DOE Selection Process

DOMINION
2 x 6MW, IBGS foundations, Federal waters off Virginia

FISHERMEN’S ENERGY
5 x 5MW, Jacket foundations, New Jersey State waters

PRINCIPLE POWER
5 x 6MW, Floating semi-sub, Federal waters off Oregon

UNIVERSITY OF MAINE
2 x 6MW, Floating semi-sub, Maine State waters

BARYONYX
3 x 6MW, Jacket foundations, Texas State waters

LEEDCO
9 x 3MW, Icebreaking foundations, Great Lakes (Erie) off Ohio

STATOIL NA
4 x 3MW, Floating spar, Federal waters off Maine
Leading the Way Through Innovation

- Alstom Haliade 150 - 6 MW offshore wind turbine
  - LM 73.5-m GloBlade one of the largest in world
  - PureTorque™ and Permanent Magnet Direct Drive (PMDD) system

- Keystone Inward Battered Guide Structure
  - Innovative foundation uses less steel
  - Lowers installation cost/risk through the use of smaller vessels

- Systems Level Design
  - Hurricane-resilient design
  - Advanced controls maximize energy production

- Operations and Maintenance Strategies
  - PMDD and PureTorque™ design
  - Supervisory Control and Data Acquisition (SCADA) and Condition Based Monitoring (CBM)
Hurricane Resilient Design Features

- 135 kW diesel generators for uninterruptable yaw system power
- Rugged high velocity sonic anemometer and redundant controls
- Continuous yaw and control authority
- Substructure design to meet API RP 2A Hurricane Design Standards
- North Wind Turbine
- 6 MW ALSTOM Haliade 150 Offshore Wind Turbine (South Turbine)
- Keystone IBGS Jacket Foundation
Paving the Way for Offshore Wind on Hurricane-Prone Outer Continental Shelf

IBGS – Exxon Platform

Inner to mid-shelf depth range for fixed foundations

Nor’easter and hurricane design load case drivers

Source: National Renewable Energy Laboratory

Description:
Depicts annual average wind speed at a height of 50 m above the surface. Measured in meters/second.

- 7.00 - 7.49
- 7.50 - 7.99
- 8.00 - 8.49
- 8.50 - 8.99
- 9.00 - 9.49
- 9.50 - 9.99
- 10.00 - 10.49
- 10.50 - 11.00
## Planning for Success

### Project Development Major Tasks

<table>
<thead>
<tr>
<th>Permits Process</th>
<th>Engineering, Regulatory &amp; Construction</th>
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</thead>
</table>

### Near term activities:
- Geotechnical investigation & Design Basis update
- Research lease process ongoing
- NEPA review underway
<table>
<thead>
<tr>
<th>Activity</th>
<th>Schedule</th>
<th>Complete</th>
</tr>
</thead>
<tbody>
<tr>
<td>Received Lease</td>
<td>September 30, 2013</td>
<td>✔️</td>
</tr>
<tr>
<td>Paid bid balance</td>
<td>October 11, 2013</td>
<td>✔️</td>
</tr>
<tr>
<td>Provided financial assurance, and Dominion signed lease to BOEM October 11, 2013 with delivery on October 15, 2013</td>
<td>October 15, 2013</td>
<td>✔️</td>
</tr>
<tr>
<td>Submitted first lease payment (6-months of rent)</td>
<td>November 14, 2013 (within 45-calender days of lease receipt)</td>
<td>✔️</td>
</tr>
<tr>
<td>Submitted Site Assessment Plan (SAP)</td>
<td>May 1, 2014 (within 6-months of lease effective date)</td>
<td>✔️</td>
</tr>
<tr>
<td>Submitted Semi-Annual Progress Report during the 5-year lease assessment term along with second lease payment</td>
<td>May 1, 2014 (First report due within 6 months of lease effective date)</td>
<td>✔️</td>
</tr>
<tr>
<td>Submit Construction &amp; Operations Plan (COP) - Survey</td>
<td>November 1, 2014 (within 12-months of lease effective date)</td>
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</tbody>
</table>
May 1, 2014 – Dominion submitted a Site Assessment Plan (SAP) to BOEM for the deployment of metocean equipment, in accordance with 585.606, 610, and 611.

As stated previously, the SAP equipment includes:
- Floating Light Detection and Ranging (LiDAR) buoy
- Seabed-mounted acoustic wave and current (AWAC) sensor
- Surface following wave measurement buoy

Leverages SAP submitted to support the VOWTAP project
- Equipment re-located from VOWTAP to WEA once testing at the demo concludes in 2019 for LiDAR and 2022 for AWAC and wave buoy

Purpose of SAP is to collect and analyze:
- Wind Speed and direction at multiple heights
- Waves
- Ocean current speed and direction
- Air Pressure
- Water temperature
- Water salinity
DMME issued a Request for Proposal (RFP) on February 5, 2014 to distribute up to $850,000 in State funds to further advance Virginia's competitive advantage in the offshore wind industry. Specifically, the funding was legislatively appropriated to:

“leverage private and federal funding for increased data gathering to give Virginia an advantage over competing states in attracting the offshore wind industry to Virginia”

Dominion responded on March 6, 2014 with options to increase the scope of currently planned/scheduled VOWTAP activities incrementally in the Commercial Lease Area

Dominion’s proposal was selected, along with three others. Specifically, Dominion was awarded $310,000 to advance two deep geotechnical borings in the Commercial Lease Area which leverages the borings being advanced to support VOWTAP.

Contract with DMME is executed and receipt of funds pending

Actively working with regulators to approve activities in a timely manner to allow use of state funds by the June 30, 2014 deadline

Kick-off meeting with DMME and four awardees on May 30, 2014
The Right Next Step for the Offshore Wind Industry