

Commonwealth of Massachusetts

Executive Office of Energy and Environmental Affairs

Scaling Up Off-Shore Wind

September 27, 2019

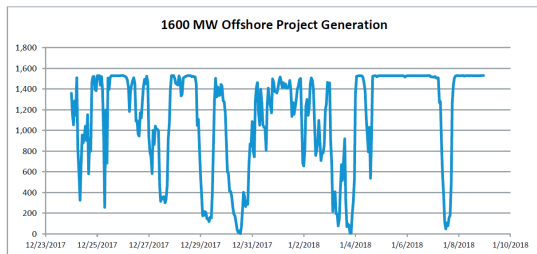
Patrick Woodcock
Undersecretary of Energy



Scaling up Offshore Wind – Industry Momentum

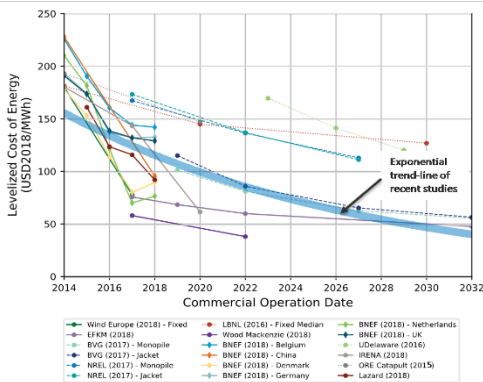
Offshore Wind – Fundamentals

Estimated Offshore Wind Production for MassCEC 1600 MW Project Scenario Based on Wind Speeds Recorded from December 24, 2017 through January 8, 2018 (MW)



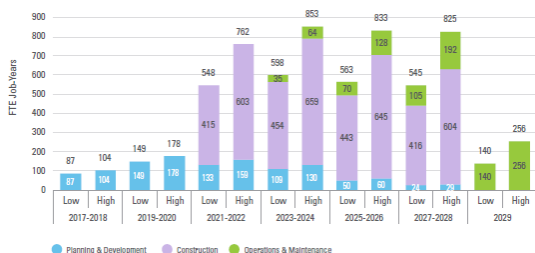
- Capacity Factor/Winter Coincidence.** Increased capacity factor with larger turbines coupled with high production in winter. High level ISO model indicated roughly 70 percent capacity factor during the 16 day cold snap in 2017-2018. Resource can meaningfully contribute to energy security challenges.

- European Market Development.** “The reductions in the levelized cost of offshore wind energy since 2014 have been aided by technology improvements in energy capture, reduced capital expenditures, the advent of larger turbines, competition in international markets, and reduced international lending rates, among many other factors.”

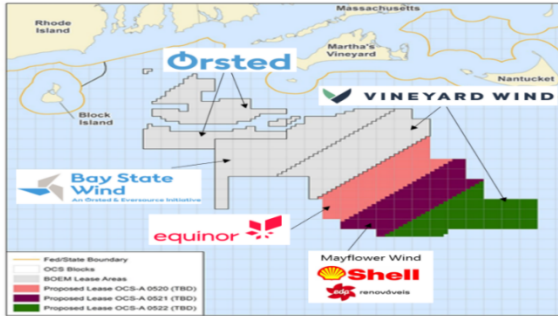


- Economic Development Opportunity.** Construction activity related to the deployment of 1,600 MW of OSW is estimated to create between 2,279 and 3,171 direct jobyears. In total, construction activities are estimated to support between 6,878 and 9,852 job-years, which includes direct, indirect (supply chain), and induced impacts.

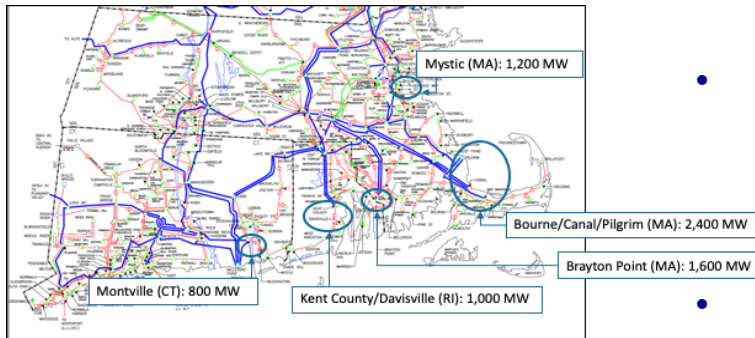
JOB-YEARS 2017-2029: LOW AND HIGH SCENARIOS



