshore substations to the onshore substation, and ultimately delivers high voltage power to the onshore [REDACTED] [REDACTED] for entry into the ISO New England administered transmission system. The export cable system is comprised of [REDACTED] [REDACTED]

A cross-section of the armored, insulated, highly engineered [REDACTED] is shown below (Figure 8.5)

A map showing the export cable route can be found in [REDACTED]



Offshore Substation



will carry equipment for high-voltage transmission and distribution, along with other equipment such as a backup diesel generator, batteries, and panels for WTG control.

The topside structure will be equipped with a crane and boat landing for maintenance of the and WTGs. The structural system for the topside is a steel brace column system with climate shield that are non-load-carrying except for local wind load. The main braces and columns are tubulars (circular members), and members in the decks are wide flange H profiles. This type of structural system has been used on 15 of Ørsted's previous offshore substations. This method has also been used at the majority of oil and gas installation in the Gulf of Mexico and elsewhere.

The reasons for choosing the system are:

- Many fabricators from which to choose ensuring selection of a proven structural solution and competitive pricing;
- Allows for parallel fabrication as each deck can be fabricated separately;
- Robust system offering the flexibility needed to incorporate changes as design proceeds and/or if required by permits/siting agencies; and
- The cable and cellar deck (to facilitate cable pulling) will be open decks and the remaining rooms will in general be closed, climate-controlled rooms with the exception of the transformer and shunt rooms, which will be naturally ventilated via openings in the walls.

Onshore Substation

[REDACTED] The substation will be equipped with [REDACTED]. A local control center will be equipped with protective relaying and control systems, as well as local and remote control of equipment.

[REDACTED] Variable and fixed shunt reactors compensate for the export cable charging and harmonic filters. [REDACTED]

[REDACTED] are equipped with Supervisory Control and Data Acquisition (SCADA) systems. The SCADA system main task is to provide Monitoring, Control and Protection of the high voltage and medium voltage components. The secondary task is to provide interface to external systems and monitor and control the low voltage system and Auxiliary Systems. All information is presented on a Human Machine Interface (HMI flat screen presentation), allowing alarms and system events to be logged and managed.

-
- iii. Manufacturer of each of the equipment components listed above as well as the location of where each component will be manufactured.
-

[REDACTED] lists the preferred manufacturers in the Proposed Design. Attachment 8-1 provides the locations of all manufacturers.

[illegible]

Offshore Substation Suppliers

[REDACTED]

[REDACTED]

[REDACTED]

vi. Equipment vendors selected/considered

The Bidder has either designated the preferred vendor for other key elements of the Proposed Design [REDACTED] or identified a pool of qualified vendors for other components. Attachment 8-1 summarizes those vendors and lists other potential suppliers for the Project.

vii. Track record of equipment operations

All equipment in the Proposed Design (or under consideration) is proven technology, with a strong history of performance described in Table 8.5. See Section 3 for the expected operational performance of the Project.

Table 8.5 History of Equipment Operations

Item	History
Generation	
[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]
Transmission	
Array Cable	This technology has been reliably operating for decades, including in Ørsted projects.
Export Cable	The export cable technology is widely accepted in the offshore wind industry and has been used for decades (and has an even longer history in other applications).
Offshore Substation	The offshore substation consists of equipment that is operating and generally accepted in the offshore wind and other industries. Ørsted has installed similar offshore substation systems in 15 other projects.
Onshore Substation	The design of the onshore substation is consistent with similar equipment installed by transmission system owners/operators.

viii. If the equipment manufacturer has not yet been selected, identify in the equipment procurement strategy the factors under consideration for selecting the preferred equipment

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

Ørsted's in-house *Product Line* team will apply the most recent technological advances; an optimized design, supply chain, and logistical train; and safe and environmentally sound solutions and work methods to the U.S. offshore wind market.

In addition, the Bidder has hired a dedicated full-time local procurement team, with the sole role of identifying and supporting local suppliers through the tender processes and development of the supply chain; and continuing to employ a multi-contract approach to the development and construction of its offshore wind projects.

To deepen the local supply chain, the Bidder generally requests major suppliers to set forth similar requirements for their sub-supplier markets. These goals include achieving a maximum of local supply and jobs by focusing on the right opportunities for local potential suppliers; collaborating with suppliers across tiers and across markets to develop a sustainable and competitive offshore wind supply chain; and identifying, developing, and sharing (e.g. via project specific supply chain events) opportunities to increase business for Massachusetts based suppliers.

In selecting the equipment for the Project, the Bidder will focus on the supplier's or manufacturer's:

- Ability to develop the local supplier market;
- Track record and references;
- Financial rating;
- Safety and quality records; and
- Price level of their proposals.

8.2 Equipment Suppliers Under Consideration

8.2 If bidder has not yet selected major equipment for project, please provide a list of key equipment suppliers under consideration

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]

8.3 Same or Similar Equipment in Operation

8.3 Please identify the same or similar equipment by the same manufacturer that are presently in commercial operation including the number installed, installed capacity and estimated generation for the past three years.

The Bidder's strategy for mitigating technology risk is to use proven technology.

The critical equipment components for the Project are either the same or are based on earlier versions that have been manufactured and operated with success on various large-scale offshore wind farms by Ørsted as well as the general offshore wind industry. As such, all equipment used in this Project has a history of proven and reliable operation and poses no practical technological risk.

Ørsted or Eversource have installed, operated and maintained equipment from the majority of the manufacturers referenced in the table provided in Attachment 8-1. Table 8.7 identifies similar equipment in use by Ørsted from the same manufacturers.

Specifically, regarding the WTG, [REDACTED]

The status of the technology has no bearing on the financial plan of the Project.

8.5 Full and Complete List of Equipment Needed

8.5 Please indicate if the bidder has a full and complete list of equipment needed for all physical aspects of the bid, including generation facilities, turbine support structures, electrical platforms, delivery facilities, and mandatory and voluntary transmission system upgrades. If not, identify the areas of uncertainty and when the full and complete list of equipment will be identified.

A full list of equipment (components and major sub-components) needed is shown in Attachment 8-3.

8.6 Equipment Procurement

8.6 Please indicate if the bidder has secured its equipment for all physical aspects of the bid, including generation facilities, delivery facilities, and mandatory and voluntary transmission system upgrades. If not, identify the long-lead equipment and describe the timing for securing this equipment.

As described in Sections 8.1.2 and 8.2, the Bidder has initiated detailed dialogues with equipment suppliers. [REDACTED]

[illegible]

The long lead equipment and services required for the Project include:

[REDACTED]

See Section 14 for more information regarding the economic benefits

See Section 14 for more information regarding the economic benefits associated with the Project.

9. PROJECT SCHEDULE

A bidder must demonstrate that its proposal can be developed, financed, and constructed and be technically viable within a commercially reasonable timeframe. The bidder is required to provide sufficient information and documentation that shows that the bidder's resources, process and schedule are adequate for the acquisition of all rights, permits and approvals for all aspects of the project and for the financing of the project consistent with the proposed project milestone dates.

Bidders are required to provide a complete critical path schedule for the project from the notice of selection of the project for contract consideration to the start of commercial operations. For each project element, list the start and end date.

The Bidder will achieve commercial operation for the Project by [REDACTED]

The schedule for the development and construction of the Project is commercially reasonable and achievable. It is supported by Ørsted's history with planning and executing multiple large-scale offshore wind projects globally and the Bidder's knowledge of the local regulatory framework and supply chain dynamics. The Bidder's ability to execute the Project is supported by Ørsted's track record of having 25 offshore wind farms successfully developed, constructed and in operation in the US, Europe and Taiwan, and an additional 4 wind farms under construction. Technical design and constructability are retained in-house and are based on almost three decades of experience with engineering, procuring, and constructing offshore wind farms and complex onshore/offshore transmission systems.

Below are highlights of the Bidder's expertise in planning and demonstrates its ability to execute the Project in a commercially reasonable timeframe.

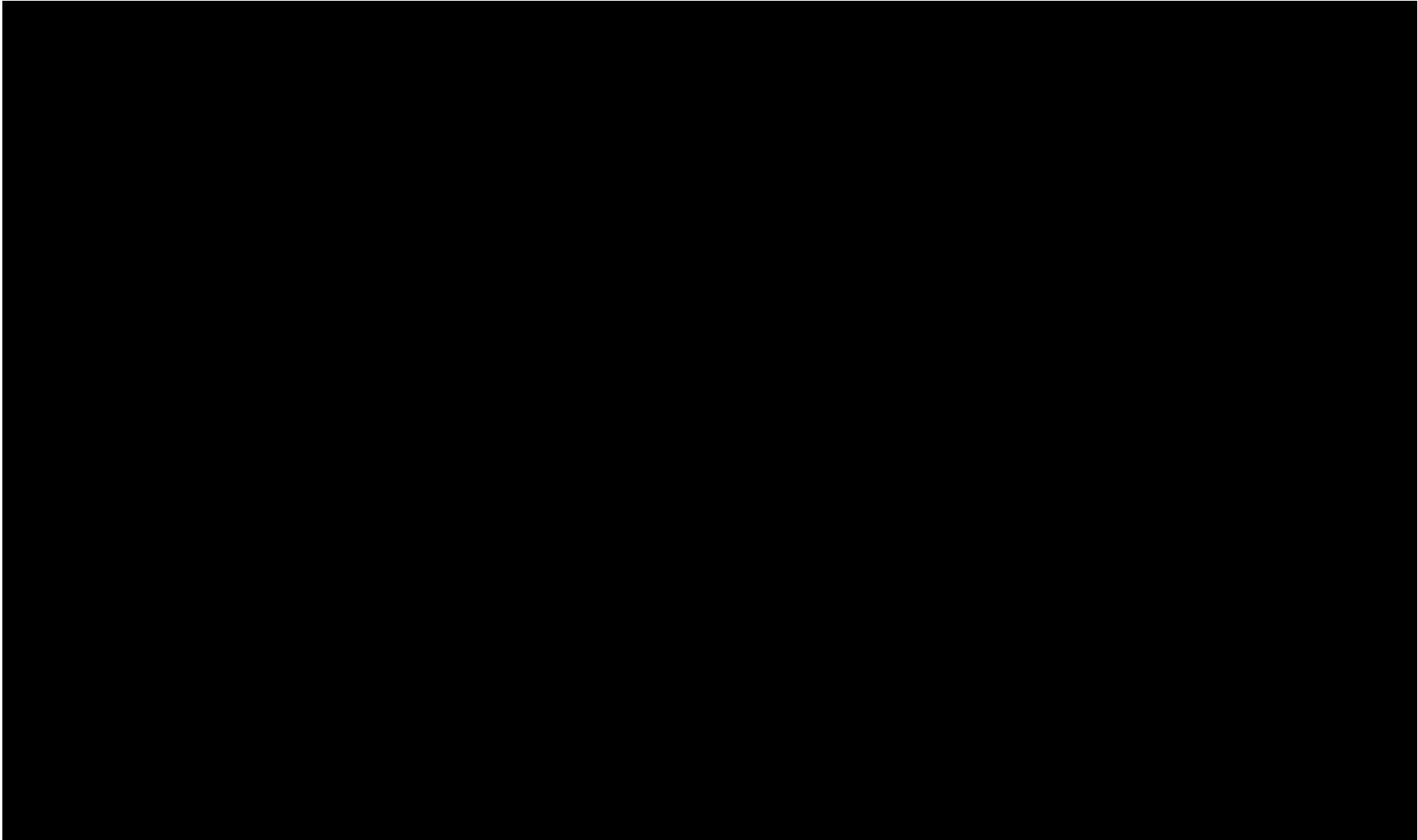
Some of the tools developed by Ørsted based on lessons learned from its previous projects, include:

- **Installation campaign reporting tool.** Through an offshore reporting tool installed on all construction vessels and managed by Ørsted's representatives, Ørsted captures all installation statistics including construction status, installation activity durations, and weather downtime. This data is benchmarked against the anticipated durations for the campaign. The activities and durations are saved within an accessible database system that enables future projects like this one to easily and more precisely estimate the duration of future construction campaigns.
- **Weather prediction tool.** Ørsted has developed measures to model the durations of offshore construction campaigns and weather downtime by inputting and evaluating known durations of the previous offshore activities in concert with a 37-year-record weather file. A Monte Carlo analysis then provides a P20, P50 and P80 duration for the installation campaign.
- **Schedule visualization tool.** Ørsted uses a tool that visualizes the Project schedule by means of a simulation encompassing the entire offshore campaign. The tool is used to standardize the communication of the complex and detailed installation schedule in a way that is transparent and accessible to all subject matter experts involved on the project. The result is a schedule that has been communicated and scrutinized extensively, which leads to increased schedule robustness and alignment.

