

Revolution Wind

A Joint Venture of Ørsted and Eversource

RI EFSB Preliminary Hearing

March 22, 2021

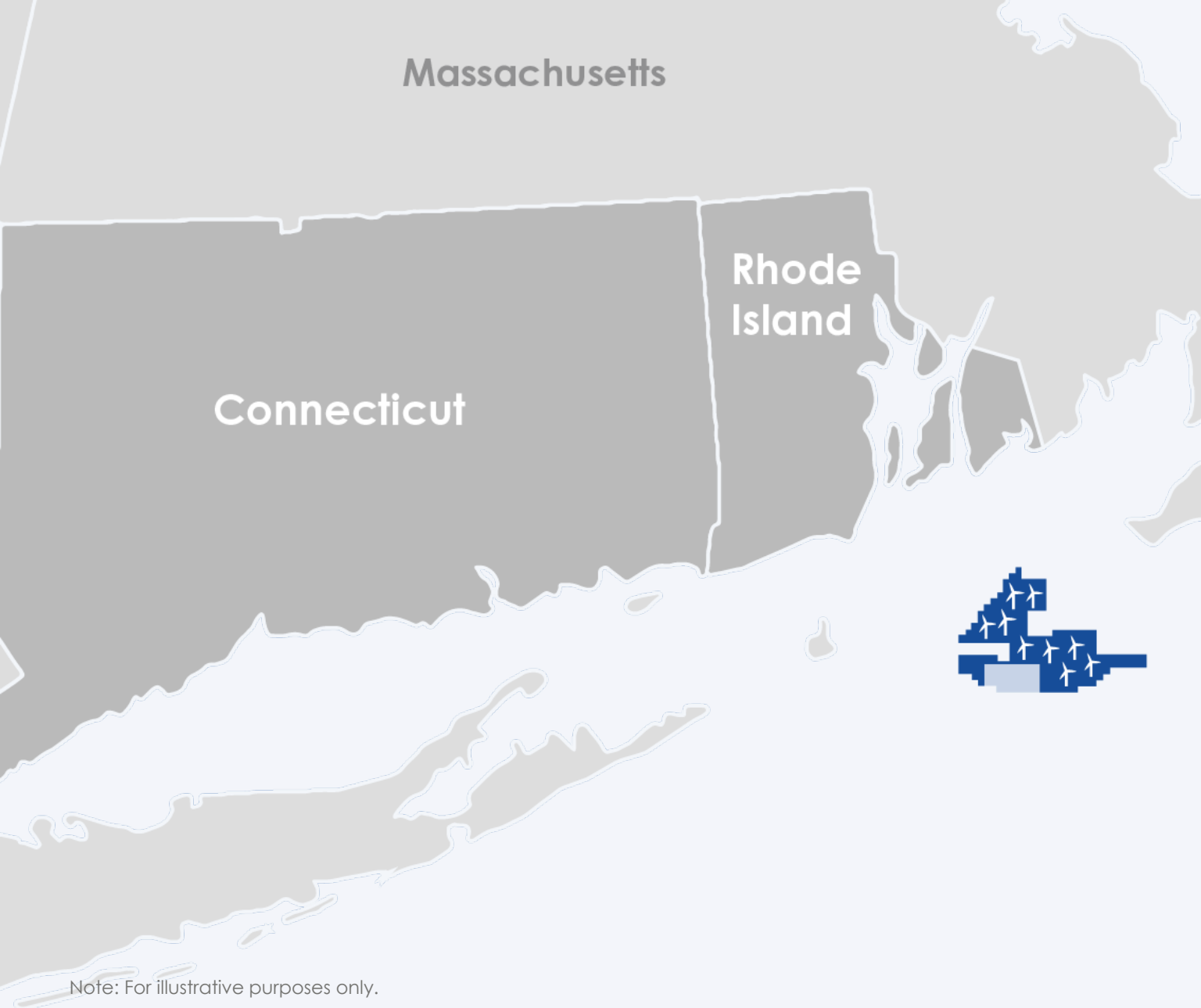
**Revolution
Wind**

Powered by
Ørsted &
Eversource



Overview

- 1 Introduction to Revolution Wind
- 2 Overview of Project Components
- 3 **EFSB Standards**
 - Public Need
 - Cost Justification
 - Socioeconomic Benefits
 - Agency and Community Outreach
 - Environmental Review
- 4 **Advisory Opinion Suggestions**



Note: For illustrative purposes only.