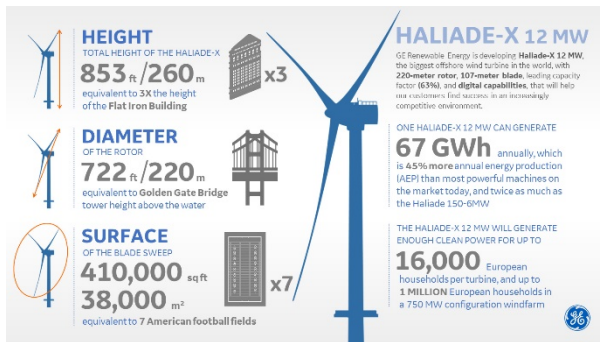
Offshore Wind – Fundamentals (Part 2)



- **Lease Sites/Global Leadership.** Lease areas have ideal water depths, location to interconnection points, and have attracted globally leading offshore energy companies.



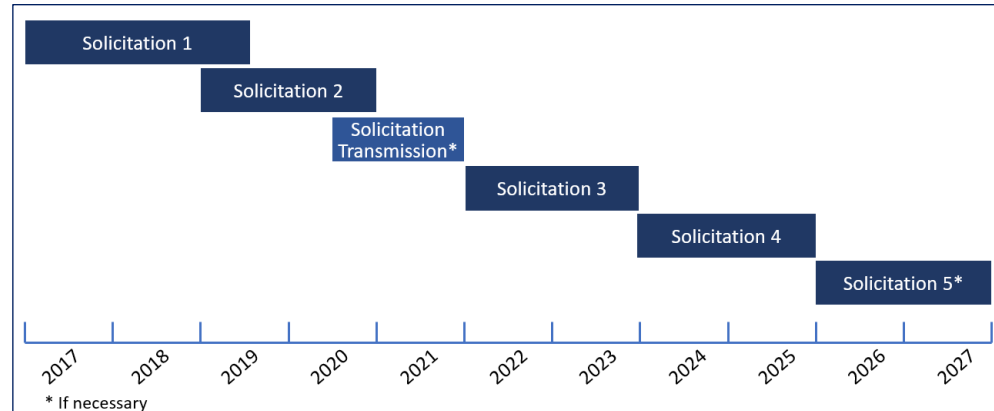
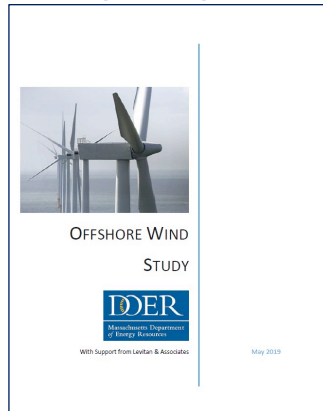
- **Interconnection Points.** Short-term opportunities for interconnection into the transmission system (Brayton Point, Bourne/Canal Pilgrim, Kent County, and Montville).



- **Research and Development.** Capacity factors and scale continue to disrupt cost assumptions and has the potential to minimize the footprint of turbines. Companies continue to dedicate R&D budgets for new technology for offshore wind.

DOER Study on Offshore Wind

- In May, DOER released the results of the offshore wind study and recommended procuring an additional 1,600 MW of offshore wind per “An Act to Advance Clean Energy of 2018.”
 - 1,600 MW of offshore wind is 6,000,000 MWh energy annually or 15% of total EDC demand;
 - With an additional 1,600 MW of offshore wind over half (~60%) of the EDCs electricity load will be supplied through long-term contracts instead of the wholesale competitive markets.