9.1 Schedule and Critical Path

- 9.1 Identify the elements on the critical path. The schedule should include, at a minimum, preliminary engineering, financing, acquisition of real property rights, Federal, state and/or local permits, licenses, environmental assessments and/or environmental impact statements (including anticipated permit submittal and approval dates), completion of interconnection studies and approvals, procurement, facility contracts, start of construction, construction schedule, and any other requirements that could influence the project schedule and the commercial operation date.
-

The critical path schedule for the Project is detailed in [REDACTED] below. For a higher resolution critical path schedule, see [REDACTED]



9.2 Maritime Vessels and Laydown Facilities

9.2 Include a discussion on use of maritime vessels and access to them. Also include a description and discussion of the laydown facility/facilities to be used for construction, assembly, staging, storage, and deployment.

9.2.1 Maritime Vessels

The following sections describe the use of maritime vessels in the context of the Project schedule with regard to geoscience investigations; foundation, WTG and cable installation; and O&M.

See Section 10.3.7 (including Table 10.2) for a description of the vessels needed for the Project and access to those vessels, primarily in the context of compliance with the Jones Act.

Geoscience Investigations

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Cable Installation



Operation and Maintenance



9.2.2 Laydown Facilities

Section 10.2 contains a comprehensive description and discussion of the laydown facilities to be used for construction, assembly, staging, storage, and deployment for the following offshore installation work scopes of the Project:

- WTG staging and pre-assembly,
- foundation staging,
- cables, and
- construction base.



[Redacted] See Section 11.2 for information regarding the Bidder's plan to establish an O&M base serving the Project.

9.3 Status of all Critical Path Items

9.3 Detail the status of all critical path items, such as receipt of all necessary siting, environmental, and ISO-NE approvals.

The status of these critical path items is provided in Table 9.2.

[illegible]

10. CONSTRUCTION AND LOGISTICS

This section of the proposal addresses necessary arrangements and processes for outfitting, assembly, storage and deployment of major project components such as turbine nacelles, blades, towers, foundations, and delivery facilities support structures and other major components associated with delivery facilities, and the storage facility (as applicable). Please provide a construction plan that captures the following objectives:

The Bidder offers its deep well of experience in executing large-scale, offshore wind projects around the world. Indeed, the Bidder is the only company with actual experience in constructing and commissioning an offshore wind farm in the U.S., and will have constructed, interconnected, and commissioned several additional U.S. offshore wind farms by the time the Project is commissioned.

Through Ørsted's unique multi-contracting approach that breaks major work packages into more discrete tasks, and the greater deployment of its own human resources, the Bidder will retain control over the outfitting, assembly, deployment, and commissioning processes to a greater degree than any other developer in the business. This enhanced control covers not only the procurement phase and the division of work scopes into more narrow delivery packages, but also characterizes the construction phase.

The construction setup has evolved over years of collaboration with key suppliers and contractors. The Ørsted approach to collaboration is typically that of a long-standing relationship, where procedures, vessels, and tools are optimized from project to project to achieve those construction efficiencies for which Ørsted is known.

10.1 Major Tasks Associated with Deployment of Proposed Project

10.1 Please list the major tasks or steps associated with deployment of the proposed project and the necessary specialized equipment (e.g. vessels, cranes).

As set out below there are several major tasks associated with the construction and deployment of the Project. During the installation phase, daily progress will be recorded in corporate systems, which gives unique comparative data in helping to internally benchmark how much time each installation task should take and under all weather conditions. These major tasks, the specifics of which are discussed in greater detail in Section 10.3, include:

- foundations;
- WTGs;
- electrical – array cables;
- electrical – export cables;
- offshore substations; and
- onshore substation and interconnections.

Each of the major packages listed will typically have its own installation contract with a specialized contractor (or contractors), where each offshore package will require vessels (specialized equipment) as described in Table 10.2. The WTGs will be installed by the supplier, using the supplier's specialized heavy lifting equipment (see Section 10.3.2) and product specific procedures.

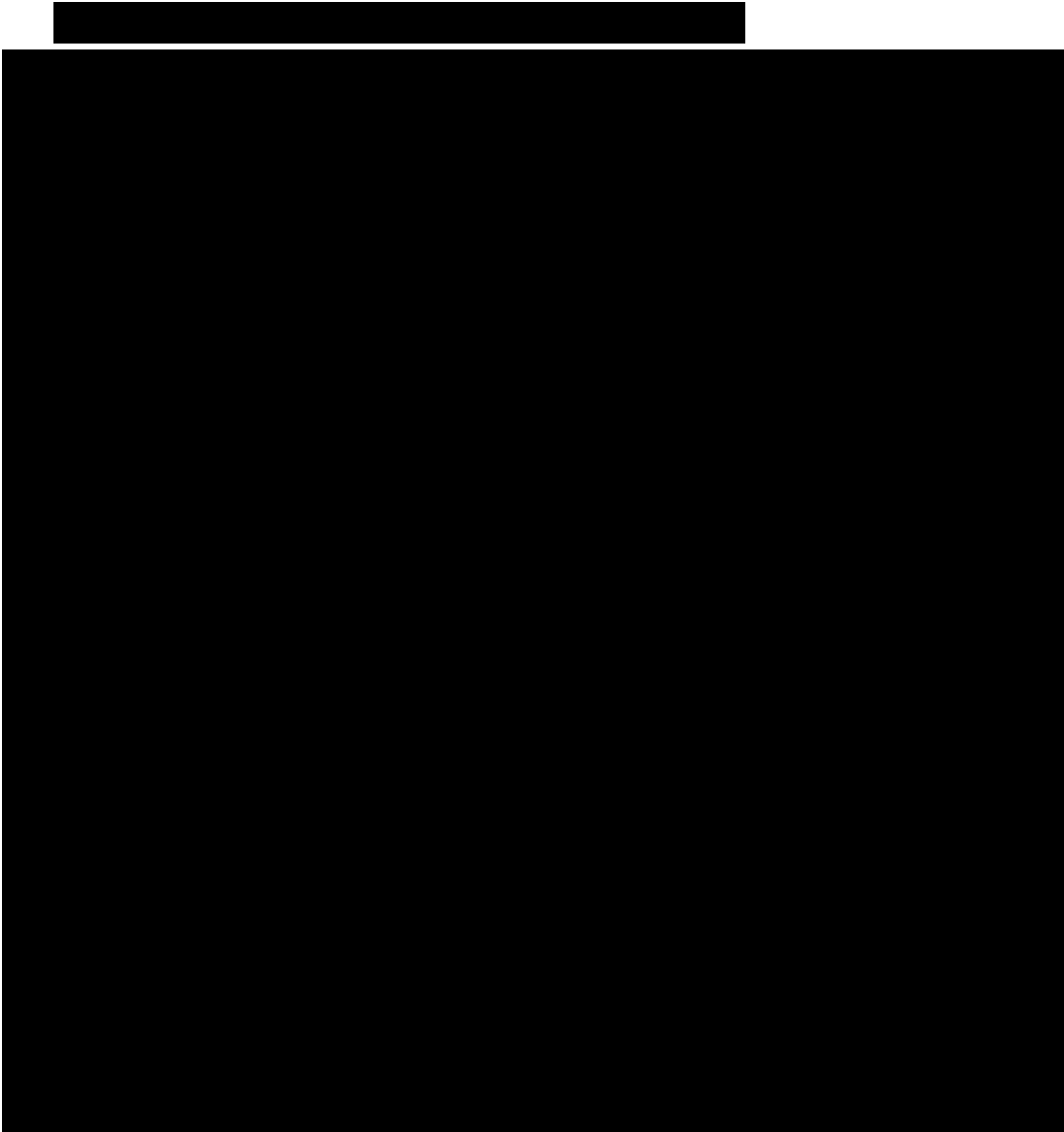
The overall coordination and management of the offshore construction work will be carried out under the Ørsted EPC Director, with dedicated construction site staffing. This approach gives the in-house EPC organization full control of the installation campaign, maintaining quality and schedule goals.

10.2 Documentation of Site Control for Marine Terminals and Other Waterfront Facilities

10.2 Please provide documentation to demonstrate site control for all marine terminals and other waterfront facilities that will be used to stage, assemble, and deploy the project for each stage of construction.

- i. Evidence that the bidder or the equipment/service provider have a valid lease, or option to lease, a marine terminal and/or waterfront facility for construction of the offshore wind energy project (e.g., by virtue of ownership or land development rights obtained from the owner).

An overview of the Project's use of marine terminals and other waterfront facilities with respect to each scope of construction is summarized in Table 10.1 and described in greater detail below. Figure 10.1 is a graphic depiction of these locations.



- ii. If not available, describe the status of acquisition of real property rights for necessary marine terminal and/or waterfront facilities, any options in place for the exercise of these rights and describe the plan for securing the necessary real property rights, including the proposed timeline. Include these plans and the timeline in the overall project schedule.

WTG Staging and Pre-assembly

The specific Project scope covering the installation of the WTG components consists of the marine facilities that would support the staging, pre-assembly and load out of the nacelle units, tower sections and the blades.



Foundation Staging

[REDACTED]

[REDACTED]

[REDACTED]

Cables

The specific Project scope covering the U.S.-based installation of cables consists of the marine facilities that would support the staging, preparation and load out of the sub-sea array (in-field) and export cables.

[REDACTED]

Construction Base

The specific Project scope covering the construction base during the offshore installation phase consists of both the marine facilities that would support the berthing and sheltering (including mooring arrangements) of Crew Transfer Vessels (CTVs) as well as the onshore office and warehouse facilities required to house the site personnel, offshore technicians and the tools and equipment to support the offshore installation activities.

[REDACTED]

-
- iii. Identify any joint use of existing or proposed real property rights for marine terminal or waterfront facilities.
-

[REDACTED]

10.3 Proposed Approach for Staging and Deployment of Major Project Components

-
- 10.3 10.3 Please describe the proposed approach for staging and deployment of major project components to the project site. Indicate the number, type and size of vessels that will be used, and their respective roles. Please include specific information on how the bidder's deployment strategy will conform to requirements of the Merchant Marine Act of 1920 (the Jones Act).
-

The development and construction plan for the Project breaks the proposed approach for staging and deployment to the Project site into the following major six components:

- foundations;
- WTGs;
- electrical – array cables;
- electrical – export cables;
- offshore substations; and
- onshore substation and interconnections.

Section 10.3.7 describes the number, type and size of vessels that will be used and their respective roles in the staging and deployment plan. The proposed design, methods, and equipment are typical solutions which the Bidder is continuously improving, hence actual execution set-up may differ.

[REDACTED]

10.3.1 Foundations

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

At the installation position, an installation vessel (Jack-up/dynamic positioning [DP2]) will be waiting for the feeder barge. The barge will be boarded alongside the installation vessel. The crane from the installation vessel will bring the foundation on the deck of the installation vessel. The feeder barge will return to [REDACTED] to pick up the next foundation. The installation vessel will install the foundation. After each installation the jack-up vessel will jack down and move to the next position to repeat the next foundation installation. The jack

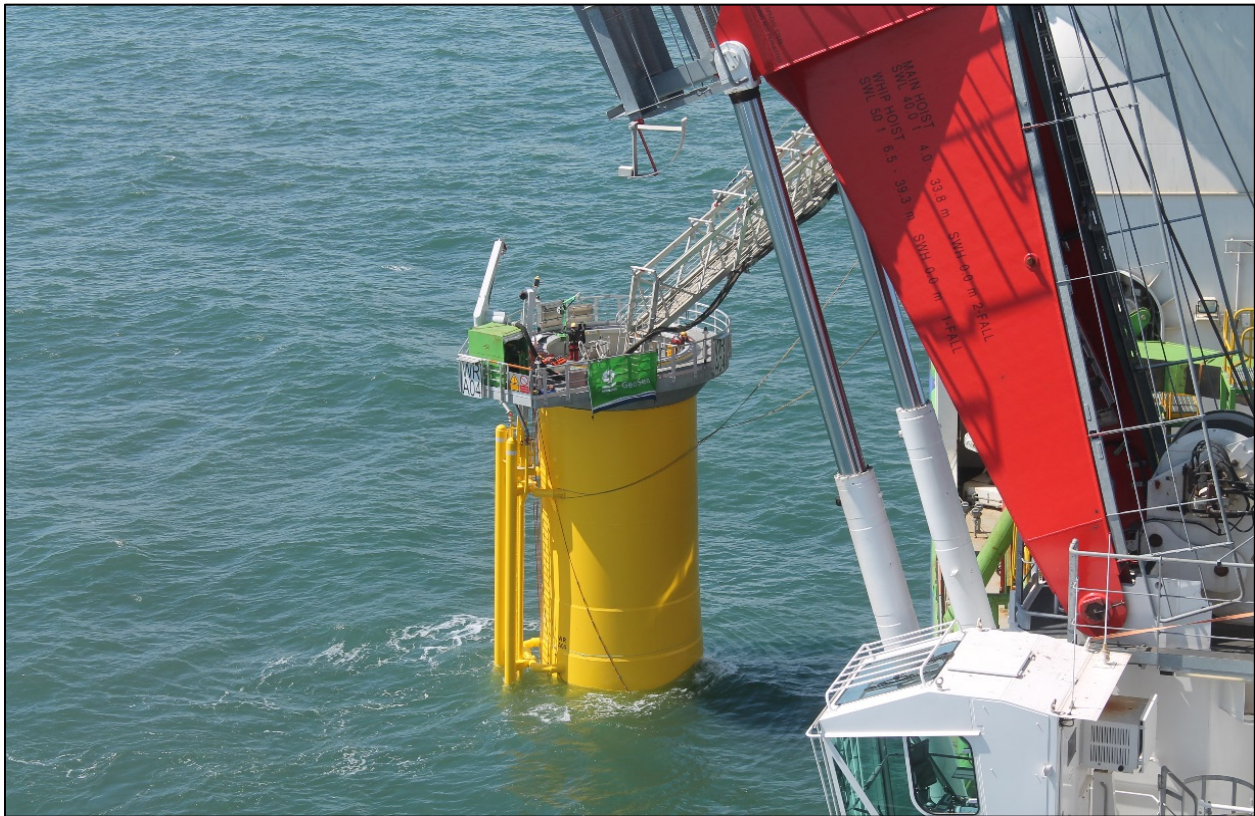
up vessel will not transport any materials. When each foundation installation is finished a tent or similar cover will be put on top of the foundation to protect the structure and electrical components inside.

