MA CZM Coastal Conference

Wednesday June 6, 2018
OWNERS AND PARTNERS

LOCAL EXPERTISE, WORLD WIDE EXPERIENCE, TECHNICAL + FINANCIAL CAPABILITY

- Leading provider of renewable power in the United States
  - More than 6,500 MW of owned and operated facilities in 22 states.

- Part of Iberdrola, the world leader in the renewable energy industry (30+ GW in operation)
  - 10 GW of offshore wind under development, construction, or operations.

- Long-term, clean energy investment focus with 6,000+ MW offshore development portfolio in North America, Europe, Asia and Australia

- Executive team has extensive offshore wind experience: First projects, largest projects, most recent projects

- Local, non-profit partner: mission of more, community oriented renewable energy projects

- Provides real community participation in project:
  - Closely involved in day-to-day development activities
  - Provides guidance regarding important local issues
  - Identifies opportunities to benefit local communities

June 2018
Turbine Site Identified by Multi-Year Stakeholder Process

- **BOEM – Federal Process**
  - 2010 BOEM Task Force
    - Local government representatives
    - Multiple stakeholder meetings
    - Habitat and fisheries working groups
  - 2011: Request for Interest
  - 2012: Environmental Assessment & Call for Information
  - 2014: Lease Sale Notices
  - 2015: Auction and Lease issuance

- **Massachusetts Policy**
  - Energy Diversity Act of 2016
    - Utilities procure total of 1600MW of offshore wind

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**Massachusetts Request for Interest Responses**

- [Map showing the request for interest responses](image)

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*VINEYARD WIND*

*June 2018*
Project Context and Background

- Vineyard Wind Lease area OCS-A 0501
- ~261 square miles
- Northern tip of Lease Area is ~35 miles offshore from Cape Cod, and ~14 miles south of Martha’s Vineyard and Nantucket
- Study and analysis began as soon as lease acquired in 2015
  - Building on earlier consultations by project and Vineyard Power
  - Offshore environmental geological surveys in 2016 and 2017 and summer 2018
  - Meteorological buoy deployed in May 2018
GRID CONNECTION

- Nearest suitable existing substations are in Barnstable
- Minimizes amount of cable installed
- No changes to existing transmission system will be required
- Connection location enhances grid reliability by providing power at edge of grid system
SCHEDULE AND CONSTRUCTION

• **On-shore construction scheduled start:** Late 2019

• **Construction finished ("COD"):** End of 2022 - 800 MW

• **Minimize anchoring:** Installation primarily with dynamic positioning and/or jack-up barges
PROJECT LAYOUT

Turbines

- Fixed locations
- Spare locations
- Micro-siting expected
- 106 total (including spares)

Electric Service Platforms (ESP)

- Per 400 MW:
  - 1 traditional ESP
  - Or two lightweight ESPs
- 2 locations total
- Lightweight ESPs will be co-located
OFFSHORE CABLE CORRIDORS

- Two possible corridors: only one will be used
  - Multiple options through Muskeget Channel
  - Landfall location
  - 2017 & 2018 offshore studies inform selection

- Routing
  - Considerations include water depth, bathymetry, sensitive habitat areas, etc.
  - Avoidance of mapped eelgrass beds
  - Minimization of potential impacts to hard/complex bottom areas

- Installation via jet-plow, plow, or mechanical trenching
  - Up to three cables in single 810m corridor
  - Target burial depth = 5 to 8 feet (1.5 to 2.5 m)
  - 6-foot-wide swath affected by trenching
  - Where sand waves are present, dredging will be used to achieve target burial depth

June 2018
PERMITTING PROCESS: General Overview

Review universe of technical options and locations

Define project envelope

Submit federal and state applications

Federal

- ACOE
- EPA
- BOEM
- USCG
- NMFS
- FAA

COP

NEPA Scoping

DEIS

FEIS

Record of Decision

Facilities Design Report & Fabrication Installation Report

National Environmental Policy Act
Endangered Species Act
National Historic Preservation Act
Migratory Bird Treaty Act
Magnuson-Stevens Fishery Conservation Management Act
Marine Mammal Protection Act
Coastal Zone Management Act
Clean Air Act

State

- MEPA
- ENF
- Scoping
- MEPA Cert.
- DEIR
- DEIR Cert.
- FEIR
- Final MEPA Cert.
- Cape Cod Commission & MV Commission
- Town Conservation Commissions
- Town Road Opening

