East Coast Offshore Wind

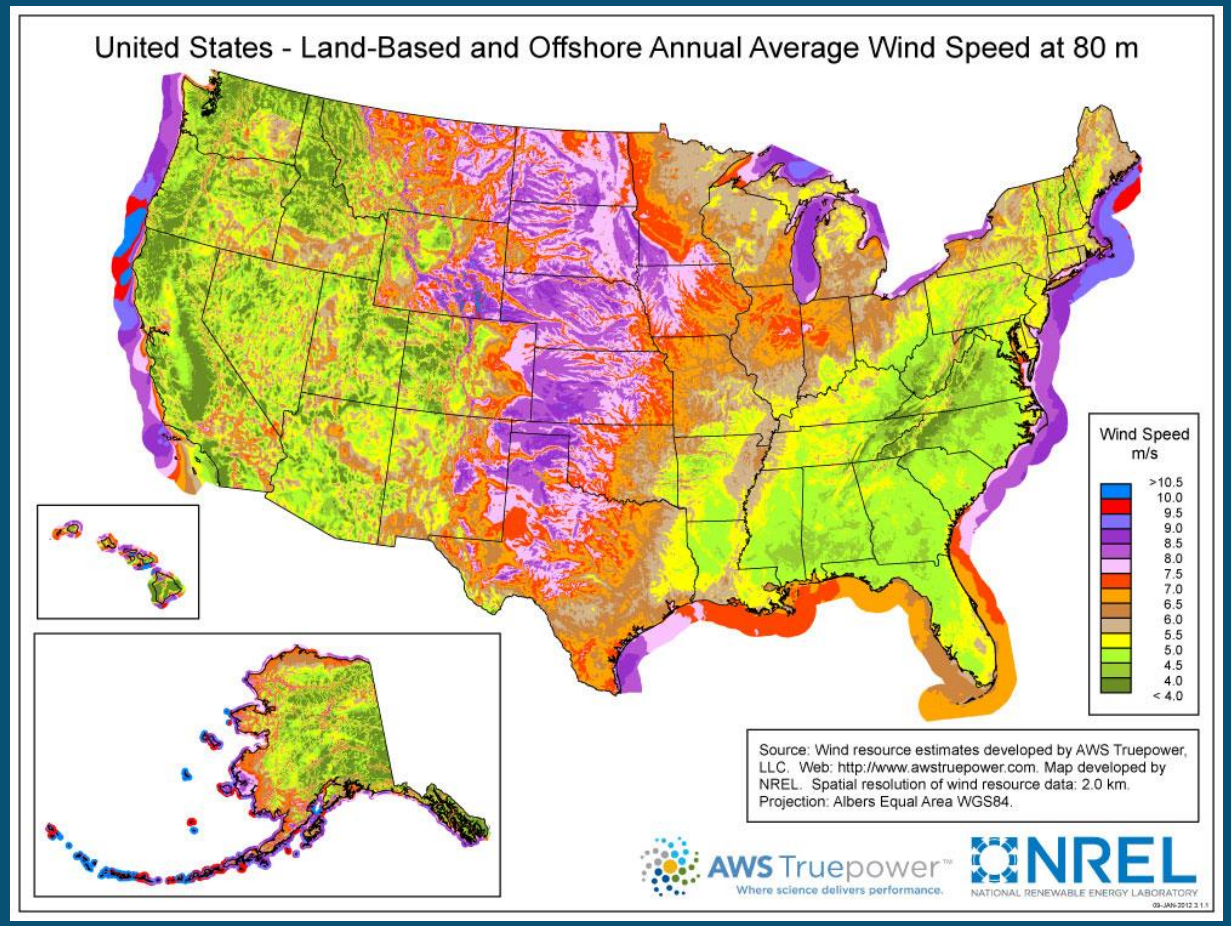
American Association of Port Authorities
Energy and Environment Seminar

East Coast Advantage

- Relatively shallow waters along gulf and mid-Atlantic are attractive for offshore wind using currently proven wind turbine technology
  - Deeper water on west coast requires floating technology, which needs more R&D before utility scale deployment
- High wind speeds along northeast Atlantic coast
- Excellent land based staging areas for construction
- Excellent land based maintenance and operation support
- Close to energy demand