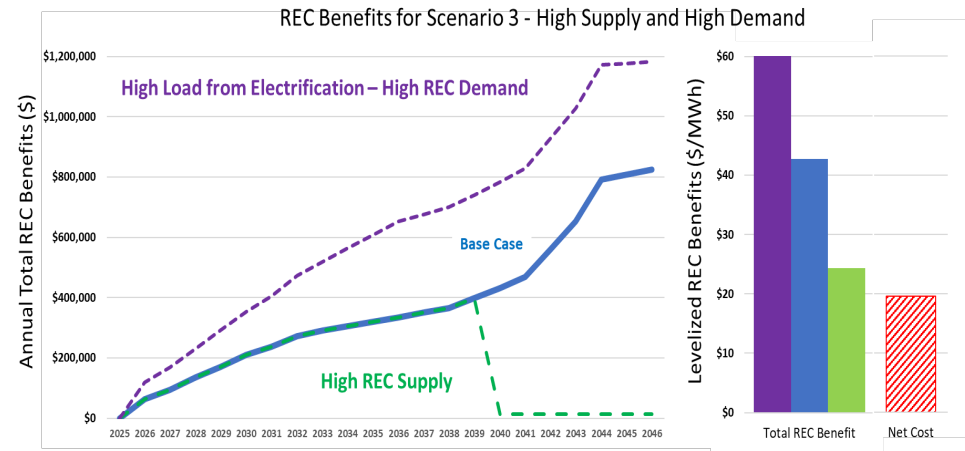


- › **Authorizes Solicitations.** Recommends the EDCs proceed with an additional 1,600 MW of offshore wind generation solicitations in 2022 , 2024, and (if necessary) 2026 and that it could lead to cost-effective projects.
- › **Assesses Independent Transmission.** Raises the potential for an independent transmission solicitation in 2020-2021.
- › **Recommends Increased Competition.** The Legislature should authorize DOER to assess whether there would be benefits of including other clean resources -- Class I renewable resources, hydroelectric resources, etc. -- in future solicitations to expand competition and could also enable price cap to be lifted.

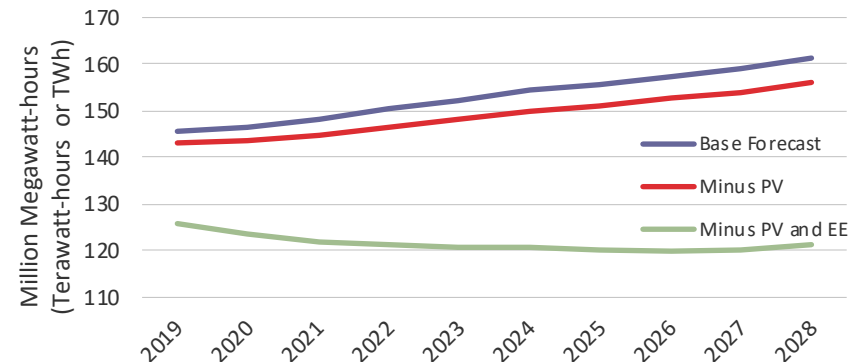


Cost-Effectiveness Dependent on RPS/CES Obligations

- › **Highly Variable Market.** The cost-effectiveness of any future contracts is highly dependent on future changes to the regional REC market;
- › **Electric Load Forecast.** If demand (and therefore higher RPS/CES compliance obligation) is higher than forecasted due to greater electrification of transportation and heating, the benefits of procuring offshore wind increases;
- › **State Policy Changes.** If REC supply increases more than forecasted due to changes in other states renewable policies, then the benefits of procuring offshore wind decreases.
- › **Other Mitigation Measures.** Compliance with GWSA through other measures (energy efficiency, transportation, etc.) will have to be comparatively evaluated going forward.

