

Seach Continues for Strong Current of Tidal Power

by TIM FAULKNER / ecoRI News Staff



Efforts to generate electricity from waves and tidal currents have slowed in southern New England, as offshore wind power takes a commanding lead in the renewable-energy portion of the so-called “blue economy.”

In recent years, tidal- and wave-energy programs at Brown University, University of Massachusetts Dartmouth, and the University of Rhode Island have curtailed their research and commercial collaborations.

At Brown, the [Leading Edge](#) project has shifted from an academic and commercial venture to a school-based laboratory-research project. Engineering students designed oscillating hydrofoils that generate electricity from rectangular blades that lift and rotate in strong currents. Faculty leaders, however, have gone to other schools or are on sabbatical, thereby halting commercial partnerships.



A tidal current platform in the Cape Cod Canal will soon test its first underwater turbine. (Marine Renewable Energy Collaborative)

The program was funded by the federal [Advanced Research Projects Agency–Energy](#) (APRA-E) program, which supports energy initiatives that private investors consider too risky.

Leading Edge partnered with Portsmouth, R.I.-based [BluSource Energy Inc.](#) to build and test underwater turbines in the Taunton River and at the Massachusetts Maritime Academy at the entrance of the Cape Cod Canal.

Tom Derektor, CEO of BluSource, said the turbine succeeded in producing uninterrupted electricity, something wind and solar can't promise. But he noted the challenges of scaling hydrokinetic power for commercial production. Large energy systems require open water or a river with a strong current, free from ship traffic and debris, conditions hard to find in the Northeast. Most currents with the desired speed of 4 knots or more are too far from population centers to

host a permanent power system.

Still, Derektor believes that tidal energy can achieve scale in other parts of the country.

“There’s a lot of potential there, but it requires a lot funding to take it to the next level,” he said.

Congress may help by increasing funding for the APRA-E program, but President Trump opposes the program and has tried, unsuccessfully, to eliminate its funding.

Meanwhile, offshore wind power is taking off, with some 25 gigawatts of projects proposed across the country, much of it in the Northeast, [according to the Department of Energy](#). More than 10 gigawatts is planned for Massachusetts and Rhode Island waters, thanks to southern New England’s large, windy, and relatively shallow offshore regions — all within range of millions of energy customers.

There is still hope for harnessing energy from currents and waves. In 2014, UMass-Dartmouth closed its Marine Renewable Energy Center, prompting the energy program to reorganize as the [Marine Renewable Energy Collaborative](#) (MRECo). The nonprofit switched from its academic initiative to focus on public outreach, promotion, and equipment testing.

MRECo’s executive director, John Miller, said there isn’t adequate financial support to make tidal and wave projects financially viable, especially as federal dollars have shifted to wave-energy testing on the West Coast, such as the [PacWave project](#) off the coast of Oregon.

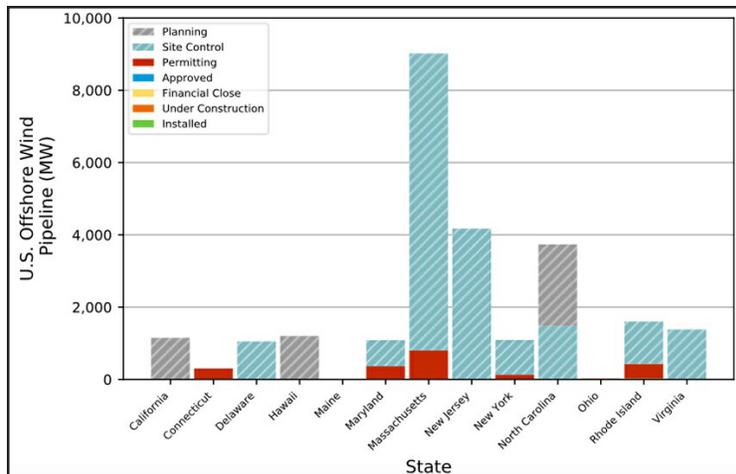
“It’s a tough business,” Miller said. “The whole business is 10 to 15 years behind where offshore wind is.”

Nevertheless, MRECo is testing a range of marine-industry products. The organization recently concluded a study that determined that current for the proposed Muskeget Channel tidal installation between Nantucket and Martha’s Vineyard lacks the velocity to support the latest tidal-energy systems.

In 2017, MRECo installed the Bourne Tidal Test Site (BTTS) in the Cape Cod Canal. Miller noted that the \$300,000 steel platform was a bargain to build compared to more

elaborate facilities off the coast of Scotland and in the Bay of Fundy in Canada that cost \$30 million apiece.

Within a year, BTTS expects to test its first underwater turbine, a device for the start-up company [Littoral Power Systems](#) of Fall River, Mass. **(to page 32)**



Offshore wind-energy development by state. (Department of Energy)