

## OFFSHORE WIND POWER: CRITICAL TO CLIMATE GOALS

There is growing agreement that we must decarbonize by 2050 for New England (NE) to do its part in meeting global climate goals to avoid the worst impacts to people and nature. Because of its enormous potential, Offshore Wind power (OSW) can and must play a large role in the NE for electrifying and decarbonizing multiple sectors of the economy. A 2016 Dept. of Energy Study found that the OSW potential in the NE states when constraints are considered is 175 GW. That compares with total NE electricity consumption in 2011 of 13.3 GW or less than 10% of the OSW potential. **To reach our climate goals NE states will need at least 30-45 GW of OSW by 2050 – so the opportunity is there to meet ambitious clean energy and climate goals – but will we?**

## URGENT CHALLENGES FOR OSW

The greatest constraint to OSW is huge: an inadequate land-based electric transmission grid that is fundamentally limited in how much OSW electricity it can receive. ISO-NE, the NE grid operator, anticipates that the existing transmission system can only absorb 5.8 GW and this capacity has already been spoken for with existing OSW projects in the pipeline. (CT is currently purchasing 1.1 GW from "Revolution Wind" and "Park City Wind," other states account for the rest). CT is now holding off on new OSW procurements to meet clean energy goals until the transmission log jam is addressed. But the existing ISO-NE system for designing & upgrading the on-shore transmission needed is extremely slow, politically fraught, poses significant environmental disruption and has high cost.

**A new transmission solution is required if we are to deploy offshore wind at the pace and scale needed to meet climate goals.**



A new transmission solution is needed if we are to meet the imperative to deploy OSW at the pace and scale needed to meet climate goals. We also need to develop and employ environmental standards for OSW development including mitigation solutions to safeguard both marine life and affected stakeholders. When these issues are adequately addressed, the pace and scale of OSW deployment can be increased to the levels needed to meet climate goals.

## TOP PRIORITY SOLUTION

"NE Regional Transmission Initiative" (RTI) was recently launched to address the fundamental transmission constraint problem. It is a cooperative effort among the 6 NE states with leadership from CT DEEP to develop a shared transmission grid that would be built offshore. Instead of relying on the inadequate ISO-NE grid development process, the states would take the initiative and create and develop the grid. ISO-NE would remain the grid operator once completed. The proposed system would enable transmission interconnections to be located where needed at high load centers such as Boston.

It would allow wind developers to “hook-in” to the system rather than each wind project competing for scarce shore-side interconnections with a spaghetti-like result of cables everywhere in the ocean. In contrast to the existing approach, **adopting a new paradigm of planned, regional transmission for OSW integration has the potential to solve the log jam, improve overall system reliability and avoid potentially very costly upgrades to the landside grid.** It would also be better for the environment in minimizing the footprint of OSW cables on the sea floor and dramatically reducing disturbance to land-side environments.

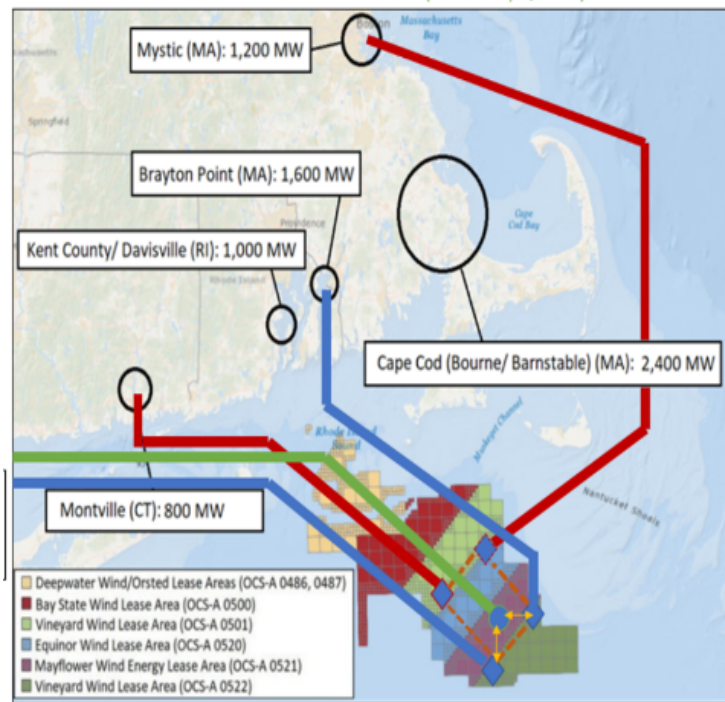
## ACTION NEEDED

The benefits of the RTI need to be conveyed to legislators and the public at large to build political support. Potential legislative tweaks may be needed to confirm that the state has clear authority to participate in transmission procurements independent of acquiring generation. OSW is one of the multiple issues the state needs to address in completing a comprehensive, integrated decarbonization roadmap such as completed by Massachusetts.

## MORE INFORMATION

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*Conceptual model of an offshore transmission grid (DEEP)*

## ENERGY COST AND AFFORDABILITY

This is a primary concern to all parties. With the need to repair or replace existing electrical infrastructure – both generation and transmission – combined with the increasing need to electrify our economy, there will be unavoidable costs whether through renewables or traditional fossil fuel plants. The data is clear that the more we get to scale on renewables with sources such as OSW, the lower the overall comparative cost will be in favor of renewables. OSW and the RTI are key for being able to lower energy costs.