Figures 10-2 and 10-3 show the transportation and installation of a typical monopile and transition piece.

Figure 10.2 Transportation and Installation of a Monopile (Westermost Rough, 2014)



Figure 10.3 Installation of a Transition Piece (Westermost Rough, 2014)



10.3.2 WTG

WTG installation will be staged out of the WTG pre-assembly harbor (see [REDACTED]).



WTG Pre Assembly

The WTG components will be pre-assembled and prepared for load out at the WTG pre-assembly harbor ([REDACTED]). The load out harbor also functions as the storage buffer for WTG components, ensuring a constant supply to the installation vessel, which is supplied WTG components by feeder barges. The pre-assembly and storage activities in the harbor requires skilled workers and heavy lifting equipment such as crawler cranes to move the various components around.

The main and most resource demanding pre-assembly activity is tower assembly and outfitting. Incoming tower sections are inspected for overseas transport damage, and temporarily stored by means of purpose-built heavy-duty tower lift-trucks.

When assembling the complete tower structure, the bottom tower section is upended from horizontal to vertical and bolted into a temporary tower stacking foundation near the quayside (Figure 10.4). Thereafter, middle section(s) are stacked and bolted on top, the service-lift is installed inside the complete structure, and multiple electrical connections are run for HV cable, communication, DAVIT crane and nautical marking components.

Certification work is carried out on certified structural elements and components. Pre-commissioning work prior to load out includes applying ID markings and a quality control walk-down with the owner's representative (Figure 10.5 and Figure 10.6).

Figure 10.4 Upending of Tower Section in Load Out Port (Gode Wind, 2015)



Figure 10.5 Towers Assembled and Ready at the Load Out Port (Gode Wind, 2015)



Figure 10.6 Towers Assembled and Ready for Load Out (Gode Wind, 2015)



Nacelles are unloaded at the pre-assembly harbor by means of multi wheelers or a harbor crane. A thorough inspection for overseas transport damage is conducted, and pre-assembly consists of mounting the heli-hoist (basket), cooling unit with wind measurement instruments, and aviation marking components. If a nacelle is stored for a longer period, it needs to be conditioned by means of dehumidification and rotating of the entire drive train (e.g. generator). Prior to getting ready for load out, each nacelle assembly is pre-commissioned, ID-markings applied, and a quality control walk-down with the owner's representative conducted (Figure 10.7).

Figure 10.7 Nacelles Pre-assembled and Ready at the Load Out Port (Gode Wind, 2015)



WTG blades are stored at the pre-assembly site as well, transported via harbor crane and trucks with special trailers. Little pre-assembly or inspection is required (Figure 10.8).

Figure 10.8 Blades Ready at the Load Out Port (Gode Wind, 2015)

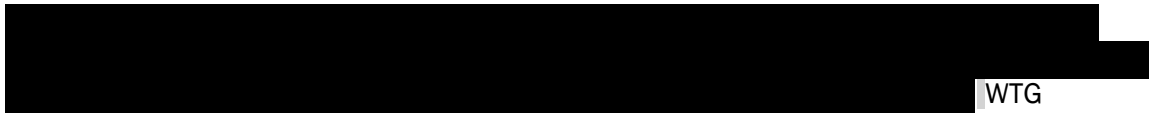


Through its collaboration with a terminal operator, the Project will have access to the highly skilled and appropriately licensed workforce supporting blade load out including:

- Site management (e.g. Site Manager, Supervisor(s), Planner, HSE, Secretary);
- Crane drivers;
- Multi wheeler and heavy lifting truck drivers;
- Other logistics vehicle site drivers;
- High voltage electricians;
- Low voltage and communication electricians;

- Mechanical fitters; and
- Dock workers.

WTG Installation



WTG

components will be fastened onto the deck of a feeder barge, which is either moored to the quayside or, in the case of a jack-up feeder barges, jacked up along the quayside, using specially-designed sea fastenings. Once fully loaded up to two WTGs sets can be stored on board for transport (Figure 10.9). The feeder barge could be self-propelled, moved by seagoing tugs or a jack-up type.

Figure 10.9 Loading Towers onto Installation Vessel (Gode Wind, 2015)



Once the feeder barge arrives on site, it will be positioned next to the installation vessel. Depending on the type of feeder barge used, it may jack-up alongside the installation vessel, moor against the installation vessel, dock into the installation vessel, or be kept in place by use of pre-installed anchors. The installation vessel installs the WTG either directly onto the foundation, or it will offload the barge and place the components on its deck, so the barge can be released for the next load-out. Installation for each WTG is typically performed in five lifts; tower, nacelle, and three blades. This method of installing full towers and single blades

from a dedicated installation vessel has proven to be an efficient and safe way to install WTGs offshore (Figure 10.10).

Figure 10.10 WTG Installation Vessel and feeder jack-up barge at Work - Installation of a WTG Blade (Block Island, 2016)



WTG Commissioning

After installation, the WTG is connected to the electric grid and commissioned. The commissioning harbor will be located in close proximity to the offshore windfarm and [REDACTED]; however, commissioning would likely be completed by technicians hosted by either a CTV and/or DP2, Service and Operation Vessel (SOV) with an integral “walk to work” access system (Figure 10.11). Both SOV and DP2 vessels use a gangway system to transfer commissioning technicians to the WTGs and acts as a hotel vessel at the same time. CTVs push onto the boat landing on the foundations to allow technicians to access the WTG.

WTGs typically begin producing power 1 to 4 days after installation has been completed.

Figure 10.11 DP2 Vessel and CTV (Gode Wind 01+02, 2015)



10.3.3 Electrical – Array Cable

Prior to cable installation, support works may be required such as boulder clearance, Precision Lightweight GPS Receiver, and messenger wire installation. [REDACTED]

After loading the cables (continuous length or individual lengths), the cable will transit to site and commence surface lay of the cables. [REDACTED]

[REDACTED] A DP2 vessel will post lay burial the cables by a jet plow, mechanical plowing, mechanical cutters, controlled flow excavation or trailing suction hopper dredger. Site characterization investigations and surveys are nearing completion and from the results, the most suitable burial methodology can be selected. It appears that sand (loose, becoming very dense) is the predominant feature with some harder formations, in addition to boulders.

Cable crossings may require special measures such as rock placement; mattresses; and/or propriety separation devices.

Repeated surveys are required to ensure correct installation such as pre-lay, post lay and depth of burial. Other vessel will assist the progress transferring personnel and equipment to the offshore structures. After installation of the Cable Protection System, the cables are pulled up the offshore structures where they are secured, tested and terminated.

10.3.4 Electrical – Export Cable

Prior to cable installation support works may be required such as boulder clearance, a pre-lay grapnel run, and messenger wire installation. [REDACTED]

[REDACTED]

The export cable is loaded and laid in sections due to the system length and cargo capacity (weight and volume) restrictions. Adjacent cable sections will be joined together offshore once laid.

A DP2 vessel is expected to load and lay the cables simultaneously via a plowed solution. However, until the full survey is processed, a second DP2 vessel could post lay bury the cables by: jet plow, mechanical plowing, mechanical cutters, controlled flow excavation or a trailing suction hopper dredger.

Cable crossings may require special measures such as rock placement; mattresses; and/or propriety separation devices.

Repeated surveys are required to ensure correct installation such as pre-lay, post lay and depth of burial. Other vessels will assist the progress transferring personnel and equipment to the offshore structures. After installation of the Cable Protection System, the cables are pulled up the offshore substation where they are secured, tested and terminated.

10.3.5 Offshore Substation

Offshore Substation Fabrication and Installation

The offshore substation components will be fabricated in selected fabrication yards, transported to the site, and installed.

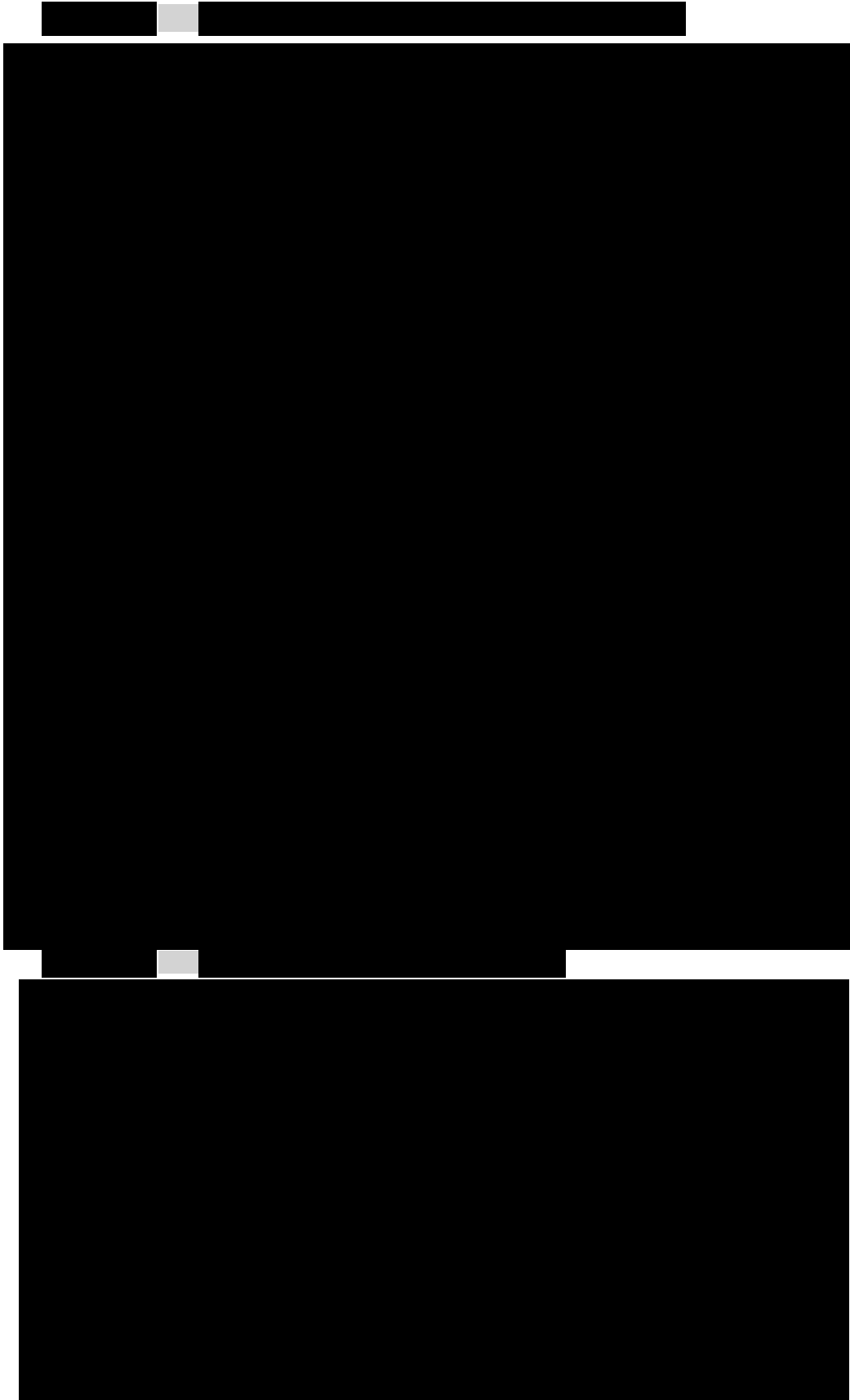
[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]



Topside Installation

Offshore Substation Commissioning

All electrical equipment on the offshore substation needs to be commissioned for quality, safety and functionality of each individual system and well as the integrated substation. The phases of commissioning are:

Factory Acceptance Tests (FATs)

Factory Acceptance Tests are carried out to confirm that the equipment under test has been manufactured in accordance with the approved design. These tests provide the supplier with the opportunity to identify any design or build quality issues in advance of the equipment being delivered to site. All issues identified should, where possible, be rectified by the supplier prior to shipment.