State Permits (including):
Chapter 91
401 WQC
Highway
Railroad

EFSB

CZM / CRMC
PERMITTING PROCESS:
High Level Status

**Federal**
- ACOE
- EPA
- BOEM
- USCG
- NMFS
- FAA

**State**
- MEPA
- ENF
- CZM / CRMC

**Scoping**
- NEPA Scoping
  - DEIS
  - FEIS
  - Record of Decision

**Facilities Design Report & Fabrication Installation Report**

**National Environmental Policy Act**
- Endangered Species Act
- National Historic Preservation Act
- Migratory Bird Treaty Act
- Magnuson-Stevens Fishery Conservation Management Act
- Marine Mammal Protection Act
- Coastal Zone Management Act
- Clean Air Act

**State Permits (including):**
- Chapter 91
- 401 WQC
- Highway Railroad

**Cape Cod Commission & MV Commission**

**Town Conservation Commissions**

**Town Road Opening**

**Begun**

**Complete**
WIND TURBINE GENERATORS

- 8 – 10MW WTG
- Rotor size of 164-180 m (538-591 ft)
- Hub height of 109-121 m (358-397 ft)
FOUNDATIONS

- 100% Monopiles or 50% Monopiles & 50% Jacket
- Scour protection at each location
  - Total footprint in wind farm area 0.4%
- Noise mitigation during pile driving
- Protected marine species (marine mammals & sea turtles)
  - Clear exclusion zone before initiation of pile driving
Contact Details

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For the latest project information please visit
www.vineyardwind.com
ACTIVE CONSULTATION WITH FISHERMEN

Early and on-going engagement with fishing community

• **Most important**: On-going participation in working groups and individual/small group meetings
  - Detailed and candid conversations
  - Logistically easier to arrange (more of them, less difficult to participate)

• **Construction studies**: Agreement with SMAST for pre- and post-construction fishery studies
  - SMAST will consult with fishing industry, regulators and academia - on what should be studied
  - Data will be publicly available

• **Transparent plan**: Active and continuously updated fisheries communication plan reviewed by regulators, fishermen and fishing organizations (and on website)

• **People facilitate communication**: Fishery Liaison (FL) and Fishery Representatives (FR)
  - First Fisheries Representative in the nation for offshore wind (2010)
  - Full-time Fisheries Liaison (May 2018)
  - Always seeking to expand FR network

• **Taking communication into action - Continuous Improvement**:
  - Changes to project design already made, and more under consideration
  - Ready to participate, e.g. central clearinghouses for fisheries information and gear loss/damage compensation
Outreach Ongoing

Includes over 100 meetings with fishermen and fishing organizations to date

- Alliance to Protect Nantucket Sound
- Association to Preserve Cape Cod
- Cape and Islands Self-Reliance
- Cape and Vineyard Electrical Cooperative
- Cape Cod Fishermen’s Alliance
- Cape Light Compact
- Climate Action Business Association
- Coalition for Social Justice
- Conservation Law Foundation
- Coonamessett Farm Foundation
- Eastern Fisheries
- Environment Massachusetts
- Environmental Business Council of New England
- Environmental League of Massachusetts
- Hercules SLR
- Long Island Commercial Fishing Association
- Martha's Vineyard Fishermen Preservation Trust
- Massachusetts Audubon Society
- Massachusetts Clean Energy Center
- Massachusetts Fisheries Institute
- Massachusetts Fisheries Working Group
- Massachusetts Fishermen’s Partnership and Support Services
- Massachusetts Habitat Working Group
- Massachusetts Lobstermen’s Association
- Nantucket Rotary Club
- National Academies of Sciences, Offshore Renewable Energy Development and Fisheries Conference
- National Wildlife Federation
- Natural Resources Defense Council
- New Bedford Harbor Development Commission
- New England Aquarium
- New England Energy and Commerce Association
- New England Fishery Management Council
- Northeast Fisheries Sciences Center
- Northeast Fishery Management Council
- Northeast Fishery Sector Managers X, XI, XIII, VII, VIII
- Port of New Bedford
- Recreational Fishing Alliance
- Rhode Island Fishermen’s Advisory Board
- Rhode Island Habitat Advisory Board
- Scallop Industry Advisors Meeting
- Sierra Club
- Stoveboat - Saving Seafood
- The Nature Conservancy
- Town Dock
- University of Massachusetts (various campuses)
- Woods Hole Oceanographic Institute