The Onshore Benefits of Offshore Wind

HOW COASTAL NEW ENGLAND CITIES ARE HARNESSING THE POWER OF THE EMERGING OFFSHORE WIND INDUSTRY TO PROMOTE LOCAL ECONOMIC DEVELOPMENT

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Block Island Wind Farm. Photo by the author.
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Offshore Wind Development in New England

After years of fits and starts, the offshore wind industry is finally powering up in the United States. The nation’s first project, Deepwater Wind’s 30-megawatt (MW) Block Island Wind Farm, has been producing power for over two years now, and an impressive number of new projects are in development. By Department of Energy (DOE) estimates, the offshore wind project pipeline includes north of 20 projects adding up to over 25 gigawatts (GW) of power.¹ For New England, where power prices are high and energy demand is concentrated along the coast, many see this new industry as a boon to the region. Several states have set ambitious offshore wind procurement goals, and the first

round of contracts for large-scale projects were awarded in summer 2018: Massachusetts selected Vineyard Wind to develop an 800-MW project off the coast of Martha’s Vineyard; Rhode Island returned to Deepwater Wind for a new 400-MW project; and Connecticut also contracted with Deepwater for 200 MW of capacity. Later in the fall, Ørsted — the world leader in offshore wind installed capacity — acquired Deepwater Wind, bringing an experienced European player into the emerging U.S. market. Given these strong market expansion signals, state and local leaders are sizing up the industry for the economic development it could provide.

As offshore wind makes its way to the East Coast, the scale and spread of the industry’s onshore presence remain open questions. Offshore wind projects represent billions of dollars in upfront costs, and have the potential to generate significant economic ripple effects — particularly if a local supply chain develops. While the first round of projects is likely to source materials from Europe, where the offshore wind industry has been successfully operating for nearly 20 years, leading equipment manufacturers are eyeing U.S. outposts for their production facilities. Developers and energy regulators also recognize that local manufacturing will help drive down the costs of offshore wind, which remains significantly more expensive than onshore wind. In addition to supply chain businesses, offshore wind’s economic impact will likely extend to maritime industries, technology and engineering trades, and broader community revitalization efforts in the aging port towns along the New England coast.

For now, offshore wind has yet to settle into an East Coast hub. Several states as well as local communities are racing to position themselves as desirable hosts for the industry. With contracted projects in place, Massachusetts, Rhode Island and Connecticut offer insights into how that process is taking shape on the ground. This report examines how coastal cities in the region are engaging with offshore wind companies to promote local economic development and jobs in their community. What kinds of planning and policy levers can city leaders pull to attract offshore wind industry players? How are developers and manufacturers responding? What other actors are involved in this process, and what community engagement is taking place? And, ultimately, where might these communities be in 20 years, as offshore wind development opens new economic doors and its ripple effects expand? This report addresses these questions by investigating approaches underway in New Bedford, Massachusetts; Providence, Rhode Island; and New London, Connecticut.

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Municipal Efforts to Attract Offshore Wind Development

New Bedford, MA

Massachusetts has arguably the country’s most aggressive and concrete offshore wind procurement goal: state legislation requires utilities to collectively contract for 1,600 MW of offshore wind by 2027, and there are plans to double that by 2035. New Bedford is working to position itself as the center of operations for the commonwealth’s ambitious offshore wind build-out. With support from the Massachusetts Clean Energy Center (MassCEC), the city has already constructed the state-of-the-art New Bedford Marine Commerce Terminal — specifically designed to support the construction, assembly and transport of offshore wind turbine components. The city is strategically marketing itself to developers and manufacturers in the hopes of initiating a community-wide revitalization that repositions it as the thriving port city it had been in its whaling heyday.

New Bedford is no stranger to the benefits of a lucrative maritime-based economy. In the mid-nineteenth century, the whaling industry made New Bedford one of the richest cities in the country. As Herman Melville wrote in *Moby-Dick*, “Nowhere in all America will you find more patrician-like houses; parks and gardens more opulent, than in New Bedford.” In the intervening 150 years or so, the city lost its whaling and textile industries, along with much of its former luster, as its economic and civic infrastructure declined. But the winds of fortune may soon be blowing the city in a more favorable direction. The city is working hard to reinvent itself — Mayor Jon Mitchell envisions New Bedford as a resurgent economic and cultural hub of Massachusetts’s South Coast region, and believes offshore wind will play a central role in its resurgence.