Site Acceptance Test (SATs)

During the Site Acceptance Test, the equipment suppliers commissioning engineer conducts testing of the components supplied (as stand-alone systems) under the Project scope testing the conformance of the delivered solution to the approved design and functional specifications. This process also confirms the integrity of the installation and the absence of any transit damage.

Site Integration Test (SITs)

The Site Integration Test involves the overall testing of the complete offshore substation. The system(s) under test may be composed of hardware, software, or hardware with embedded software. The Site Integration Test is a process of verifying that the substation meets its requirements and performs in accordance with the design and the Bidder's expectations.

First Energization of HV equipment and On Load Tests

Following the completion of the FATs, SATs and SITs, and providing all the associated documentation has been completed and a pre-energization inspection carried out, the equipment can be considered ready for energization. At this stage, the system is handed over to the Senior Authorized Person who will carry out the actual energization of the HV system.

10.3.6 Onshore Substation

Installation of all the major equipment for the onshore substation, including installation of onshore cables/interconnections will be conducted by approved and qualified contractors relying on local labor and project labor agreements to the extent practicable.

Export cables will make landfall in the vicinity of the onshore substation and transition to an underground cable configuration at joint transition vault near the shoreline. [REDACTED]

[REDACTED]

[REDACTED]

Onshore substation equipment will be installed upon completion of concrete foundations and cable duct banks. The equipment manufacturers will be responsible for transportation, rigging, and placing the equipment on the concrete foundations. The rigging company, who acts as a subcontractor to the equipment manufacturer is responsible for all logistical services (e.g., engineered rigging and hauling plans, routing, permitting, clearance checking, escort, police escort, load analysis of transport, and dimensional restrictions). When required, the rigging company is also responsible for temporary local warehouse storage of equipment and components. Upon installation of the equipment on the foundations, the rigging company is responsible for checking alignment, anchoring, and proper temporary protection from weather.

Upon placing the equipment, the manufacturers are required to complete attachments of all components associated with each equipment piece. When required, as part of final deployment the equipment will be filled with an insulating fluid and/or insulating gas.

Onshore Substation Commissioning

All equipment [REDACTED] will be tested as soon as it is installed, and control and protection equipment are available. Testing will be performed by competent and licensed contractors working in accordance with the test methodologies and plan reviewed and verified by qualified engineers. All tests will be documented by prescribed test reports and accepted by the Bidder. The commissioning will be performed in strict adherence to ISO-NE's protocol on receiving permits and clearances.

[REDACTED] and Medium Voltage breakers: Upon the installation of all breakers and control panels, each breaker will be acceptance tested. The acceptance testing will include operability of the breakers, functional testing of control and protection schemes, alarms and indications, as well as remote control (SCADA) operability.

Control Center: The control center will be acceptance tested at the manufacturer's facility. Upon the installation at the site, each control and protection scheme will be tested and commissioned along with other equipment.

[REDACTED]

Step-Up Transformers: Upon the installation of the step-up transformers, they will be acceptance tested and commissioned.

Commissioning of the Onshore Station:

[REDACTED]
[REDACTED] The duration of the final commissioning will be approximately four weeks.

10.3.7 Vessels

A summary table identifying the number, type and size of vessels that will be used and their respective roles is provided in [REDACTED]
[REDACTED]

[illegible]

Project Overview		Key Milestones	
Project Name	Project Alpha	Phase 1	Phase 2
Start Date	2023-01-01	2023-01-15	2023-02-01
End Date	2023-03-31	2023-03-15	2023-04-01
Manager	John Doe	John Doe	John Doe
Status	In Progress	Completed	Completed
Budget	\$100,000	\$50,000	\$50,000
Actual Cost	\$80,000	\$45,000	\$45,000
Variance	\$20,000	\$5,000	\$5,000
ROI	20%	20%	20%
Risk Level	Low	Low	Low
Team Lead	John Doe	John Doe	John Doe
Team Size	10	10	10
Team Composition	5 Dev, 3 QA, 2 PM, 2 BA	5 Dev, 3 QA, 2 PM, 2 BA	5 Dev, 3 QA, 2 PM, 2 BA
Team Performance	Good	Good	Good
Team Feedback	Positive	Positive	Positive
Team Satisfaction	High	High	High
Team Retention	90%	90%	90%
Team Turnover	10%	10%	10%
Team Training	100%	100%	100%
Team Development	100%	100%	100%
Team Communication	100%	100%	100%
Team Collaboration	100%	100%	100%
Team Productivity	100%	100%	100%
Team Quality	100%	100%	100%
Team Efficiency	100%	100%	100%
Team Effectiveness	100%	100%	100%
Team Impact	100%	100%	100%
Team Contribution	100%	100%	100%
Team Value	100%	100%	100%
Team Success	100%	100%	100%
Team Achievement	100%	100%	100%
Team Recognition	100%	100%	100%
Team Reward	100%	100%	100%
Team Incentive	100%	100%	100%
Team Motivation	100%	100%	100%
Team Engagement	100%	100%	100%
Team Commitment	100%	100%	100%
Team Loyalty	100%	100%	100%
Team Dedication	100%	100%	100%
Team Passion	100%	100%	100%
Team Enthusiasm	100%	100%	100%
Team Energy	100%	100%	100%
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Team Actions	100%	100%	100%
Team Results	100%	100%	100%
Team Outcomes	100%	100%	100%
Team Impacts	100%	100%	100%
Team Contributions	100%	100%	100%
Team Values	100%	100%	100%
Team Beliefs	100%	100%	100%
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Team Actions	100%	100%	100%
Team Results	100%	100%	100%
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Team Contributions	100%	100%	100%
Team Values	100%	100%	100%
Team Beliefs	100%	100%	100%
Team Attitudes	100%	100%	100%
Team Behaviors	100%	100%	100%
Team Actions	100%	100%	100%
Team Results	100%	100%	100%
Team Outcomes	100%	100%	100%
Team Impacts	100%	100%	100%
Team Contributions	100%	100%	100%
Team Values	100%	100%	100%
Team Beliefs	100%	100%	100%
Team Attitudes	100%	100%	100%
Team Behaviors	100%	100%	100%
Team Actions	100%	100%	100%
Team Results	100%	100	

[REDACTED]			[REDACTED]	
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
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[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	

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[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	
[REDACTED]			[REDACTED]	

[illegible]

10.4 Party Responsible for Each Deployment Activity

10.4 List the party (e.g. the bidder, or equipment/service providers under contract to the bidder) responsible for each deployment activity and describe the role of each party. Describe the status of bidder's contractual agreements with third-party equipment/service providers.

The Bidder's approach to the sourcing and supply of the components and skills required for construction and operation of the generation asset and offshore transmission asset of the Project is expected to be managed through a multi-contracting approach with the main packages and contractors described in Table 10.4. This is in contrast to a turnkey approach with only one contract for both supply and installation of the major scopes. The multi-contracting approach combined with Ørsted's in-house engineering capabilities allows for full EPC control.

The Bidder's organization has a procurement team dedicated to broadening the supply chain by identifying, pre-qualifying and developing new suppliers, particularly within new markets to meet local content expectations, and manages the supply chain as a portfolio across the current and future portfolio of wind farms when procuring components for new wind farms.

Within the offshore wind industry, several of the suppliers have a portfolio of different products combined with a production capacity that enables them to both supply a range of different components used in the wind farm, such as cables and HV components, and supply to multiple wind farms.

Although competition is maintained by making sure alternative suppliers are available, the Ørsted organization primarily works with selected, strategic suppliers in order to develop more cost-efficient concepts and products that can be used in tomorrow's wind farms. The close interaction with the service-suppliers and manufacturers and the sharing of knowledge between the experts are a key success factor in developing more efficient manufacturing, installation methods, and technology.

An explanation of the responsibility split between contracts and the status of contracting the major scopes is provided in Table 10.4. Additional information about the procurement process is provided in Section 8.6. See also Section 10.3.7 for a description of negotiations and discussions regarding installation vessels for foundation, WTG, and cable deployment.

Table 10.4 Deployment Activity Responsible Parties

Deployment Activity	Responsible Party	Status of Procurement
Foundations	The foundations supplier will deliver [REDACTED] at the quayside (see Table 10.1) in order for the installation contractor to be able to transport to site.	[REDACTED]
WTG	The WTG supplier will transport, pre-assemble, install, and commission WTG components. The Bidder will contract the installation vessel and free issue this vessel to the WTG supplier for the installation.	[REDACTED]
Array cables	The array cable supplier will manufacture and deliver the array cables at the designated harbor and the array cable. Installation contractor will take over the cables there, then transport, install and connect the cables.	[REDACTED]
Export cable	The export cable manufacturer will deliver the export cable to the designated site which can be a harbor or the offshore Project site where the installation contractor will take over the cable and install it and terminate it at shore.	[REDACTED]
Offshore substation	[REDACTED]	[REDACTED]
Onshore Substation	Typically, the rigging companies hired by the manufacturers are primarily responsible for staging and deployment activities. When required, the manufacturers hire local experienced contractors for specialized services.	[REDACTED]

11. OPERATION AND MAINTENANCE

Projects that can demonstrate that the operation and maintenance (“O&M”) plan, level of funding, and mechanism for funding will ensure reliable operations of all aspects of the project during the term of the contract are preferred.

With more than two decades of operational experience and 5.6 GW of installed capacity at 25 offshore wind farms around the world, the Bidder's organization has an unparalleled track-record in constructing and operating offshore wind farms. This experience allows our organization to frequently secure industry leading availability for its facilities. Greater availability increases the energy produced by our facilities and the quantity of renewable energy delivered to customers, which is reflected in the production figures in the CPPD form and will flow through to Massachusetts customers.

[REDACTED]

■ [REDACTED]

■ [REDACTED]

[REDACTED]

[REDACTED]

11.1 O&M Plan for the Project

11.1.1 Provide an O&M plan for the project that demonstrates the long term operational viability of the proposed project. The plan should include the location of the O&M base, a discussion of the staffing levels proposed for the project, the expected role of the project sponsor or turbine manufacturer/outside contractor, scheduling of major maintenance activity, and the plan for testing equipment.

The Bidder has developed a preliminary O&M plan [REDACTED] based on industry best practice and Ørsted's extensive experience with offshore wind O&M. The plan will be refined during the Facility Design Report/Facility Installation Report review process with BOEM. Ørsted will also continually improve the O&M plan to account for best practices across its operations and the offshore wind industry.

[REDACTED]

11.1.1 Operating and Maintaining an Offshore Wind Farm

Ørsted has made working in the harsh offshore environment relatively routine through the institution of a rigorous tried and tested operation and maintenance program that is continuously improved over time to benefit from lessons-learned. More details can be found in the O&M plan [REDACTED]. Modeled on the successful track record of Ørsted, the offshore portion of the Bidder's O&M plan relies on and benefits from an organization articulated in three elements:

- [REDACTED]
- [REDACTED]
- [REDACTED]

Section 2.1.1 of the O&M Plan [REDACTED] includes the team structure for the onsite staff.

11.1.2 Location of the O&M Base

[REDACTED]

11.1.3 Onshore Transmission Assets

Eversource has extensive long-term experience in maintaining and servicing utility substations and transmission lines, both overhead and underground, and this expertise will be brought to the Bidder's team.