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Revolution Wind: A Brief Overview

- 50/50 joint venture between Ørsted and Eversource
- 704 MW offshore wind project to serve RI (400 MW) and CT (304 MW)
- Turbines located 20 miles east of Block Island, 15 miles south of the Rhode Island coast, 12 miles southwest of Martha's Vineyard
- Landfall located at Quonset Business Park in North Kingstown, RI
- Onshore substation at Davisville in North Kingstown, RI



Offshore Wind Pioneer

- 20+ years of experience building offshore wind farms
- Built the first offshore wind farm in the world
- Owns and operates America's first offshore wind farm - Block Island Wind Farm

Proven Expertise

- 26 successful offshore wind farms, with over 1,500 turbines installed worldwide and the largest project portfolio in the country



National Energy Leader with Northeast Roots

- 100+ year history of operation in Northeast New England's largest energy company
- Deep-rooted knowledge of the region's electrical system with unparalleled expertise in energy transmission

Catalyst for Clean Energy Solutions

- Leading driver of northeast, clean energy economy supporting economic development across the region

Key Wind Farm Components

Revolution Wind will have several major offshore and onshore components.

→ Offshore

- Wind Turbines
- Offshore Substation(s)
- Subsea Cables

→ Onshore

- Onshore Substation
- Interconnection Facility
- Transmission Line



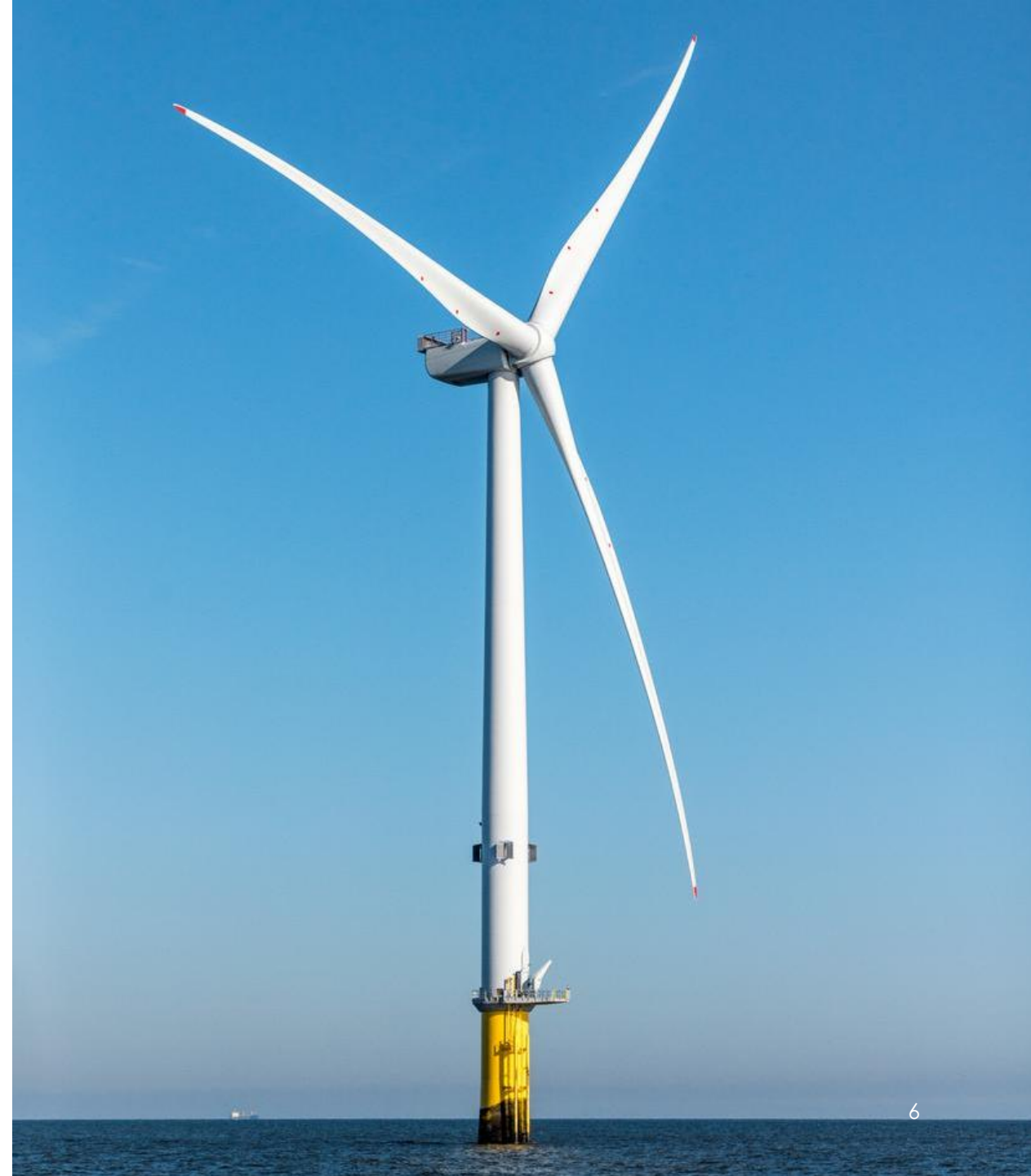
Offshore Project Components: Substation(s), Subsea Cables and Wind Turbines

→ Two Categories of Subsea Cables:

