New England Aqua Ventus I Update

Island Institute
Island Energy Conference

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Project Description

Demonstration-scale offshore wind project located ~2.5 miles south of Monhegan Island, Maine and ~12 miles off the mainland

- One of the first floating offshore wind projects in the United States.
- Two 6.0 MW wind turbines on floating concrete foundations.
- Interconnection to an existing Central Maine Power distribution line located in Port Clyde.
- Proposed additional interconnection to Monhegan Plantation Power District on Monhegan Island.
Turbines and Foundations

Turbines:
- Turbine Hub Height: ~328 feet above waterline
- Blade Height: ~576 feet above waterline
- Rotor diameter: ~495 feet
- Turbine would be painted white
- 3–4 chain mooring lines and 3-4 anchors per structure

VolturnUS Floating Foundation:
- Reinforced concrete with three columns forming a tri-float configuration (semi-submersible)
- Extend ~66 feet below waterline
- Extend ~44 feet above waterline
- Diameter of foundation: ~301 feet
- Flashing lights in accordance with U.S. Coast Guard navigation requirements
Patent-Pending Hull Technology
Serial Production using 5 Concrete Modules Types.
Monhegan Site Selection Process
https://umaine.edu/offshorewindtestsite/

Why Monhegan Island Test Site?
State Legislation LD 1465
- Established Permissible Usage
- Established Permitting Conditions

Monhegan Test Site
- Furthest offshore and deepwater water = stronger and more consistent winds
- Limited number of fishermen
- Highest energy cost = Potential economic benefit

Test Site Statute LD 1465
Limit on Devices - each requires a permit
- Total 2 wind turbines per project
- Up to three meteorological devices (i.e. GoMOOS buoy, LIDAR Buoy)

Limit on cable size, max 25 MW (will be 12 MW)
There is no “Restricted zone” in test site
DMR, Coast Guard, other agencies regulate
Limited time permit - requires renewal
- Environmental Monitoring Requirements
- Financing & Decommissioning Requirements
Cable Landing Locations

Port Clyde, Maine
- Export cable would interconnect with existing Central Maine Power (CMP) distribution line.
- Landfall Point – Still evaluating – including municipal locations
- CMP plans to rebuild ~8.8 miles of distribution line between Port Clyde and Rockland substation.
Pre-deployment Environmental Studies

Extensive ecological, geotechnical, and cultural studies have been completed and are planned:

- Benthos: 2010-13, 2015
- Fish: 2010-15
- Marine Mammals: 2010-15
- Birds: 2010-15
- Bats: 2010-13, 2015
- Terrestrial: 2014
- Aesthetics/Visual: 2013

Ecological surveyor deploying equipment for surveys, 2012.
Community Benefits

- Maine Public Utilities Commission approved PPA term sheet included:
  - MAV Power Provision – Cable, 340 Mwh/yr free power, bundled fiber-optic, for life of project ~20 years, or
  - “Alternative Benefit” to meet Monhegan needs

- Monhegan Community Benefits Agreement Committee
  - Assessing and sharing Monhegan’s needs
  - Evaluating and valuing options
  - Negotiating CBA with MAV
  - Spring 2017
Selected Milestones:

2016-2017 Complete 100% project design as well as construction, operation & maintenance plan, grid interconnection and permitting.

Feb. 2017 US DOE NEPA public scoping sessions

Spring 2017 Conduct additional ecological studies needed for permitting – i.e. cable survey

Spring 2018 Start VolturnUS concrete hull construction, on land, in Hampden

Spring 2019 Install anchors and subsea electrical cable at test site

Fall 2019 Install floating hull/turbines at test site