“We know in light of Northern Europe’s experience with offshore wind that many U.S. ports will benefit from the arrival of the industry here,” said Mayor Mitchell in an interview with *The New York Times*. In addition to creating the Marine Commerce Terminal, the city has launched the New Bedford Wind Energy Center in collaboration with the New Bedford Economic Development Council, the Harbor Development Commission and Bristol Community College; the Center’s mission is “to capture all the benefits possible, including local job creation and investments, from the development of the offshore wind industry in Massachusetts.” The masthead of the center’s website boldly proclaims that “the Port of New Bedford is ready for offshore wind.”

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New Bedford city leaders and other actors are pursuing offshore wind-oriented development through several strategies working in concert. Mayor Mitchell envisions an offshore wind presence that is both broad and varied in the city — spanning from maritime industries to research and higher education. To that end, the city recently completed a comprehensive land use study and re-visioning of the port and surrounding area; Bristol Community College began offering a certificate in wind power in 2013; and the harbor commission has created compelling marketing materials to tout the port’s unique resources and ability to support extensive offshore wind deployment. For example, the Wind Energy Center website notes that the port is home to over 200 maritime businesses, 6,200 employees and a commercial fleet of 500 fishing vessels — adding up to an economic impact of $9.8 billion. As New Bedford recognizes, offshore wind deployment has the potential to add much more to that tally.

The city’s waterfront and port infrastructure are perhaps its greatest economic assets, and New Bedford has initiated a robust planning effort to put the area to its best use. Offshore wind is a component of that, but additional historical, cultural and economic resources play a role as well. The city’s vision is encapsulated in the New Bedford Waterfront Framework Plan, a comprehensive document that suggests a variety of land use changes, new development, and connectivity improvements to knit the waterfront into a cohesive city hub. The guiding principles of the plan include:

1. Create a flexible land-use framework and implementation strategy that supports new and expands existing industries, maximizing economic development and flexibility for the future.

2. Promote, reinforce, and educate the community about New Bedford’s historic working waterfront.

3. Balance the needs of existing users with new industries and public access.

4. Strategically incorporate public access proximate to Downtown and at key points along the waterfront.”


8 “A Full Service Port.”
The city’s hustle and first-mover advantage already appear to be paying off. Vineyard Wind, winner of the 800-MW Massachusetts contract for Martha’s Vineyard, has opened an office in New Bedford, and appears to be taking a long-term view of its position in the community: “We see this not just as a project but as the beginning of an industry,” said CEO Lars Thaaning Pedersen in an interview with *The New York Times*. In October, Governor Charlie Baker signed a lease with Vineyard Wind that grants the developer use of the Marine Commerce Terminal in 2020 and 2021 for the construction and staging of its project. Additionally, as part of its proposal to the state, Vineyard Wind has pledged up to $2 million for a “Windward Workforce” training program with community colleges and an area high school. It is also committing $10 million to an accelerator fund that would help build a Massachusetts-based supply chain for the industry. As Massachusetts seeks to become “the Denmark of North America” for offshore wind, in the words of MassCEC CEO Stephen Pike, New Bedford appears poised to be a key link between the projects offshore and the supporting infrastructure onshore.

**Providence, RI**

With the Block Island Wind Farm, Rhode Island made history in 2016 as home to the nation’s first operating offshore wind project. In the summer of 2018, the state announced its second contracted offshore wind installation, the 400-MW Revolution Wind project. While small in size, the state is making bold claims around its leading position in the offshore wind industry — and Providence, along with its port infrastructure, is working to capitalize on that leadership.

Given Providence’s standing as Rhode Island’s capital and largest city, the state has channeled significant resources and workforce development programs towards ensuring that the city has a place in the offshore wind sector. Governor Gina Raimondo’s administration put in a good deal of effort to make Rhode Island’s pioneering first project a reality, and has developed a close relationship with Deepwater Wind, whose headquarters are in Providence. The state Department of Labor and Training’s Wind Win Career Pathways initiative is working to prepare students in high school and beyond for jobs in the wind industry. According to state estimates, Rhode Island’s offshore wind industry is expected to support 5,000 jobs once it is established.

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10 Reed, “Massachusetts Gains Foothold.”
Deepwater Wind’s Block Island project utilized the Port of Providence, or “ProvPort,” for the construction and staging phases of development. Before being acquired by Ørsted, the developer made commitments to invest $250 million locally — including $40 million in the ports of Providence and nearby Quonset — as part of the Revolution Wind project development. Ørsted is expected to honor those economic commitments. For its part, the state is on track to acquire and develop roughly 100 acres of port space at Quonset and Providence to facilitate the deployment of offshore wind projects from the Rhode Island shoreline. Governor Raimondo also pledged to attract $100 million in new research and development (R&D) investment to Rhode Island during her second term, with a vision of establishing the state as a national hub for offshore wind R&D and technology.14

The city of Providence has broader goals of fostering an innovation economy that positions the city to attract new residents and businesses in the coming years, and Mayor Jorge Elorza notes that offshore wind could provide a key piece of that strategy; he claims there is “growing recognition of Providence as

a hotbed of technology that’s improving lives and promoting a more sustainable planet.” Providence is also pursuing broader science and technology-focused development through initiatives like seeking to encourage innovation in the life-sciences field within the city and its redevelopment around highway I-195, branded the “Innovation & Design District.”