- Inter-array cables: a system of cables that connect each turbine to the offshore substation(s)
- Export cables: Two approximately 46-mile-long cables that connect the offshore substation(s) to onshore components

→ Wind Turbines:

- Up to 100 wind turbine generators
- Wind farm layout is 1 x 1 nautical mile grid
- Monopile foundation
- Built to withstand 500-year hurricane wind and wave conditions



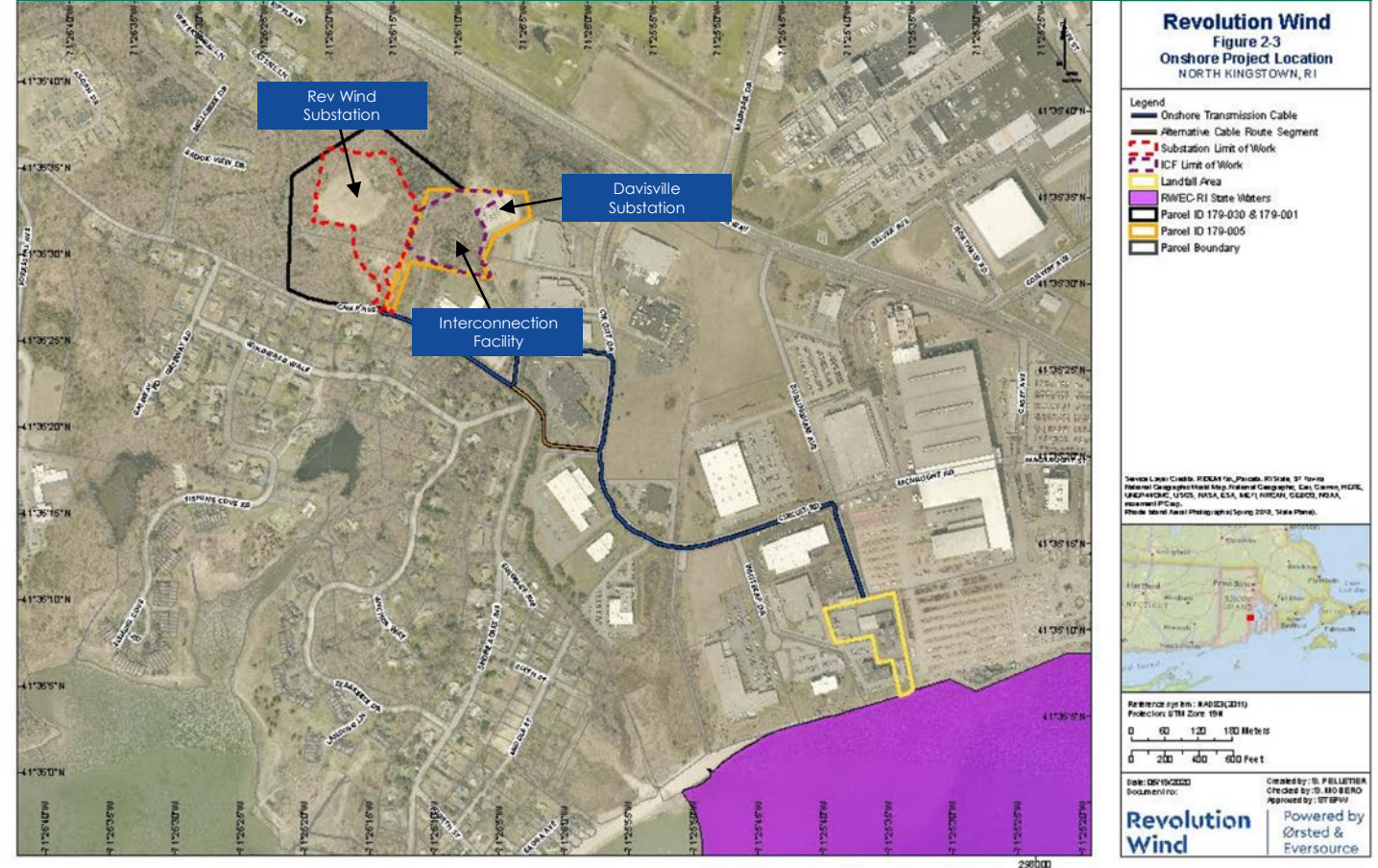
Transmission Line and Onshore Substation

- One mile of underground transmission line will connect the new onshore substation with the landfall cable.
- The substation and interconnection facility will be constructed near and connected to National Grid's existing Davisville Substation.

