US MARKET PIPELINE GROWTH

The trends of sum of Megawatts and sum of Megawatts for Year.

Total Megawatts in United States

- 2014: 30 MW
- 2015: 50 MW
- 2016: 30 MW
- 2017: 456 MW
- 2018: 10,370 MW
- 2019: 16,970 MW
US PROJECTS INSTALLED BY 2023

<table>
<thead>
<tr>
<th>PROJECT</th>
<th>STATE</th>
<th>SIZE</th>
<th>DEVELOPER</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vineyard Wind</td>
<td>MA</td>
<td>800</td>
<td>CIP &amp; Avangrid Renewables</td>
</tr>
<tr>
<td>Revolution Wind</td>
<td>RI</td>
<td>400</td>
<td>Ørsted</td>
</tr>
<tr>
<td>Revolution Wind</td>
<td>CT</td>
<td>200</td>
<td>Ørsted</td>
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<tr>
<td>South Fork</td>
<td>NY</td>
<td>130</td>
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<tr>
<td>Skip Jack</td>
<td>MD</td>
<td>120</td>
<td>Ørsted</td>
</tr>
<tr>
<td>US Wind</td>
<td>MD</td>
<td>246</td>
<td>US Wind</td>
</tr>
<tr>
<td>Coastal VA OSW</td>
<td>VA</td>
<td>12</td>
<td>Dominion</td>
</tr>
<tr>
<td>Icebreaker</td>
<td>OH</td>
<td>30</td>
<td>LeedCO</td>
</tr>
</tbody>
</table>

TOTAL 1908
PRESENT PROJECT PIPELINE

- **4.4 GW**
  - off-take agreements by 2019

- **19 GW**
  - by 2035

**32%**
- Reduction in energy costs for offshore wind since 2012

16 **new**
- US wind energy areas potentially equalling 21GW

**13¢**
- Maryland offshore wind price

**6.5¢**
- Massachusetts offshore wind price
GENERATOR LEAD LINE

» Current Model for State OSW RFPs
» Bundled PPA Rates for Delivery of Energy
» FERC Order 807: 5-Year Period before OATT
  • Ability for “Voluntary Agreements”?
» Integrated RTO Interconnection Process
» BOEM Lease / Easement with Coordinated SAP, COP and NEPA Review for Transmission

» Facilitates Project Development, but:
  • Cost of Transmission Upgrades Falls on Project
  • No Incentive to Address Long-Term System Needs
MERCHANT OWNERSHIP

» Cost-Based /Participant-Funded Rate Recovery
   • Unclear if Current Proposals are “Merchant”
» Open Access: FERC’s Chinook Analysis & Final Policy Statement on the Allocation of Capacity
» Interconnection as an “Independent” Merchant?
» Need for Separate BOEM ROW & GAP Complicates the Coordination of Permitting & Construction

» Complicates Project Development
   • Who Bears Financial Risk: Project or Merchant?
   • Cost of Transmission Upgrades Falls on Project
   • No Incentive to Address Long-Term System Needs
TRANSCO OWNERSHIP

» RTO OATT & Cost Recovery Govern
  • RTEP or Order 1000 Public Policy Project?
  • Who Builds – Incumbent TSO or Merchant?
  • Ability to Achieve Stakeholder Consensus?

» Substantial Coordination Risk: Technology, Design, Permitting, Construction, In-Service Dates

» Could Facilitate Project Development, but:
  • Who Bears the Financial Risk?
  • Can Sufficient Consensus be Achieved in Advance to Address Short- and Long-Term Transmission System Needs?
PROPOSED OSW PORTS

Courtesy of Fred Olsen Wind Carrier