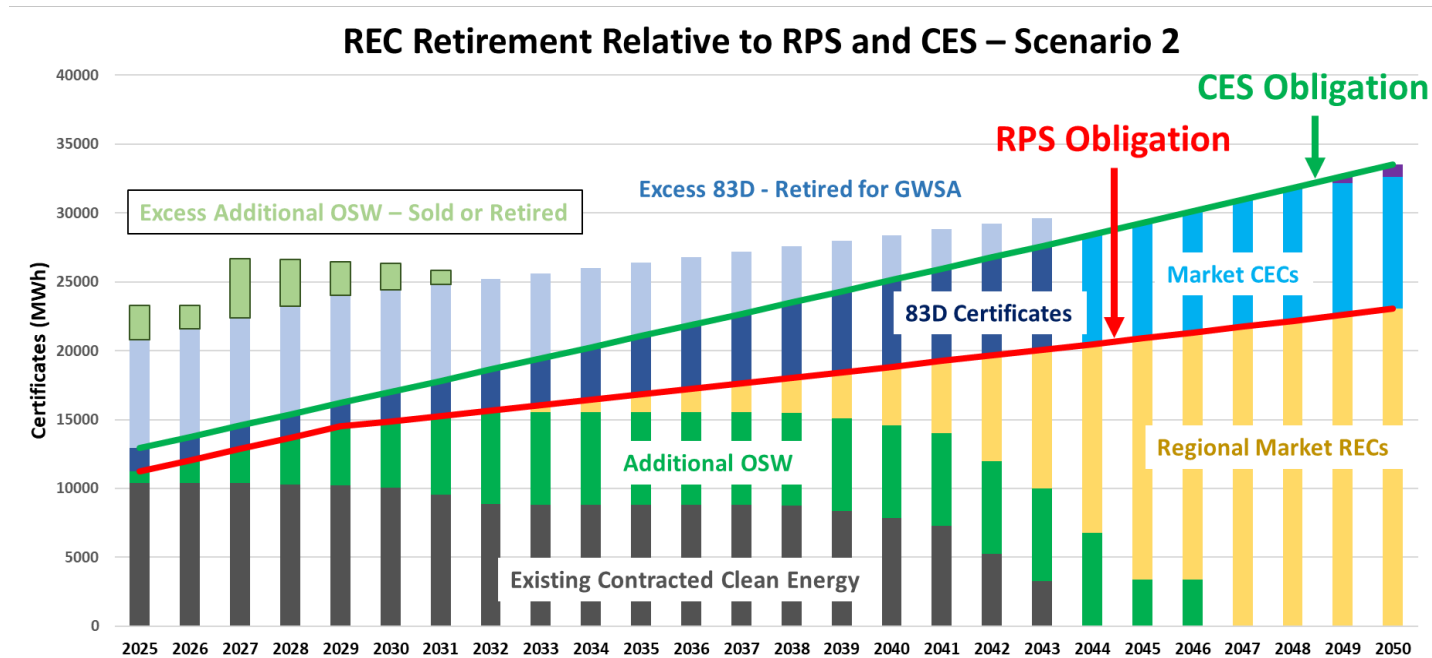


Forecasted Annual Energy Demand, After Impact of Solar PV and Energy Efficiency New England Region Wide





RPS Benefits are Weighted in Future Years



- › In early years the amount of RECs from offshore wind exceeds the market demand. When excess RECs are sold at a low price into an oversupplied REC market, it reduces the cost-effectiveness of the contract and the emissions reductions associated with the excess contracted offshore wind does not count towards GWSA compliance.



Scaling up Offshore Wind – Challenge – Regulatory Environment

Permitting Status of Vineyard Wind

BOEM on timeline for recently announced cumulative impacts supplement to Vineyard Wind’s Environmental Impact Statement:

“Comments received from stakeholders and cooperating agencies requested a more robust cumulative analysis. Considering such comments and taking into account recent state offshore wind procurement announcements, BOEM is expanding its cumulative analysis of projects within its draft Environmental Impact Statement (EIS). Because BOEM has determined that a greater build out of offshore wind capacity is more reasonably foreseeable than was analyzed in the initial draft EIS, BOEM has decided to supplement the Draft EIS and solicit comments on its revised cumulative impacts analysis.”

- The region has engaged with Massachusetts to support predictability schedules for offshore wind development.
- Massachusetts congressional delegation, along with three Republican colleagues from Louisiana, have also supported the effort to execute the supplemental EIS promptly and to mitigate further federal permitting delays.

September 6, 2019

The Honorable David Bernhardt
Secretary
U.S. Department of Interior
1849 C Street, NW
Washington DC 20240

The Honorable Wilbur Ross
Secretary
U.S. Department of Commerce
Room 5421
14th Street and Constitution Ave, NW
Washington, DC 20230

Dear Secretary Bernhardt and Secretary Ross,

We are writing to you to express our support for offshore wind development and our concern with the recent development which potentially will undermine efforts to promote regulatory certainty for this industry.

Our states are partnering with the Department of the Interior and the Bureau of Ocean Energy Management (BOEM) in advancing responsible offshore wind development in the Atlantic Ocean. Recent technological advances and extensive public processes have now attracted some of the most sophisticated energy companies in the United States and the world to invest off our coastlines. This investment is a win for our country as it will not only increase our domestic energy production and further America’s energy independence but also create thousands of jobs – including manufacturing jobs – in our states and other states far from the coast.

A decision regarding the first project undergoing environmental review by your Departments, Vineyard Wind, has now been delayed due to a decision to undertake an expanded “cumulative impacts” review of a greater build-out of offshore wind in the Atlantic. While we support assessing and mitigating impacts of large-scale offshore wind development, we are disappointed that this review has adversely affected the timeline for the Vineyard Wind Project. Like other industries, it is critical that states and the federal government establish and maintain clear regulatory timelines so as to incentivize the necessary capital investment. We encourage you to explore options for ensuring that supplemental review be conducted expeditiously so that a Record of Decision for the Vineyard Wind Project can be issued by March 2020. Further government delay would have negative impacts on this project, offshore wind development along the east coast and the further expansion of American jobs that support this industry.

Our states look forward to continuing to collaborate with your Departments on advancing offshore wind development. Please let us know how we can provide any assistance as we work together to support this important industry to our states and the nation.