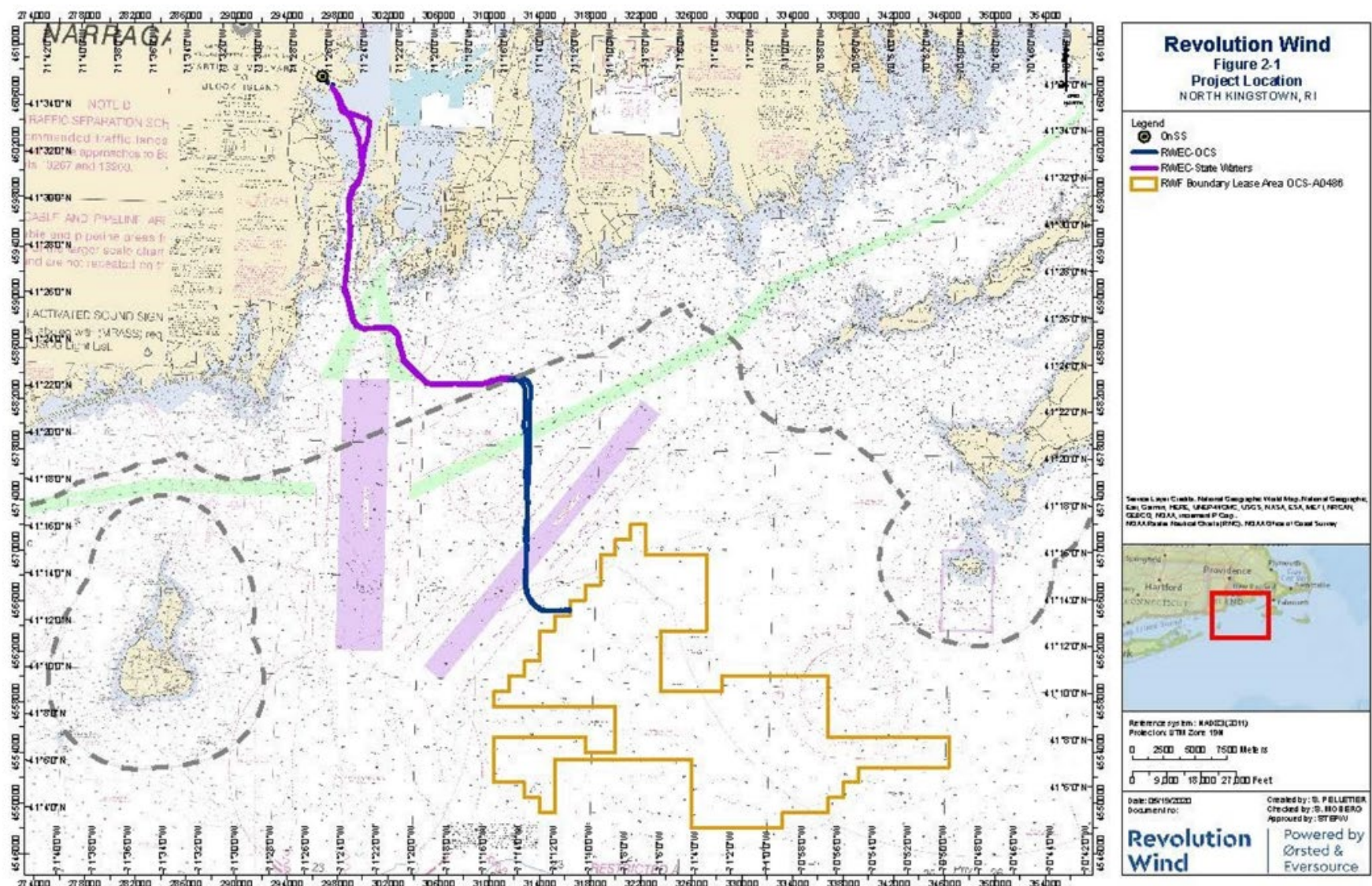
Interconnection Facility

- Six-breaker ring bus
- Reconfiguration of existing overhead lines

Onshore Cable Route



Cable Route Chart



RI EFSB Jurisdiction

Revolution Wind Export Cable-Rhode Island:

- Two 23-mile submarine export cables collocated in a single corridor running from the federal waters to the Onshore Transmission Cable, including two transition joint bays

