

## **Off-shore Renewable Energy Working Group Draft Report Summary**

This is a summary of the first draft report of the renewables working group, which includes staff from EEA, DOER, and CZM, industry representatives and scientists. A second draft of this report is in progress. The group focused primarily on wind, but also looked at tidal and wave energy.

### Wind

The group built a simple suitability model for siting wind energy based on available information. We believe that there is excellent potential for development of this resource. Along the coast, average wind speed increases from 7.0 meters/second, (~15 mph), which is considered adequate for large-scale development of wind resources, to over 8.0 m/s, (18 mph), at the outer boundary of the Ocean Management Planning (OMP) area. Around Cape Cod and the Islands and in Buzzards Bay, the water is relatively shallow, with depths ranging from 2.5 to 20 meters (8 - 65 feet) which makes it feasible to drive a monopile into the ocean floor, assuming favorable sub-seafloor geology. This is currently the most cost-effective construction technique. However, further off-shore, up to 45 meters deep, (150 feet), higher wind speeds may offset the higher cost of the multi-legged structures that would be required. Unfortunately, we can't estimate the cost or feasibility of engineering a foundation in any given location, but detailed studies using side-scan sonar and acoustic profiling are being funded which will improve our knowledge of the seafloor.

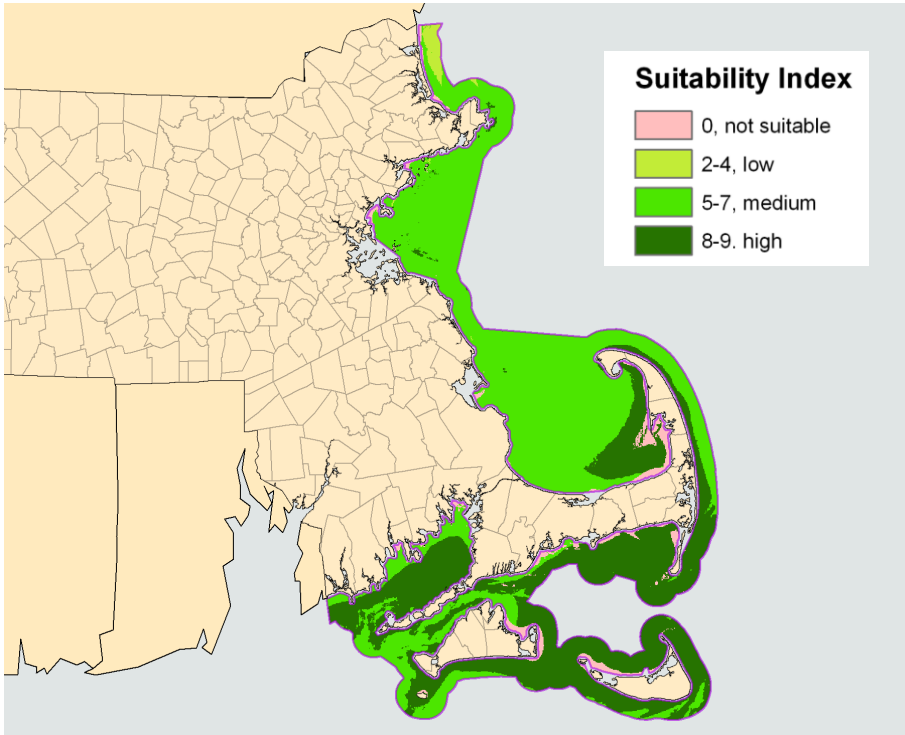
Two other requirements for the development of large scale wind projects are port facilities with industrial areas for staging and fabrication and specialized vessels for the actual construction. About a dozen port areas have been identified as generally suitable, but the availability of specialized construction equipment is an issue. Finally, since constructing new transmission lines is expensive and difficult, we asked the DPU to identify existing locations where large projects, (>100 MW), could be attached to the electrical grid. The DPU identified a half-dozen locations – in the Boston area, on the South Shore, on the Cape at Barnstable and in New Bedford. They told us that as much as 1500 MW could be linked into the 115 kV transmission grid without major system upgrades. There is also significant potential to link smaller projects into the distribution grid at lower voltages. National Grid, for example, could absorb as much as 400 MW of new power from smaller projects, one to ten turbines, including substantial amounts on the North Shore.

### Tidal and Wave

The group concluded that tidal energy may be feasible, but we don't have the ideal conditions for large scale projects, 4 knots peak current and water between 18 and 40 meters deep. In the vicinity of Martha's Vineyard and Nantucket there are several locations with close to 3 knot currents where potential projects are being reviewed. Wave energy is considered less likely to happen anytime in the next ten years, based on current technology, but the plan should provide for wave energy demonstration projects to allow for further development of this technology.

### Next Steps

The next steps for the renewables group are to incorporate comments and feedback into the draft report and to work on the mapping of the information from the DPU. After that, the group in charge of overall planning will incorporate the data we collected into an overall plan.



*Near-term suitability for wind development*