Building a Sustainable U.S. Offshore Wind Industry

Key Environmental Issues in US EPA Region 2
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The surprising state of offshore wind affairs
Offshore wind is thriving in Europe

114 new grid-connected offshore wind turbines in 4 wind farms
3,344 turbines are installed and grid-connected
4.8 MW average size offshore wind turbines
Work carried out in: 13 wind farms
NEW PROJECTS: 21.7 GW of consented wind farms
First U.S. Offshore Wind Project: Commercial Operation Started in December 2016
Overview of Block Island Project

• 30 MW demonstration project – five 6 MW turbines
• Installation for the foundation jackets for Block Island began in July 2015
• Turbines were installed in the summer of 2016 and the project commenced commercial operation in December 2016
• Benefits for Block Island
  – Replaces diesel fuel generators
  – Lowers electricity bills
  – All that, plus better Internet service!
• Key to success?
  – Starting small
  – Stakeholder outreach
  – Strong environmental/ecosystem values
U.S. Offshore Wind: Huge Potential Ready to Be Tapped
Recent Headlines

• Block Island 30MW Online 12/20/16
• Statoil winds lease off NY 12/20/16
• Gov Cuomo proposes 2,400MW 1/10/17
• Deepwater wind power purchase from LIPA (90MW) 1/25/17
• Avantgrid win lease off NC 3/17/17
• MD awards 2 projects (~400MW) 5/11/17
• MA utilities issue RFP (800MW) 7/5/17
• Dominion & DONG/Orsted to build 12MW off VA by 2020 7/11/17
• NYSERDA proposes 2 wind areas to BOEM (3,200MW) 10/2/17
• Cape Wind dead 12/4/17
• MA bids submitted 12/20/17
• NYSERDA releases Master Plan (2,400MW) 1/30/18
• RI begins 400MW solicitation 2/6/18
• NYPSC EIS and procurement comment period open (~800MW) 2/23/18
• NJ exec order for solicitation (1,100MW) 3/2/18
• 2 lease areas for sale off MA 4/12/18
• MA & RI select 2 projects (1,200MW) 5/23/18
• NJ Clean Energy Law signed (3,500MW) 5/23/18
• NY PSC procurement options comments due 6/6/18
OFFSHORE WIND AT-A-GLANCE

$4.9 MILLION
Annual Rent Payments Collected by BOEM

1.8 MILLION
Total number of acres leased to developers

$67 MILLION
Total Amount Paid to BOEM for Leases

CURRENT US OFFSHORE WIND PROJECT MAP AND TIMELINE

While it is still early days for steel in the water, the U.S. offshore wind industry is ripe with activity. The map and chart within offer a glimpse at where projects stand as of April 2018.

The data in this chart was collected from publicly available documents. Lease owners and project developers were asked to verify the information presented here.
NY Bight Call Areas: a key example of explosion of lease areas

New York Bight Call Areas and Area for Consideration

- BOEM Call Areas
- New York State Area for Consideration
- Offshore Study Area
- State/Federal Boundary - 3 nm
- Territorial Sea Boundary - 12 nm

NYSERDA
Lessons learned and challenges ahead

- Policy matters
- NY and NJ racing to the top
- The North Atlantic Right Whale is critically endangered
- Smart from the start will be faster
What Policies Do We Need to Build a Sustainable Offshore Wind Industry and Achieve Scale?

• Federal level
  • Congress:
    • Tax policy
    • Appropriations
  • DOI/BOEM:
    • Better, faster leasing and siting process
    • Making siting be “smart from the start”
    • Smart mitigation measures, e.g. North Atlantic Right Whale

• State level
  – Build environmental and stakeholder support
  – Smart ocean and ecosystem planning
  – Create state policies to spur demand and create a pipeline of projects
  – Smart procurement
  – Regional approaches
Case Study: Ensuring Protections for the North Atlantic Right Whale

- Agreements between NGOs and developers
  - Many benefits: protective, yet achievable by industry
  - *But not enforceable or uniform...*
- Discussions with federal gov’t and states:
- Need better ecosystems measures in:
  - Final lease terms
  - Site Assessment Plans
  - Construction and Operations Plans
  - PPAs

NRDC, NWF, & CLF meeting with BOEM in July 2015

NARW mother and calf, photo credit: NOAA
Achieving Scale: Are Speed and Sustainability in Conflict?

- What are the lessons from Cape Wind?
  - Hard to go First
  - Location, Location, Location
  - Failure or Success?
- Truncated NEPA review: not the solution
  - Litigation risk
  - Public backlash
  - Short cuts aren’t fast
- Smart from the Start:
  - Stakeholder outreach: early and often
  - Smart Planning
  - Build Success Stories
  - Sustainability Builds Long-Term Scale and Speed
The leasing and permitting process
EPA’s role in offshore wind

- Department of the Interior’s Bureau of Offshore Energy Management is dominant agency in offshore wind in federal waters
- EPA has 3 formal roles and 1 contextual role
- Formal roles:
  - EPA is a cooperating agency in NEPA process and formally reviews air impacts
    - Section 309 of the Clean Air Act
    - Environmental justice (under Executive Order 12898 - Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations)
  - EPA issues permits under the National Pollution Discharge Elimination System under Section 402 the Clean Water Act for upland transmission work requiring storm water discharge or under Section 404(b)(1) (40CFR 230) for wetland filling
  - EPA issues air permit under the Clean Air Act and Outer Continental Shelf Lands Act
    - Permits issues under Section 328(a)(1) of the Clean Air Act to achieve ambient air standards set under Part C of Title I of the CAA. Rules: 40 CFR Part 55
    - Also EPA designates a “corresponding onshore area” (COA) and permits to air regulations of that state(s) if it has delegated Part 55.
- Contextual role
  - Emissions and public health impact data
  - Social cost of carbon
Offshore wind promises big public health savings

Health and climate benefits of offshore wind facilities in the Mid-Atlantic United States

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Figure 2. Monetized public health and climate benefits of different offshore wind scenarios, by impact type and fuel type.