Onshore Transmission Cable

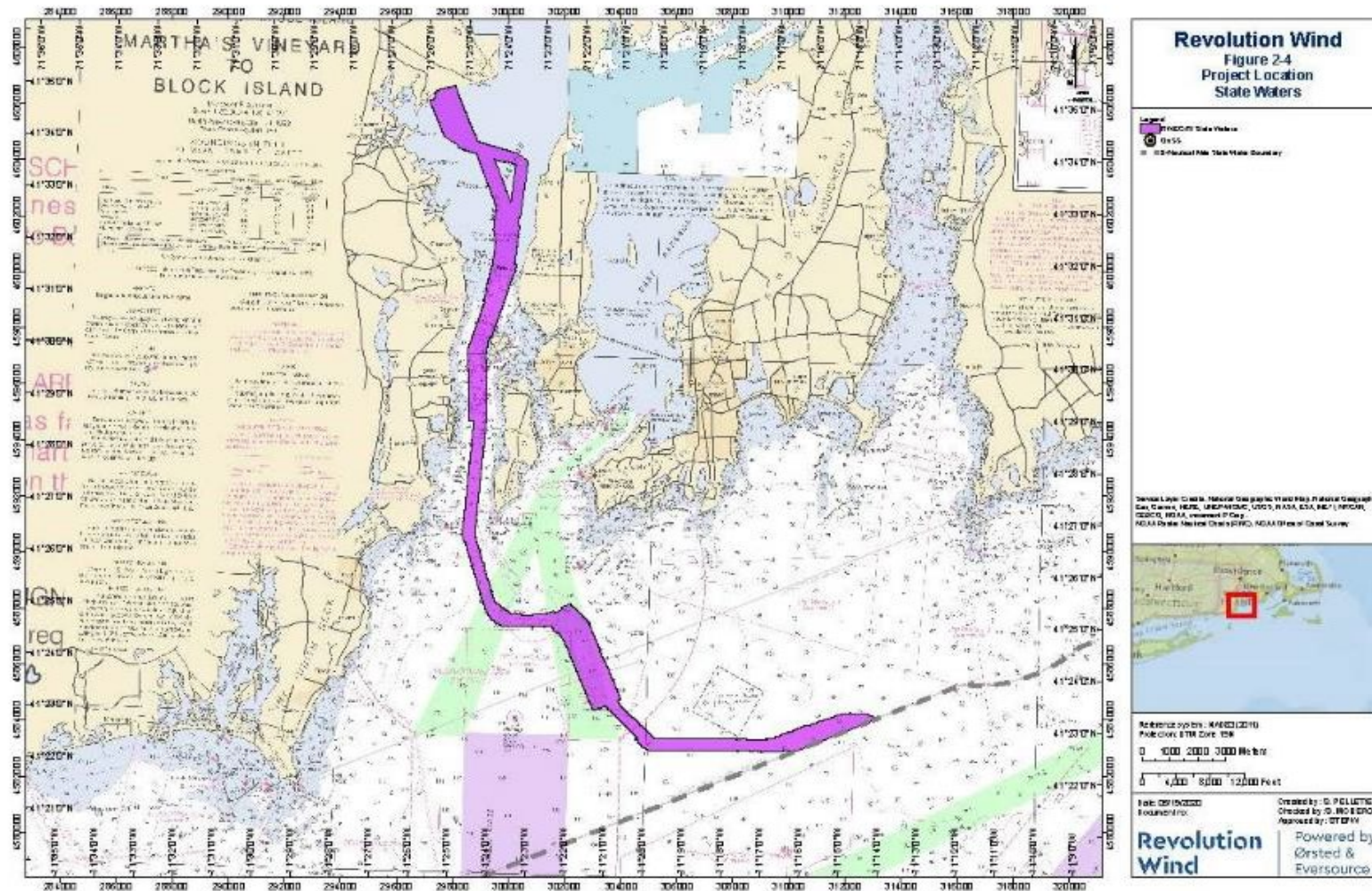
- Two new underground, 1-mile 275-kV, high voltage alternating current transmission lines in a single duct bank between the landing location and the Onshore Substation

Onshore Substation

- Located proximate to the existing Davisville Substation, which is owned and operated by The Narragansett Electric Company d/b/a National Grid ("TNEC")

Interconnection Facility

- Expansion of the 115kV side of TNEC's Davisville Substation to a 115-kV six-breaker ring bus configuration (the "Interconnection Facility")
- Two new 519-foot underground high voltage transmission lines between the new Onshore Substation and the Interconnection Facility



Refinement of Project Scope

- ROUTING ANALYSIS: ONSHORE CABLE ROUTE
- LANDFALL METHOD: HORIZONTAL DIRECTIONAL DRILL



Routing Analysis: Onshore Cable Route

- Reduced length
- Improved traffic management
- Supportive landowners



Landfall Method: Horizontal Directional Drill

- Site-specific Geotechnical investigations revealed:
 - A trenchless installation is feasible.
 - Fine sediments at landing location would result in a large open cut footprint.
- The project will adopt a trenchless installation method.



Project Need

- Developed in response to Request for Proposals for clean energy procurement required by ACES statute.
- Part of renewable energy portfolio for RI to meet goals of Energy 2035.
- Needed for RI to meet ambitious goal of procuring 1,000 MW of renewable energy by 2020 and converting Rhode Island to 100% renewable energy by 2030.
- Needed to meet requirements of Resilient Rhode Island Act.
- Improves energy system reliability and state and regional energy security.