[REDACTED]

[REDACTED] Maintenance activities will be performed in a manner consistent with Eversource maintenance policies, programs, and procedures and those required by ISO-NE for pool transmission facilities. For example:

- Substation equipment will be maintained by qualified personnel in accordance with applicable industry standards and good industry practice to provide maximum operating performance and reliability.
- The onshore substation will include a condition monitoring system that will raise an alarm for any potential issues with the equipment. Monitoring will be performed remotely as well as locally.
- The onshore substation will be inspected every month. The routine monthly visual inspection will identify any anomalies with equipment and/or operation.
- [REDACTED] In addition, all protective system maintenance will be performed in accordance with NPCC standard PRC 005-2.

Additionally, onshore facilities equipment (within the onshore substation, at the point of interconnection, and onshore transmission lines/cables) will be warranted by the supplier.

[REDACTED]

There will be an established and documented program for the maintenance of all equipment critical to the reliable operation of the station. As part of that program, preventive maintenance will be performed to assure that the operation of substation and line equipment will provide high reliable performance. In the event maintenance activities require planned system outages (e.g., for replacement of a major piece of equipment), such outages will be coordinated and executed in accordance with ISO-NE's outage planning requirements, including ISO Operating Procedure No. 3: Transmission Outage Scheduling.

11.1.4 Role of Project Sponsor

Generally, the Bidder will leverage existing organizational capabilities to perform all scheduled and unscheduled maintenance, as well as all inspections related to the foundations, WTGs, array cables, [REDACTED] onshore substation and related equipment, and onshore O&M facilities.

- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
 - [REDACTED]
 - [REDACTED]

Please see Section 11.4 for a discussion on the role played by the WTG manufacture/OEM during operations and maintenance.

11.1.5 Scheduling of Maintenance and Equipment Testing

The O&M plan contemplates an overall maintenance and equipment testing schedule that will be developed early-on during the Project execution phase, considering the specific equipment and features of the offshore wind farm, detailing the activities and frequency of the surveys, inspections, and regular maintenance to be performed per industry best practices and the experience of the Bidder's organization.

Maintenance of the Project to ensure the integrity, reliability, and operational status of the assets are accounted for in the O&M plan, including:

- both scheduled and unscheduled maintenance;
- all necessary condition monitoring, inspections and diagnostics;
- Asset Integrity Assessments;
- preventive maintenance;
- compliance with the requirements of the Large Generator Interconnection Agreement;
- all protective system maintenance in accordance with NPCC PRC 005-2 standard; and
- major overhauls.

To support O&M, the Project will be remotely controlled 24/7 via the SCADA systems for wind turbines and the balance of plant equipment. Condition monitoring is accomplished via monitoring systems implemented on key components and via the alarms in the SCADA systems. Diagnostic evaluations are completed by inspecting logs in the SCADA systems and by diagnostic on-site investigations.

11.2 Site Control Documentation

11.2 Please provide documentation to demonstrate site control for all marine terminals and other waterfront facilities that will be used for O&M.

- i. If available, evidence that the bidder or the equipment/service provider have right(s) to use a marine terminal and/or waterfront facility for O&M of the offshore wind energy project (e.g., by virtue of ownership or land development rights obtained from the owner).
- ii. If not available, describe the status of acquisition of real property rights for necessary marine terminal and/or waterfront facilities, any options in place for the exercise of these rights and describe the plan for securing the necessary real property rights, including the proposed timeline. Include these plans and the timeline in the overall project schedule.
- iii. Identify any joint use of existing or proposed real property rights for marine terminal or waterfront facilities.

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

11.3 Proposed O&M Funding Mechanism

11.3 Describe in detail the proposed O&M funding mechanism and funding levels to support planned and unplanned O&M requirements.

Based on its extensive experience operating and maintaining offshore wind facilities, the Bidder projects the cost of O&M services over the anticipated lifespan of its projects, and those costs are factored directly in financial models that are used to establish the budgetary needs for long-term O&M efforts. Funding for O&M, therefore, is integrated directly into the Bidder's long-range planning efforts for all of its projects. Such funding will be derived from generated cash flows from the revenues the Project receives from PPA payments, in addition to revenues from the capacity and ancillary services markets. [REDACTED]

[REDACTED] The Bidder can provide additional information regarding funding of O&M upon request by the Evaluation Team.

11.4 Major Equipment Terms of Warranties/Guarantees

11.4 Describe the terms (or expected terms) of the warranties and/or guarantees on major equipment that the bidder is utilizing or proposing to utilize.

11.4.1 WTGs

[REDACTED]

[REDACTED]

[REDACTED] the Bidder will perform all maintenance and inspections of the WTGs. During this period, the Bidder will receive standard warranties from third parties, such as the WTG OEM, for to any components and services furnished by such third party to the Bidder. [REDACTED]

11.4.2 Transmission and Other Assets (Offshore Substation, Onshore Substation, SCADA, HV Components and Cables)

[REDACTED]

[REDACTED]

11.5 O&M Agreement Contract Status

11.5 Describe the status of the project sponsor in securing any O&M agreements or contracts. Include a discussion of the sponsor's plan for securing a medium-term or long-term O&M contract, including the expected provider of O&M services.

[REDACTED]

[REDACTED]

[REDACTED]

11.6 O&M Services Experience

11.6 Provide examples of the bidder's experience with O&M services for other similar projects:

The Bidder's Owners, Ørsted and Eversource, have developed, constructed, and operated many large energy projects over the past 25 years.

Ørsted operates more offshore WTGs than any other operator in the world and is currently the operator of more than 20 commercial-scale offshore wind power facilities (Table 11.1). **This includes successfully developing and now operating the first offshore wind farm in the U.S. (Block Island Wind Farm) since 2016.** Eversource regularly maintains over 600 substations of various capacity and configurations. Both companies employ highly trained professional engineers and experienced personnel to install, maintain, and repair equipment. See Section 12.4 for a complete list of similar Ørsted and Eversource projects.

[REDACTED]

Table 11.1 Ørsted's Operated Sites as of 2019

Project	Size (MW)	Wind Turbine (#, WTG capacity)	Country		Ørsted Operational Period
Nysted	165.6	72 X 2.3 MW	DK		2004 - ongoing
Barrow	90	30 X 3 MW	UK		2006 - ongoing
Burbo Bank	90	25 X 3.6 MW	UK		2007 - ongoing
Horns Reef 2	209	91 X 2.3 MW	DK		2009 - ongoing
Avedøre Holme	10.8	3 X 3.6 MW	DK		2009 - ongoing
Walney	367	102 X 3.6 MW	UK		2011 - ongoing
Gunfleet Sands	172.8	48 X 3.6 MW	UK		2012 - ongoing
Anholt	400	111 X 3.6 MW	DK		2013 - ongoing
London Array	630	175 x 3.6 MW	UK		2013-2017
Westermøst Rough	210	35 X 6 MW	UK		2014 - ongoing
Gunfleet Sands demo	12	2 X 6 MW	UK		2014 - ongoing
West of Duddon Sands	388.8	108 X 3.6 MW	UK		2014 – ongoing
Borkum Riffgrund I	312	78 X 4 MW	DE		2015 - ongoing
Block Island Wind Farm	30	5 x 6.0 MW	US	GA	2016 - ongoing
Gode Wind 01-02	582	97 X 6 MW	DE		2016 - ongoing
Burbo Bank ext.	256	32 X 8 MW	UK		2017 - ongoing
Lincs	270	75 X 3.6 MW	UK		2017 - ongoing
Race Bank	573	91 x 6.3 MW	UK		2018 - ongoing
Walney Extension	659	40 x 8.0 MW 47 x 7.0 MW	UK		2018 - ongoing
Borkum Riffgrund II	450	56/8	DE		2019 – ongoing

12. PROJECT MANAGEMENT/EXPERIENCE

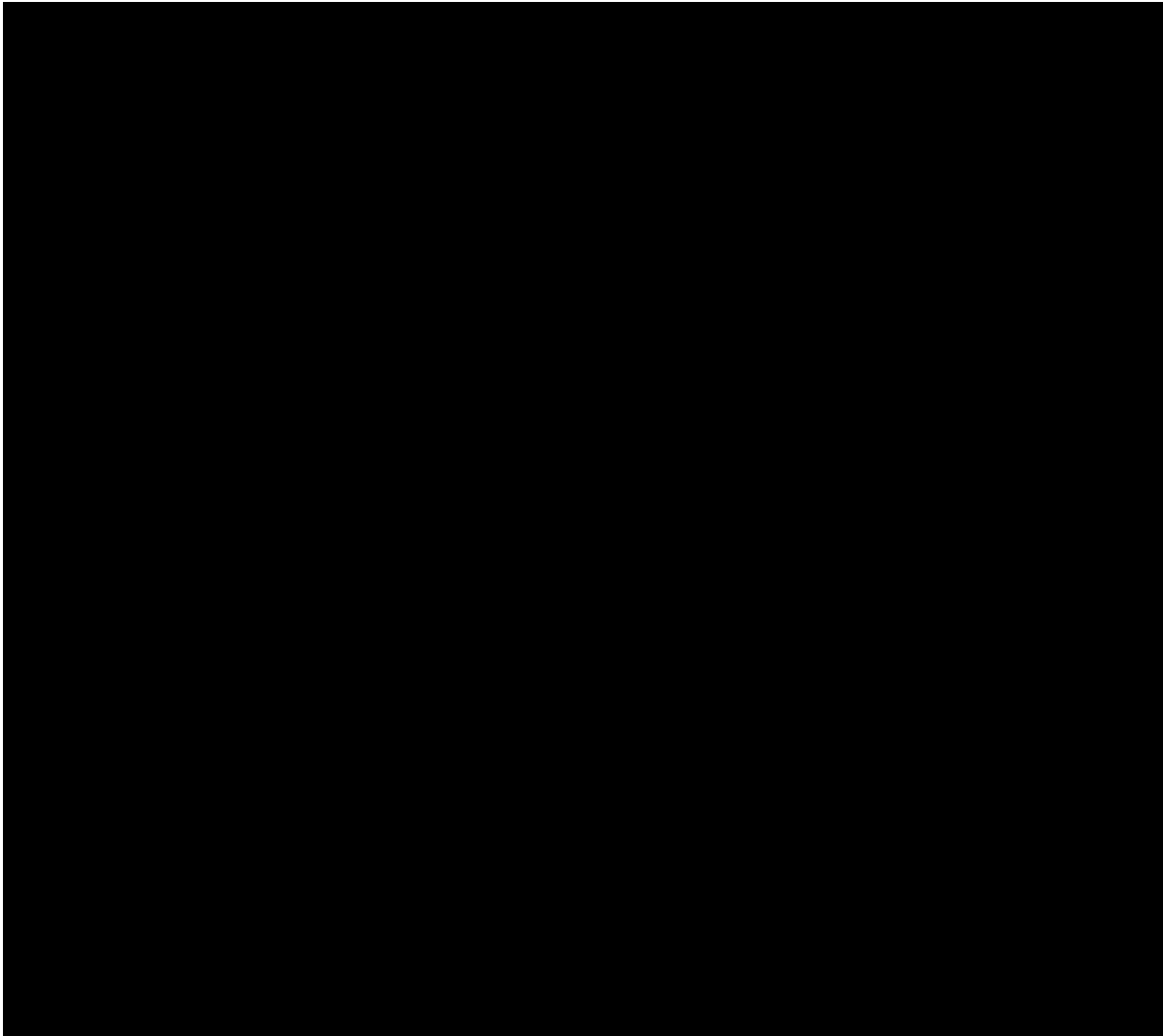
Bidders are required to demonstrate project experience and management capability to successfully develop and operate all aspects of the project proposed. The Distribution Companies are particularly interested in project teams that have demonstrated success in projects of similar type, size and technology and can demonstrate an ability to work together effectively to bring the project to commercial operation in a timely fashion.

12.1 Project Organizational Chart

12.1 Provide an organizational chart for the project that lists the project participants and identifies the corporate structure, including general and limited partners.

In 2016, Orsted NA and ESI formed the Bidder, with each controlling 50 percent of the Bidder and affiliated entities. An organization chart depicting the corporate structure is provided in [REDACTED]

[REDACTED]



12.2 Bidder and Project Participant Experience

12.2 Provide statements that list the specific experience of the bidder and each of the project participants (including, when applicable, the bidder, partners, and proposed contractors), in developing, financing, owning, and operating generating and delivery facilities, other projects of similar type, size and technology, and any evidence that the project participants have worked jointly on other projects.