Sincerely,

Governor Charlie Baker
Governor of Massachusetts

Governor Ned Lamont
Governor of Connecticut

Governor Janet Mills
Governor of Maine

Governor Chris Sununu
Governor of New Hampshire

Governor Ralph Northam
Governor of Virginia

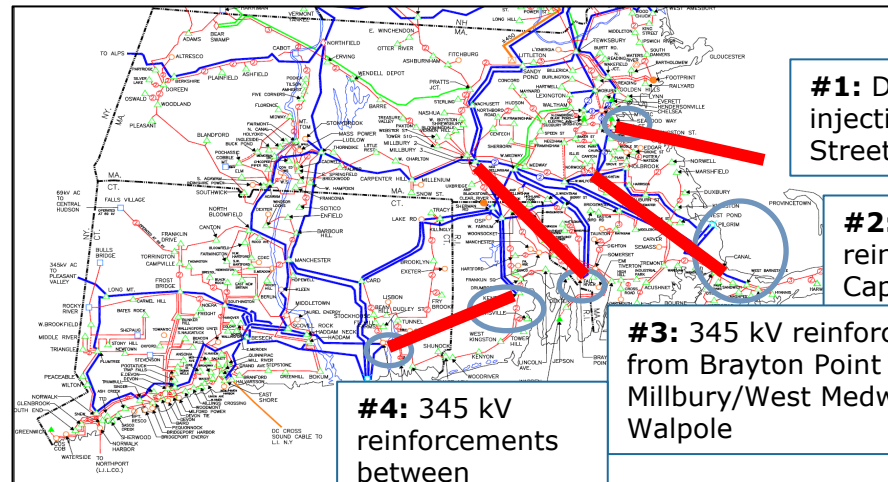
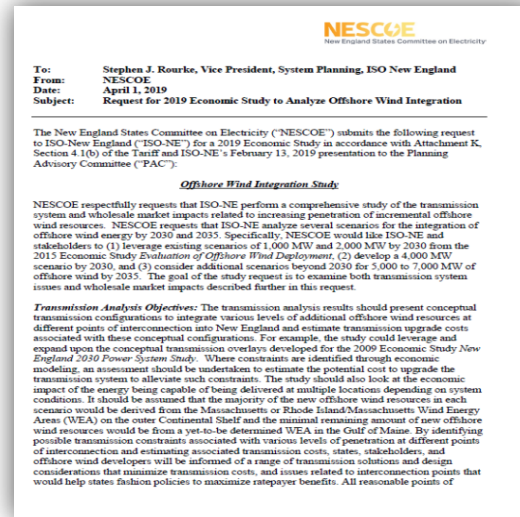
Governor Gina Raimondo
Governor of Rhode Island



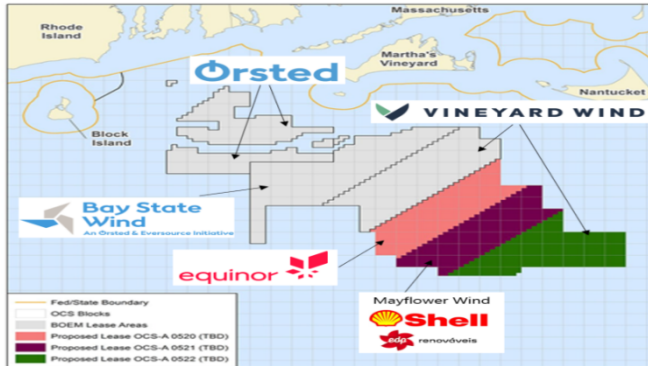
Scaling up Offshore Wind – Challenge – Transmission Constraints in Southern New England

Regional Context: Transmission

- On April 1st, the New England States Committee on Electricity (NESCOE) submitted a request to undertake an economic study to analyze the integration of offshore wind.
 - Assess the region’s transmission capability to interconnect 4,000MW of offshore wind by 2030 and consider additional scenarios beyond 2030 for 5,000 to 7,000MW by 2035.
- DOER currently working with stakeholders to organize a transmission technical conference as recommended in their May 2019 Offshore Wind Study



Offshore Wind Update: Priorities for Scaling Up Offshore Wind



- ❑ Continue to Attract Industry Leaders;
- ❑ Maintain Predictable Schedules;
- ❑ State Coordination on Layouts, Transit Lanes, and Appropriate Fisheries Mitigation;
- ❑ Assess Opportunities for Additional Lease Areas, e.g. Gulf of Maine;
- ❑ Research and Development on Avoiding Environmental Impacts;
- ❑ Achievable OSW Ambition/Targets;
- ❑ Strategic Electrification Load Growth;
- ❑ State Coordination on Supply-chain;
- ❑ Transmission Planning/Competition;
- ❑ Incorporation with Regional Wholesale and Capacity Markets.