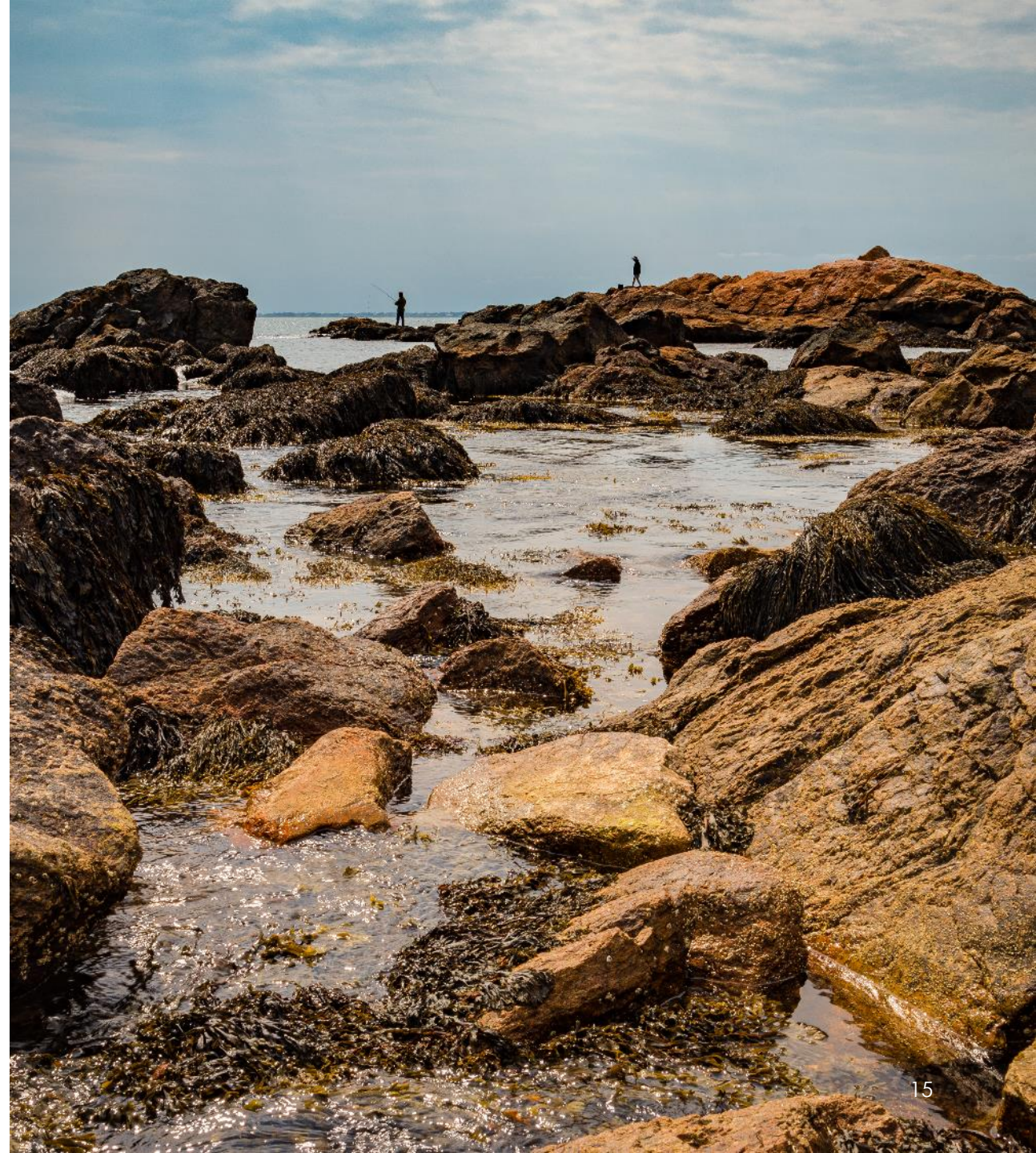
Cost Justified

- Cost of energy established in the PPA approved by RI PUC.
- Costs of construction, operation, and maintenance will not impact costs to customers.



Enhancing the Socio-economic fabric

- ✔ Thousands of estimated direct, indirect, and induced jobs for Rhode Island during construction.*
- ✔ More than 200 estimated direct, indirect, and induced jobs for Rhode Island during operation.
- ✔ \$40 million investment in Rhode Island port infrastructure.
- ✔ Enhance economic competitiveness through reduced energy costs.
- ✔ Improve overall quality of life by supporting the sustainability of the natural environment.



Federal Permitting Process

Federal agencies under the National Environmental Policy Act (NEPA)

Bureau of Ocean Energy Management (BOEM) – Construction and Operations Plan (COP)

U.S. Army Corps of Engineers – Section 10/404 Individual Permit

U.S. Coast Guard – Private Aids to Navigation Permit & Local Notice to Mariners

U.S. Environmental Protection Agency – OCS Air Permit

Federal Aviation Administration/Department of Defense – Consultation

NOAA Fisheries/U.S. Fish and Wildlife Service – Consultation & Incidental Take Authorization



NOAA
FISHERIES

BOEM
BUREAU OF OCEAN ENERGY MANAGEMENT



US Army Corps
of Engineers®



State and Local Permitting Process

Rhode Island State Waters and Onshore

RI Coastal Resources
Management Council
(RI CRMC)

RI Department of
Environmental
Management (RIDEM)

RI Energy Facility Siting
Board (RI EFSB)

Quonset Development
Corporation (QDC)

Town of North
Kingstown, RI

Community Engagement

Our Process:

- Building a wind farm is a complex process.
- Extensive stakeholder input is essential.
- We are committed to working with the communities in which we operate.