12.2.1 Bay State Wind LLC

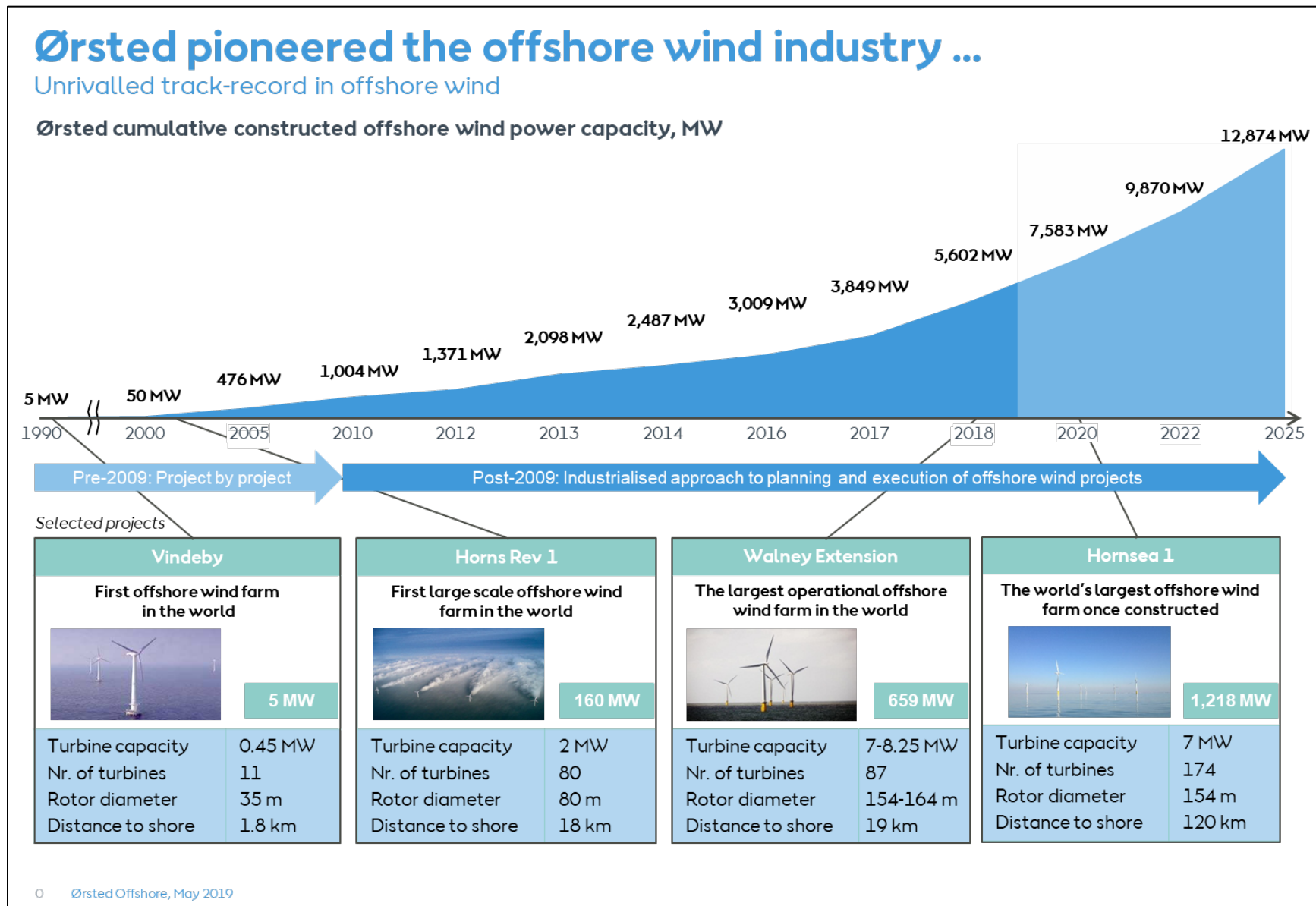
As a 50/50 joint venture between Orsted NA and ESI, the Bidder will benefit from the extensive experience that these organizations have gained over the past two decades in developing, constructing, and operating large energy projects. The Bidder provides additional details on similar projects in Section 12.4.

12.2.2 Ørsted

The Industry Leader

Ørsted is the global industry leader in offshore wind with significant experience with the rigors and challenges of the offshore wind business. Over the past 25 years, Ørsted has constructed 5.6 GW of offshore wind capacity (see Figure 12.2), which is just under 30 percent of globally installed offshore wind capacity. Ørsted's existing activities span a number of markets which include the United States, Denmark, the United Kingdom, Germany, the Netherlands, and Taiwan. As a result, Ørsted is well practiced in adapting to, and thriving within, new regulatory, permitting, and political landscapes. It is the current Ørsted leadership team that, within the short span of the past three to four years, has driven dramatic cost reductions and paved the way for exponential market growth.

Figure 12.2 Total Constructed Capacity by Ørsted (MW)



Unmatched U.S. Experience

- Ørsted has been investing significantly in the development of offshore wind projects in the northeast and mid-Atlantic since 2005. The Company has gained unmatched experience in the development of offshore wind in the United States through its 30 MW Block Island Wind Farm project, which is the first offshore wind farm constructed in America. The Block Island Wind Farm, which is the first offshore wind farm constructed in America. The Block Island Wind Farm has been in commercial operation since December 2016. Ørsted team members managed all aspects of the development, permitting, engineering, procurement, financing, and contracting of the Block Island Wind Farm, a process that began in 2008. Financing for the Block Island Wind Farm was successfully closed in February 2015, making it the first offshore wind farm to be successfully financed in the United States. Its \$300 million in financing was supported by leading global equity and debt investors.
- Ørsted is also actively developing Ocean Wind, a 1,100 MW installation that recently received an award to deliver power to New Jersey, the Skipjack Wind Farm, a 120 MW installation that will deliver power to Maryland, as well as Coastal Virginia Offshore Wind, a demonstration project that will deliver power to Virginia.

Attachment 12-1 includes additional information about Ørsted's U.S. projects.

Exceptional Capabilities

All of Ørsted's experience in development, construction, operation, and decommissioning of offshore wind energy is relevant to the Project. Specific examples of Ørsted's expertise in development and operation of offshore wind energy projects include:

- Successfully developing the first commercial-scale offshore wind farm in the world (Horns Rev I, 2003);
- Designed and constructed the largest wind farm in operation today (Walney Extension, 2018);
- Successfully built and now operates the first offshore wind farm in the U.S. (Block Island Wind Farm, 2016) and currently developing/constructing the first offshore wind projects for Connecticut, New York, New Jersey, Maryland and Virginia;
- Participating in over 20 competitive offshore wind tenders and unparalleled track record in executing on project development post-award;
- Competitively awarded a PPA for what will be the largest wind farms in the world once constructed (Hornsea I and II's combined 2,600 MW);
- First-ever win with a zero-subsidy bid (Germany 2017);
- Permitting of complex projects across three continents with input and consent required from numerous stakeholders including regulatory agencies, non-governmental organizations, and the fishing industry;
- Design and planning of high-voltage transmission solutions capable of delivering power from offshore wind projects to the identified onshore grid connection point, from as far away as 50 miles (80 km) (Walney Extension, Race Bank and Hornsea 1);

- Construction of offshore wind farms in challenging marine environments, including far from shore projects, high wave heights, high wind speeds and rough sea conditions;
- Planning and execution of O&M strategies for offshore wind farms; and
- First-ever decommissioning of an offshore wind project, the Vindeby Offshore Wind Farm near Lolland, Denmark in March 2017.¹⁴

Ørsted has the knowledge and experience with every phase of offshore wind development to design and implement solutions that are appropriate and proven. To demonstrate Ørsted's breadth and depth of industry knowledge, a partial list of previous projects is provided in Section 12.4. Key personnel are included in Section 12.3. Additionally, Ørsted's unparalleled experience in securing financing, and operating and maintaining offshore wind projects is demonstrated in Section 5.4.

Ørsted is an industry leader, with 3x the installed offshore wind-energy capacity than its nearest competitor.

12.2.3 Eversource

Eversource is an industry leader in constructing and maintaining large transmission and distribution projects including high-voltage and extra high-voltage overhead, underground, submarine, and hybrid transmission lines, and associated terminal equipment. Throughout the northeast U.S., Eversource has successfully completed hundreds of capital projects over the past decade with a proven track record in:

Over the past 3 years alone, Eversource has planned, designed, permitted and constructed \$6.0 billion of energy infrastructure projects in the northeast.

- Successful single state and multi-state project siting and permitting;
- Working closely with other companies to develop major projects; and
- Safely and efficiently constructing transmission and distribution projects.

As described in Section 5, Eversource, a Fortune 500 energy company, has significant financial resources and invests substantially in transmission facilities. Eversource financed those investments with its strong cash flows and ready access to the capital markets.

Eversource has successfully completed hundreds of traditional and major capital projects over the past decade. Eversource's innovative solutions to technical and environmental challenges include:

- The first and most extensive 345 kV applications of solid core cross-linked polyethylene (XLPE) underground cables in the United States;
- Laying marine cable in Long Island Sound from a purpose-built ship; and
- Constructing overhead transmission support structures from the air, using helicopters.

Eversource is only one of four North American energy companies recognized as an Environmental, Social and Governance leader. Eversource brings to bear its deep

¹⁴ Hyperlink to YouTube video: <https://www.youtube.com/watch?v=QEJHB8V4hEE>.

commitment to supporting New England's renewable energy goals, and will leverage its considerable experience in interconnecting renewable generation resources, such as wind power, into the electrical system. Eversource has a proven track record of interconnecting generation resources reliably and cost-effectively, sustaining the integrity of the transmission system while also alleviating costs for customers. Finally, Eversource is recognized as a leader in providing top-tier reliability, with the utmost focus on safety.

For the purposes of developing the Project, Eversource has replicated its successful formula by assembling a core team of seasoned professionals who have been involved in the development and construction of numerous large transmission facilities, supplemented by internal and external resources that provide the expertise to support project execution. A partial list of previous projects is provided in Section 12.4 to further illustrate Eversource's experience. Section 12.3 provides additional detail on key personnel dedicated to this Project.

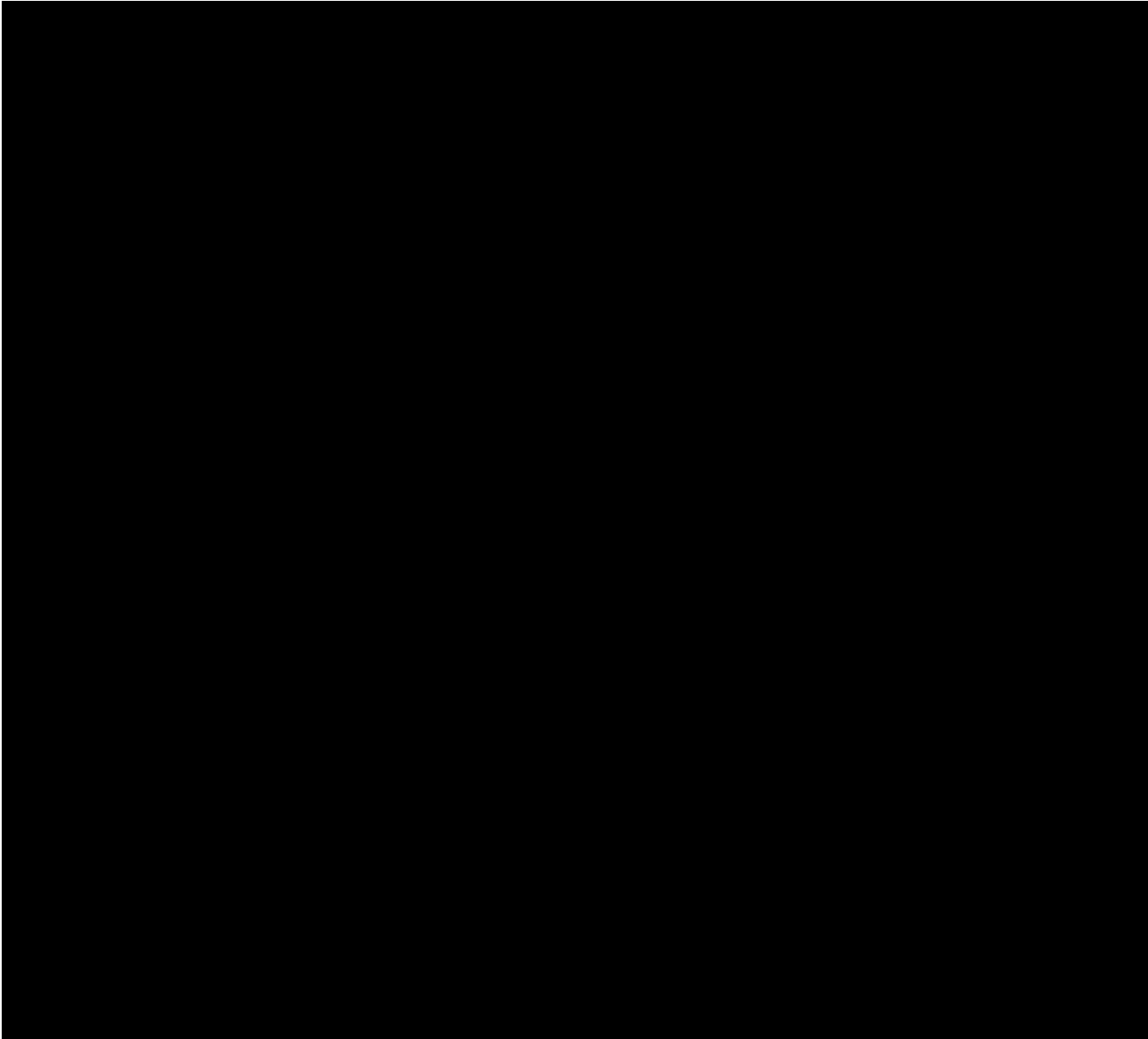
12.2.4 Bay State Wind Experience

Ørsted and Eversource have been close partners and successfully working together since 2016 when Ørsted and Eversource created the joint venture.