Offshore Wind Speeds and Siting

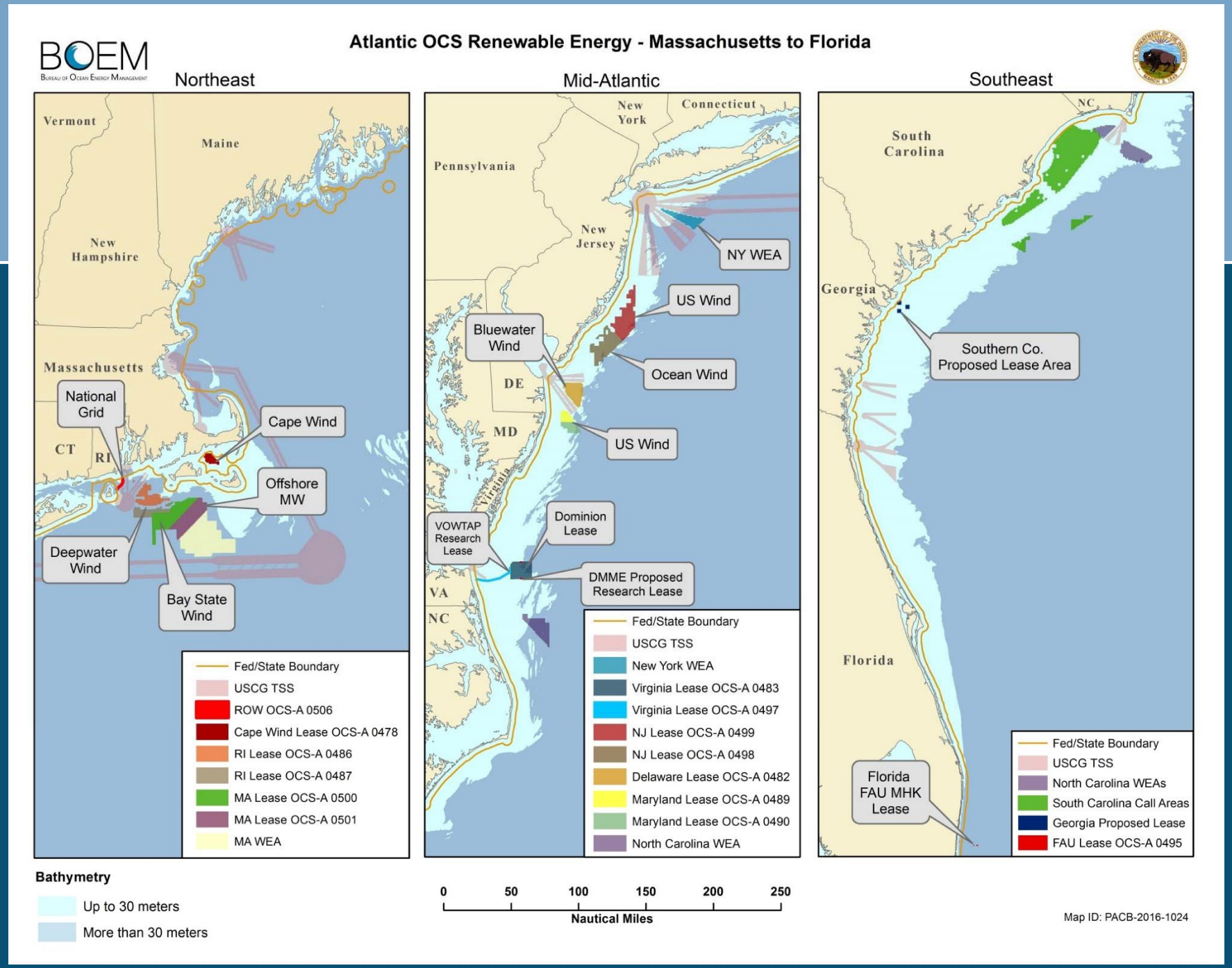
- Offshore wind speeds rival the best land-based wind speeds
- Can site power supply near the huge demand of east coast cities
- Siting turbines 12+ miles from the coast ensure no/low visibility from shore



Status of East Coast Project Development

- BOEM is the lead regulatory authority
- BOEM has issued 11 leases on the Easy Coast, with another lease sale expected for New York before the end of 2016
- No projects built in the US yet – over 25 projects in Europe operational, with the first project commissioned in 1991 – the US is far behind!

East Coast Offshore Wind Leases



Offshore wind developers to use largely empty New Bedford terminal

- Three offshore wind developers agreed to use terminal and port facility for their projects in the region
  - Deepwater Wind
  - Offshore MW
  - DONG Energy
- Developers agreed to pay $5.7M/yr to the Mass Clean Energy Center to use the 26-acre terminal as a staging ground for offshore construction

Offshore Wind & Ports – Perfect Together

- Offshore wind turbines are so large they cannot be transported over roadways
- Ports have the opportunity for significant economic development from offshore wind
- **Offshore wind needs ports and ports need offshore wind!**

Block Island Wind Farm

- Five 6MW turbines 3 miles from the coast of Block Island, Rhode Island
- Project developer – Deepwater Wind
- To be operational by end of 2016
- Significant activity for project at ProvPort
- First OSW project in the United States

Proactive Stakeholder Outreach

- Stakeholder outreach is vital to offshore wind projects
- Famed and faltered Cape Wind Project suffered due to lack of early stakeholder outreach
- Project proponent, supply chain, ports, NGOs, Tribes – all interested parties need to be engaged early and often to ensure project success

Coast Guard Proposed Offshore Wind Guidance

- Coast Guard Atlantic Coast Port Access Route Study (March 2016)
- Recommended offshore wind projects be at least two nautical miles away from shipping lanes
- Recommended five nautical miles from port access areas
- Would significantly cut into the 22 gigawatts (GW) of offshore wind the DOE estimated could be deployed in the U.S. by 2030
- New York Port Authority has indicated the buffer zones could eliminate half of the 81,000 acres BOEM proposes to lease off the coast of New York
- Deepwater Wind LLC, has warned the setbacks could eliminate 20% of the North Lease area offshore Rhode Island and Massachusetts
- The Coast Guard is rethinking their guidance

In Summary

- Offshore wind will play a significant role in helping the US reach it's clean energy goals and energy demands
- Offshore wind is an established technology in Europe with over 25 wind farms in operation and a dozen more in development in 2016
- Ports play a critical role in the development of the industry and should ready themselves for an influx of projects over the next decade and beyond
- Offshore wind turbines are so large they cannot be transported by over roadways – offshore wind needs ports, and ports need offshore wind!

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