**Local
Communities**

**Elected
Officials**

**State &
Federal
Agencies**

Fisheries

**Native
American
Tribes**

**Public Interest
Groups**

**Environmental
Organizations**

**Business &
Industry
Associations**

Media

Environmental Analysis

- Multi phase approach of extensive investigations and surveys both offshore and onshore.
- Any adverse impacts will be avoided or minimized through mitigation and all applicable environmental laws and regulations will be followed.



Onshore Environmental Analysis

Environmental Analysis

- Geology and Soils
- Surface Water and Groundwater
- Vegetation
- Wetlands
- Wildlife and Threatened and Endangered Species
- Air Quality

Social and Economic Analysis

- Population
- Employment and Economic
- Land Use
- Visual Resources
- Noise
- Transportation
- Cultural Resources
- Safety and Public Health
- Electric and Magnetic Fields



Resource Management During Construction and Operation

- Compliance with RIDEM Remediation Regulations and a project specific Soil Management Plan.
- Compliance with the RIDEM Soil, Erosion and Sediment Handbook.
- Avoidance, minimization and mitigation of effects to identified sensitive resources.

Offshore Environmental Analysis

Environmental Analysis

- Geology
- Surface Water
- Submerged Aquatic Vegetation
- Fisheries and Marine Mammals
- Air Quality

Social and Economic Analysis

- Noise
- Transportation
- Cultural Resources
- Electric and Magnetic Fields



Fisheries Considerations

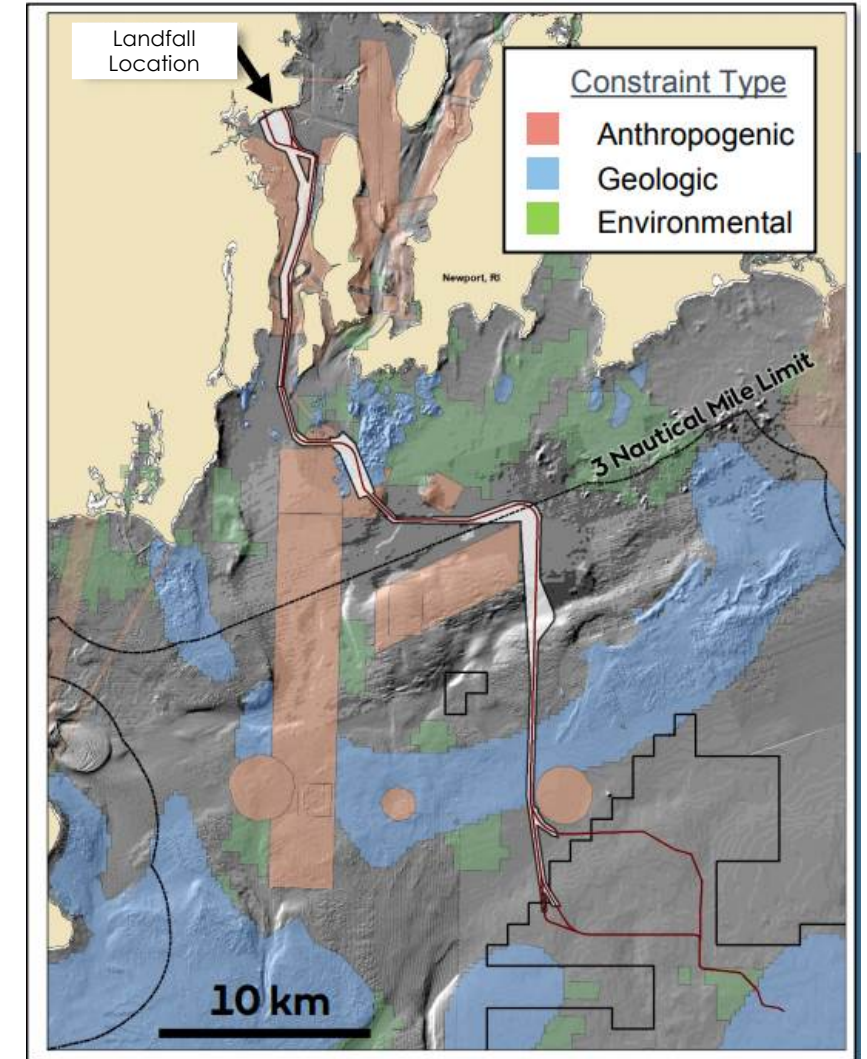
- Activity based on best available data and engagement with stakeholders.
- Cable under sea floor resulting in no impacts in cable corridor.