In July 2013, Ørsted won the Department of the Interior's first competitive lease sale for offshore wind energy areas to acquire BOEM Leases OCS-A 0486 and OCS-A 0487, an area known as the Rhode Island-Massachusetts WEA. In 2015, Ørsted acquired BOEM Lease [REDACTED], immediately adjacent to the RI-MA WEA. Following the Bay State Wind formation, the joint venture has been actively developing these sites and has completed major offshore surveys to support engineering permit applications.

As a result of Bay State Wind's efforts, the joint venture has won contracts and will construct over 1,700 MW of offshore wind generation. The first of these projects will be the South Fork Wind Farm, a 130 MW offshore wind farm located in OCS-A 0486 and designed specifically to serve Long Island's constrained South Fork. The second project will be the Revolution Wind project, a 704 MW installation that will deliver 400 MWs to Rhode Island (PPA has received final regulatory approval) and 304 MWs to Connecticut (final regulatory approval has been received for 200 MWs of PPAs). The third project will be Sunrise Wind, which was recently awarded an 880 MW contract in New York.

The joint venture is constructed such that Ørsted will lead and design the efforts for building the offshore components of the facilities. Likewise, Eversource will lead and design the onshore components. This synergistic approach is a natural fit which has created an entity with deep expertise and experience which has lead Bay State Wind to be one of the world's largest offshore wind developers.



12.3 Key Staff Experience

- 12.3 Provide a management chart that lists the key personnel dedicated to this project and provide resumes of the key personnel. Key personnel of the bidder’s development team having substantial project management responsibilities must have:
- i. Successfully developed and/or operated one or more projects of similar size or complexity or requiring similar skill sets; and
 - ii. Experience in financing power generation projects (or have the financial means to finance the project on the bidder’s balance sheet).

Ørsted has approximately 2,300 Wind Power employees dedicated to the development, construction and operation of large-scale offshore wind projects across the globe, including

approximately 80 employees located in the United States. Eversource has approximately 8,000 employees dedicated to the development, construction and operation of large-scale transmission and distribution projects across the northeast.

The Project management structure and development organization is provided in [REDACTED]. Once construction of the Project commences, some roles will be exchanged with people specialized in project execution. The project development director is replaced by a program director from the Ørsted EPC Division; the technical project manager is replaced by an EPC director and similarly for other roles.

The robust experience of the Bidder's supporting organization in securing financing is demonstrated in Section 5.4.



12.3.1 Key Personnel Directly Involved in the Management of the Project

The key personnel directly involved in the management of this Project are identified below and resumes for those personnel are provided in [REDACTED] Members of the Project team have substantial experience within different areas of the development project: consents/permitting, market development, project development, and partnerships, along with broader business and investment experience.

Ørsted Key Staff

Ørsted relies on an experienced team to lead and manage the successful implementation of the Project throughout all development aspects in accordance with management models that have executed dozens of previous projects [REDACTED]

[REDACTED]	
Name	Responsibilities
[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]

[REDACTED]	
[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]

[REDACTED]	
[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]

Eversource Key Staff

In its role as co-owner of Bay State Wind LLC and service provider for development, construction and operation of the onshore facilities, Eversource has an experienced team to lead and manage the successful implementation of the facility [REDACTED]

Case No.	Case Name	Case Description
1	Case 1	Case 1 Description
2	Case 2	Case 2 Description
3	Case 3	Case 3 Description

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12.4 Relevant Current Projects

12.4 Provide a listing of all projects the project sponsor has successfully developed or that are currently under construction. Provide the following information as part of the response:

- i. Name of the project
- ii. Location of the project
- iii. Project type, size and technology
- iv. Commercial operation date
- v. Estimated and actual capacity factor of the project for the past three years
- vi. Availability factor of the project for the past three years
- vii. References, including the names and current addresses and telephone numbers of individuals to contact for each reference.

12.4.1 Ørsted

To date, Ørsted has constructed 5.6 GW of offshore wind capacity, which is approximately 30 percent of globally installed offshore wind capacity. Ørsted's existing activities span a number of markets, which include the United States, Denmark, the United Kingdom, Germany, the

Netherlands, and Taiwan. [REDACTED] Detailed information regarding Ørsted's offshore wind portfolio is provided in Table 12.4.

[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]

12.4.2 Eversource

Eversource has successfully developed several recent large transmission projects. Descriptions of those projects having a capital cost of more than \$70 million are provided in Table 12.5. Since the projects listed are not generation projects, there are no capacity and availability factors.

All the projects listed in Table 12.5 are owned by Eversource affiliates, [REDACTED]
[REDACTED]
[REDACTED]

Table 12.4 Ørsted Project Experience

Project/Program	Location	Description	Size and Project Technology	In-Service Date	Status	Capacity Factor (Estimated) ¹			Capacity Factor (Actual) ²			Availability Factor (Actual) ³		
						2016	2017	2018	2016	2017	2018	2016	2017	2018
USA														
Ocean Wind	New Jersey	Offshore Wind	1,100 MW; Technology TBD	■	Under Development	■	■	■	■	■	■	■	■	■
Skipjack Wind Farm	Maryland	Offshore Wind	120 MW; Technology TBD	■	Under Contract	■	■	■	■	■	■	■	■	■
Coastal Virginia Offshore Wind	Virginia Beach	Offshore Wind	12 MW; Technology TBD	■	Under Contract	■	■	■	■	■	■	■	■	■
Block Island Wind Farm	Block Island, RI	Offshore Wind	30 MW; GE 6 MW SWT	2016	In Operation	■	■	■	■	■	■	■	■	■
Denmark ⁴														
Anholt	Kattegat (DK)	Offshore wind	400 MW; Siemens Gamesa SWT-3.6-120	2013	In Operation				■	■	■	■	■	■
Avedøre Holme	Øresund (DK)	Nearshore wind	10.8 MW; Siemens Gamesa SWT-3.6-107/120	2009 / 2011	In Operation				■	■	■	■	■	■
Horns Rev 2	North Sea (DK)	Offshore wind	209.3 MW; Siemens Gamesa SWT-2.3-93	2010	In Operation	■	■	■	■	■	■	■	■	■
Horns Rev 1	North Sea (DK)	Offshore wind	160 MW; Vestas V80-2 MW	2003	In Operation				■	■	■	■	■	■
Nysted	Fehmarnbelt (DK)	Offshore wind	165.6 MW; Bonus SWT 2.3-82	2003	In Operation				■	■	■	■	■	■
Middelgrunden	Øresund (DK)	Nearshore wind	20 MW; Bonus B76/2000	2001	Divested (2018)				■	■		■	■	■
Vindeby	Smålandsfarvandet (DK)	Offshore wind	4.95 MW; Bonus B35/450	1991	Decommissioned				■	■		■	■	■
Germany ⁵														
OWP West	North Sea (DE)	Offshore wind	240 MW; Technology TBD	2024	Under Development	■	■	■	■	■	■	■	■	■
Borkum Riffgrund West 2	North Sea (DE)	Offshore wind	240 MW; Technology TBD	2024	Under Development	■	■	■		■	■	■	■	■
Gode Wind 3	North Sea (DE)	Offshore wind	110 MW; Technology TBD	2023	Under Development	■	■	■	■	■	■	■	■	■
Borkum Riffgrund 2 ⁶	North Sea (DE)	Offshore wind	450 MW; MVOW 8.3 MW-164	2018	In Operation	■	■		■	■		■	■	
Gode Wind 1	North Sea (DE)	Offshore wind	330 MW; Siemens SWT 6.0-154	2016	In Operation				■	■	■	■	■	■
Gode Wind 2	North Sea (DE)	Offshore wind	252 MW; Siemens SWT 6.0-154	2016	In Operation				■	■	■		■	■
Borkum Riffgrund 1	North Sea (DE)	Offshore wind	312 MW; Siemens SWT 4.0-120	2015	In Operation				■	■	■		■	■
Netherlands														
Borssele 1 & 2	North Sea (NL)	Offshore wind	752 MW; Siemens Gamesa 8 MW	2020	Under Construction	■	■	■	■	■	■	■	■	■
United Kingdom														
Hornsea 2	North Sea (UK)	Offshore wind	1,386 MW; SGRE-8.0-167	2022	Under Construction	■	■	■	■	■		■	■	■
Hornsea 1	North Sea (UK)	Offshore wind	1,200 MW; SGRE-7.0-154	2020	Under Construction	■	■	■	■	■		■	■	■
Walney Extension	Irish Sea (UK)	Offshore wind	659 MW; MHI-Vestas V164-8.0 MW & Siemens SWT-7.0-154	2018	In Operation	■	■	■	■	■		■	■	■
Race Bank	North Sea (UK)	Offshore wind	573 MW; SWT-6.0-154	2018	In Operation	■	■	■	■	■		■	■	■
Burbo Bank Extension	Irish Sea (UK)	Offshore wind	254 MW; V164-8.0 MW (MHI Vestas Offshore Wind)	2017	In Operation	■	■	■	■	■		■	■	■

Table 12.5 Eversource Project Experience

Project/Program	Location	Description	Size and Project Technology	In-Service Date	Status
Bethel/Norwalk	CT	Electrical Transmission Line	21-mile (34-km) 345 kV line consisting of 2.1 miles (3.4 km) of XLPE cable, 9.7 miles (15.6 km) of high pressure fluid filled cables and 8.6 miles (13.8 km) of overhead construction	2006	In Operation
Glenbrook Cables	CT	Electrical Transmission Line	Two sets of parallel 115 kV XLPE cables installed along an 8.7-mile (14-km) route underneath roadways	2008	In Operation
Stoughton Cables	MA	Electrical Transmission Line	Two parallel 345 kV high pressure fluid filled cables installed along a 17-mile (27-km) route, and a third cable installed along an 11-mile (17-km) route, and new 345 kV switching station	2007 2009	In Operation
Long Island Replacement Cable	CT/NY	Underwater Electrical Transmission Line	Three 138 kV XLPE marine cables	2008	In Operation
Middletown/Norwalk	CT	Electrical Transmission Line	345 kV circuits consisting of 45 miles (72 km) of overhead line and 24 miles (39 km) of underground cables; reconstruction of 57 miles (92 km) of 115 kV line; construction of new substations and expansion of existing substations	2009	In Operation
Greater Springfield Reliability (NEEWS)	MA/CT	Electrical Transmission Line	39 linear miles (63 linear km) of new 345 kV transmission lines and reconstruction of existing 115 kV lines with 13 new or rebuilt substations and switching stations (110 circuit miles [177 circuit km])	2013	In Operation
Long-Term Lower SEMA Upgrades	MA	Electrical Transmission Line	New 18-mile (29-km) 345 kV line and new 345 kV substation; reconstruction of pre-existing 345 kV line on separate towers, and related 115 kV modifications.	2014	In Operation

Table 12.5 Eversource Project Experience (continued)

Project/Program	Location	Description	Size and Project Technology	In-Service Date	Status
Interstate Reliability (NEEWS)	CT	Electrical Transmission Line	37 miles (59 km) of new 345 kV line with associated substation improvements	2015	In Operation
Greater Hartford Central CT (GHCC)	CT	Electrical Transmission Line	27 projects (115 kV), 23 of which were placed in service as of December 31, 2018, with the balance scheduled to be complete during 2019	2019 (projected)	Partially In-Service/Under Construction
Greater Boston Reliability Solution	MA	Electrical Transmission Line	A series of 115 and 345 kV projects started in 2017 that will improve reliability in the greater Boston region	2021 (projected)	Partially In-Service/Under Construction

Table 12.6 Bay State Wind Project Experience

Project/Program	Location	Description	Size and Project Technology	In-Service Date	Status	Capacity Factor (Estimated) ¹			Capacity Factor (Actual) ²			Availability Factor (Actual) ³		
						2016	2017	2018	2016	2017	2018	2016	2017	2018
USA														
Sunrise Wind (NY)	RI-MA WEA/MA WEA/New York	Offshore Wind	880 MW; Technology TBD	■	Contract Pending	■	■	■	■	■	■	■	■	■
Bay State Wind	Massachusetts	Offshore Wind	■	■	Under Development	■	■	■	■	■	■	■	■	■
Revolution Wind (RI)	RI-MA WEA/Rhode Island	Offshore Wind	400 MW; Technology TBD	■	Under Contract	■	■	■	■	■	■	■	■	■
Revolution Wind (CT)	RI-MA WEA/Rhode Island	Offshore Wind	304 MW; Technology TBD	■	Under Contract	■	■	■	■	■	■	■	■	■
South Fork Wind Farm	RI-MA WEA/New York	Offshore Wind	130 MW; Technology TBD	■	Under Contract	■	■	■	■	■	■	■	■	■

12.5 Project Team

- 12.5 With regard to the bidder's project team, identify and describe the entity responsible for the following, as applicable:
- i. Construction Period lender

ii. Operating Period Lender and/or Tax Equity Provider

iii. Financial Advisor

iv. Environmental Consultant

v. Facility Operator & Manager

vi. Owner's Engineer

vii. Transmission/Delivery Consultant

viii. Legal Counsel

The shared expertise of Owners Ørsted and Eversource in developing, financing, constructing, and operating energy projects will be supplemented by third party firms as outlined below.