Offshore and Onshore Routing

Cable Routing Considerations

A multi-phased approach to evaluate siting alternatives for the project that included the potential grid interconnection points, onshore substation and onshore and offshore cables.

- Balances the environment, both developed and natural, constructability, cable length, property availability, ensures reliable functioning of the facilities and construction schedules with input from stakeholders
- Route avoids/minimizes overlap with anthropogenic, geological, and sensitive environmental resources.



Advisory Opinion Suggestions

Public Utilities Commission

Division of Statewide Planning

Office of Energy Resources

Department of Environmental Management

Quonset Development Corporation

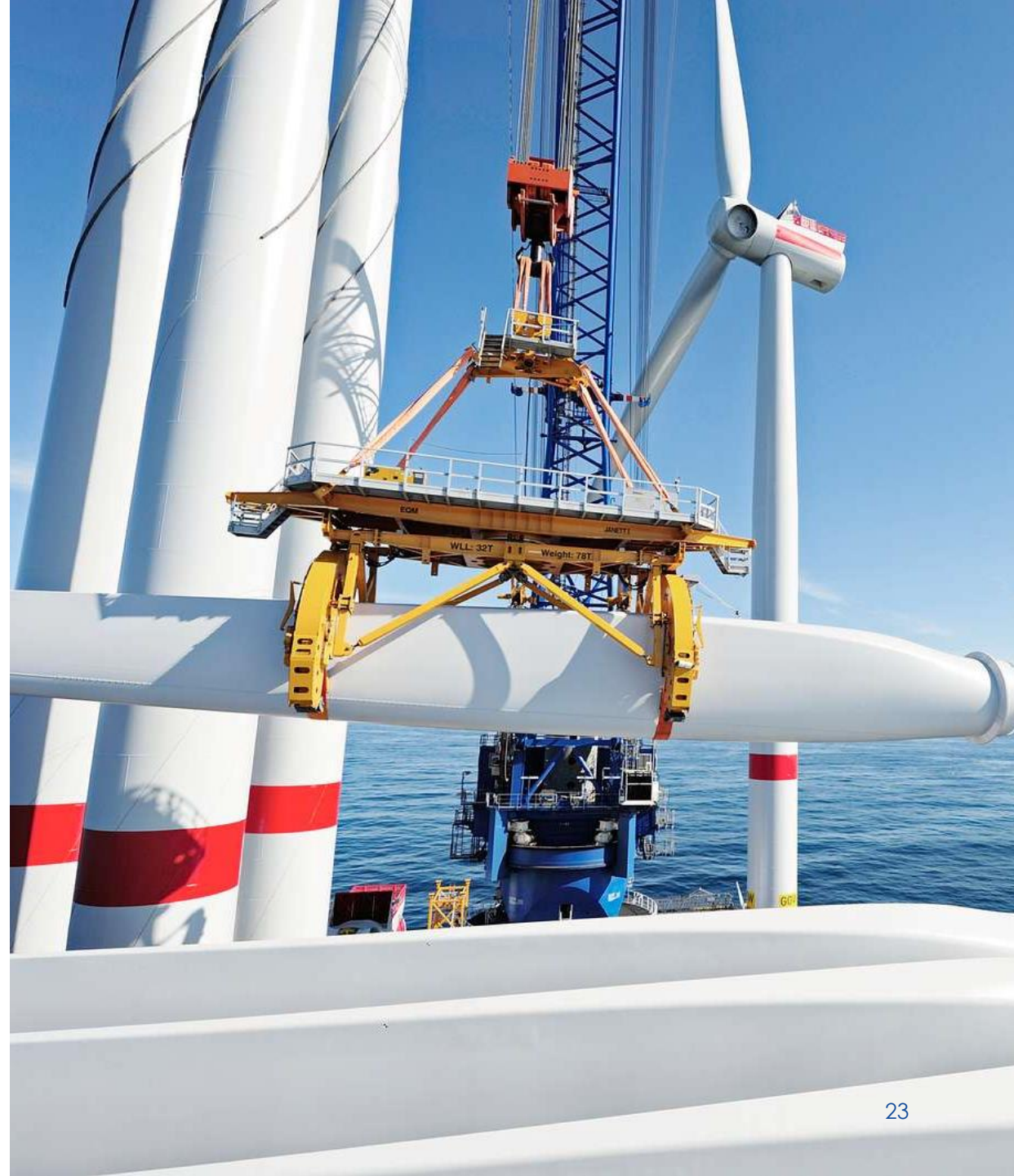
- Development Plan Review
- Variance Approval

Town of North Kingstown

- Variance Approval – Town Planning Commission
- Street Opening Permits – Department of Public Works

State Building Code Commission

- Building Permit (Substation and Interconnection Facility)





THANK YOU!

Questions?

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