12.5.1 Construction Period Lender

[REDACTED]

12.5.2 Operating Period Lender and/or Tax Equity Provider

[REDACTED]

[REDACTED]

12.5.3 Financial Advisor

[REDACTED]

12.5.4 Environmental Consultant

[REDACTED]

[REDACTED]

12.5.5 Facility Operator and Manager

Offshore

The Bidder will be the Facility Operator and Manager.

The Bidder has developed a preliminary O&M plan that leverages the collective experience of Ørsted and Eversource. For offshore wind O&M, Ørsted has developed and instituted a rigorous operation and maintenance program that is continuously improved over time to benefit from lessons-learned. Modeled on the successful track record of Ørsted, the offshore portion of the Project’s O&M plan has three major components:

- [REDACTED]
- [REDACTED]
- [REDACTED]

Onshore

[REDACTED]

Section 11 includes additional information regarding the Bidder's approach to operation and maintenance.

12.5.6 Owner’s Engineer

[REDACTED]

12.5.7 Transmission/Delivery Consultant

[REDACTED]

12.5.8 Legal Counsel

[REDACTED]

13. EMISSIONS

In this section, the Bidder highlights its unprecedented clean energy leadership, as well as the emissions reduction impact of the Project.

Ørsted has made a commitment to going 100 percent renewable, and already today 85 percent of its capital is deployed toward green energy solutions in wind, biofuels, storage and customer solutions.

Similarly, Eversource is focused on being a catalyst for clean energy development in New England. It allocates 7 percent of its annual revenues—or more than \$500 million annually—to energy efficiency programs for its nearly 4 million customers. Its energy efficiency programs have been consistently ranked #1 in the country. The company recently constructed 70 MW of solar energy in Massachusetts and divested its remaining fossil fueled generation. Eversource has spent approximately \$8 billion over the past 12 years to strengthen New England's high voltage electric grid to improve reliability and resiliency and to better allow new efficient and less emitting power to reach the region's customers.

Bay State Wind is consistent with the Owners' commitment to transitioning to a clean energy future and will make a significant contribution towards the Commonwealth's ambitious greenhouse gas reduction goals.

13.1 Emissions Estimates

13.1 Provide emissions estimates based on available data from the unit manufacturer. Alternatively, provide actual emissions data determined in accordance with the paragraph above for a similar facility built within the past 3 years. Include copies of supporting documentation for all emissions estimates.

The operation of WTGs does not generate greenhouse gas emissions; therefore, emissions data is not applicable (Table 13.1).

Table 13.1 Project Anticipated Emissions, expressed in pounds/megawatt-hour (lbs/MWh)¹

Source of Information	Date of Test (if applicable)	Greenhouse Gases ² (CO ₂ e)	Nitrogen Oxide (NO _x)	Sulfur Oxide (SO _x)	Carbon Monoxide (CO)	Particulate Matter (PM 2.5)	Methane (CH ₄)
N/A	N/A	0	0	0	0	0	0

Note:

1 Assumed to relate solely to the operation of WTGs. Additional information available upon request if necessary.

2 (all except methane) Expressed as Carbon Dioxide equivalent (CO₂e)

13.2 Improvements to the Emissions Profile

13.2 Describe any past investments that will or have been made to your facility to improve its emissions profile or any planned future investments made to your facility in order to improve its emissions profile.

Not applicable.

13.3 Contribution to Massachusetts 2008 Global Warming Solutions Act and the 2010 Clean Energy and Climate Plan for 2020

13.3 Describe how your project will contribute to the Massachusetts 2008 Global Warming Solutions Act (GWSA) and the 2010 Clean Energy and Climate Plan for 2020, updated in 2015. Describe how your project will contribute to the Commonwealth's 2030, 2040 and 2050 GHG emission targets and any benefits associated with an earlier operational date.

The Massachusetts 2008 Global Warming Solutions Act (GWSA) requires that all sectors of the Massachusetts economy should achieve a 25 percent reduction in greenhouse gas emissions by 2020 and an 80 percent reduction by 2050 as compared to 1990 levels.

Benefits of Displacing Fossil Generation in New England

██████ short tons per year is the equivalent of removing ██████ cars from the roads¹⁵

The Project represents the addition of a significant new large-scale, clean energy resource to meet regional power demands, and enough generation to meet the needs of approximately ██████ Massachusetts residences¹⁶. As detailed in the 2015 *Update of the Clean Energy and Climate Plan for 2020*¹⁷, additional clean electricity is one of the two most significant drivers for continued reduction of greenhouse gas emissions and achievement of Massachusetts' GWSA goals.

A ██████ will displace significant fossil generation in the ISO-NE system. Using monthly marginal emissions rates provided by ISO-NE,¹⁸ the Project would abate ██████ short tons of greenhouse gas emissions over the course of the 20-year study period. This is equivalent to ██████ percent of the Commonwealth's required GWSA emission reductions for 2020 to 2030, 2030 to 2040, and 2040 to 2050.¹⁹

The estimate of carbon reductions is calculated using the marginal emissions rates found in the 2017 *ISO New England Generator Air Emissions Report*.²⁰ ISO-NE calculates a weighted marginal emissions rate which includes all Locational Marginal Units over the course of the year. These marginal emission rates were multiplied by the Project's estimated annual output in MWh to determine the avoided emissions.

¹⁵ Based on EPA figures for typical passenger vehicle emissions of carbon dioxide per year.

¹⁶ Based on Project production forecast and 2017 EIA data for Massachusetts' residential energy use.

¹⁷ <http://www.mass.gov/eea/docs/eea/energy/cecp-for-2020.pdf>

¹⁸ https://www.iso-ne.com/static-assets/documents/2019/04/2017_emissions_report.pdf, Table 1-2

¹⁹ ██████

²⁰ https://www.iso-ne.com/static-assets/documents/2019/04/2017_emissions_report.pdf

[REDACTED]

[REDACTED]

14.

DEMONSTRATED COMMITMENT TO CREATE AND FOSTER EMPLOYMENT AND ECONOMIC DEVELOPMENT AND OTHER DIRECT BENEFITS

Thanks to Governor Charlie Baker’s first in the nation commitment to the offshore wind industry, Massachusetts is well-positioned to use its rich maritime history, skilled workforce, and world-class academic institutions to benefit from the maturing of this still nascent industry. The Bay State Wind Economic Benefits Plan (the Economic Benefits Plan) will couple these attributes with our global supply chain and world leading offshore wind construction experience to strengthen the workforce, support renewal of the economy of the South Coast, and invest in research to protect the region’s biodiversity and accelerate deployment of next generation renewable energy.

This Economic Benefits Plan is the result of more than 2 years spent maturing Bay State Wind and our affiliated portfolio of projects in the northeast. The Economic Benefits Plan includes the necessary infrastructure revitalization, workforce development and economic development plans necessary to successfully complete the Project while also sustainably supporting the communities in which we work. The Bidder will deliver on the promise of high skilled, high wage jobs that are integral to developing this new maritime industry.

[REDACTED]

[REDACTED]

[REDACTED]		
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
	[REDACTED]	
	[REDACTED]	
[REDACTED]	[REDACTED]	[REDACTED]
	[REDACTED]	
	[REDACTED]	
	[REDACTED]	
[REDACTED]	[REDACTED]	[REDACTED]
	[REDACTED]	

[REDACTED]		
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	
	[REDACTED]	
	[REDACTED]	
	[REDACTED]	
[REDACTED]	[REDACTED]	[REDACTED]
		[REDACTED]
	[REDACTED]	[REDACTED]
	[REDACTED]	[REDACTED]
[REDACTED]		

14.1 Please provide an estimate of the number of jobs to be created directly during project development and construction, and during operations, and a general description of the types of jobs created, estimated annual compensation, the employer(s) for such jobs, and the location. Employment impacts should be broken out by state and the region as a whole and highlight any impacts in economically distressed areas. Please treat the development, construction, and operation and maintenance periods separately in your response. All information provided must be **measurable**.

Please describe the status of any contractual commitments with respect to direct job creation and provide any pertinent agreements that have been executed

[REDACTED]

[Redacted content]

14.2 Other Economic Activity

14.2 Please describe and quantify any other economic activity or development expected to result directly from the proposed project. Impacts should be broken out by state and the region as a whole and highlight any impacts in economically distressed areas. Direct economic activity/development will be evaluated based on scale, credibility and firmness. Commitments

that **secure long-term benefits** are preferred. Commitments will be evaluated by the degree or extent to which the asserted benefits are **contractually committed** to by the bidder. Specific commitments to economic activity or development should include (but are not limited to):

- Investment in supply chain and infrastructure improvements to support the offshore wind industry, for example, commitment to contribute to the Offshore Wind Accelerator Fund that supports the economic development activities for the offshore wind industry;
- Investment in workforce development and environmental research facilities to support the offshore wind industry;
- Commitment to utilize port facilities and office space during project development, deployment during construction, and operation and maintenance of the project.

Please describe the status of any contractual commitments with respect to economic development and provide any pertinent agreements that have been executed.

With more than 17,000 MW of offshore wind slated to be procured in the northeast by 2035, it is critical that a successful bidder invest in the local infrastructure and workforce that is key to delivering these projects successfully and on time. That's why Bay State Wind has invested more than 2 years in the scouting, planning and development of infrastructure revitalization and workforce development initiatives in Massachusetts, New England and the northeast. These efforts have resulted in a robust plan to secure the necessary port facilities and future workers that will be used to deliver our offshore wind projects.

The Bidder's Economic Benefits Plan offers a comprehensive program that will produce both immediate and long-lasting positive economic benefits to the Commonwealth and the region and it will further establish the U.S. offshore wind industry along the South Coast of Massachusetts.

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

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[REDACTED]

[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

14.5 Benefits to Low-Income Ratepayers in the Commonwealth and Impacts on the Cost to the Project

14.5 Please demonstrate any benefits to low-income ratepayers in the Commonwealth, and the impact, if any, those benefits will have on the cost to the project. Please provide any agreements to effectuate those benefits.

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

15. EXCEPTIONS TO FORM PPAS

Please attach an explanation of any exceptions to the Form PPA set forth in Appendices B-1 and B-2. Comments to the proposed Form PPA must include any specific alternative provisions in a redline format to the Form PPA. If the bidder is proposing a two-phased project with each phase covered by a separate contract, the bidder should provide two separate contracts with specific alternative provisions to the Form PPA in redline format.

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

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16. EXCEPTIONS TO FORM COMMITMENT AGREEMENT

Please attach an explanation of any exceptions to the Commitment Agreement set forth in Appendix G. Comments to the proposed Commitment Agreement must include any specific alternative provisions in a redline format to the Commitment Agreement.

The Bidder has attached a mark-up of the form of the Commitment Agreement provided in RFP Appendix G (Attachment 16-1). Consistent with RFP Paragraph 2.2.1.9, the Bidder's proposed changes generally fall into the following categories:

- [REDACTED]
- [REDACTED]
- [REDACTED]

The proposed revisions in the mark-up of the Commitment Agreement (Attachment 16-1) are self-executing.