The city also calls out the impacts of climate change and Providence’s vulnerable position as a low-lying coastal city as an impetus for promoting the development of an offshore wind sector. “Climate change is one of the greatest global issues of our time,” said Mayor Elorza at a press conference announcing the Revolution Wind project. “Providence will be significantly impacted over the next 100 years.” Along the East Coast, many cities have made clean energy commitments and created climate action plans, including Providence. And increasingly, for many young, educated millennials, a city’s reputation for sustainability — particularly when it comes to transit and walkability — can be a factor in their decision to call it home. However, Providence has yet to emerge as a climate leader when compared to the efforts of its neighboring cities, such as Boston; city leaders appear to perceive offshore wind as a way to differentiate Providence and claim climate leadership, thus advancing their efforts to attract new residents.

New London, CT

Connecticut has been slower than its neighbors in establishing an offshore wind policy goal. Nevertheless, the state entered the offshore wind rush in June 2018, when it awarded its first offshore wind project to Deepwater Wind as part of a broader renewable and clean power solicitation. Connecticut’s 200-MW contract piggybacked on Deepwater’s 400-MW Rhode Island project, providing economies of scale and lower power prices as well as an example of states working together to harness the economic potential of the industry. Another attractive aspect of the Deepwater Wind proposal was its economic development component — the company promised $15 million to refurbish the port of New London, as well as workforce development initiatives, a research partnership with the University of Connecticut and a pledge to contract with a local boatbuilder for the crew transfer vessels that will shuttle workers out to the wind farm.

Some observers note that Connecticut may have been smart to time its request for proposals (RFP) when it did — allowing the state to ride on the coattails of the Massachusetts and Rhode Island procurements and the interest that those RFPs generated. “We were able to offer the state of

15 Kuffner, “Deepwater Wind.”
17 Faulkner, “R.I.”
Connecticut very aggressive pricing and at the same time offer an investment to essentially help Connecticut punch above its weight in offshore wind projects,” said Matt Morrissey, a Deepwater Wind vice president.¹⁹

While New London seems poised to serve as Connecticut’s offshore wind command center, the city is also competing with Bridgeport for the public and private funding that will cement its position as the port of choice for the industry. City leaders are strategically considering New London’s strengths and challenges when it comes to offshore wind, as well as the multiple different economies that could arise out of the expected project development. For example, planners see potential for New London to play a role in the technical and engineering aspects of offshore wind development, given its strong existing workforce of engineers and skilled tradespeople.²⁰ On the downside, the city has a very small geographic footprint and lacks large tracts of land for siting offshore wind manufacturing facilities. Additionally, New London’s port is state-owned, limiting its ability to charge higher taxes for more lucrative land uses such as offshore wind staging and deployment. By taking a broad, long-term view, New London is hoping to generate durable opportunities in and around the offshore wind industry that help both the city and the region thrive.

New London seeks to ensure its share of economic development through mechanisms like the host agreement the city reached with Deepwater Wind (and which Ørsted states it will honor). The city’s

²⁰ Spiegel, “Connecticut.”
Director of Economic Development & Planning Felix Reyes emphasized the importance of channeling Ørsted’s pledged $15 million investment to broader community revitalization efforts, rather than just funneling it to the “black box” of the city’s general fund. “How do we continue to increase our economic development over the long term?” Reyes asked. “People have to want to live here, work here. We have to create the amenities — the housing stock, the streets, parks and school systems — that make people want to bring their families here.”

New London is working to achieve those broader goals through its ongoing negotiations with Ørsted around how the company’s pledged support will be divided up.

A new industry like offshore wind carries the potential for direct, indirect and induced economic impacts, and New London is thinking holistically about all three. “Are there technologies, affiliated businesses or start-ups that Ørsted has the ability to attract, invest in and help bring to New London?” asked the city Economic Coordinator Peter Lent. Lent and Reyes are exploring the potential for incubator or accelerator programs in New London that could support new technology development and the future production of alternative energy in the city. “This may put us in a position to look at other types of renewables, and build our reputation around that,” said Lent. As examples, he pointed to Stanley Black & Decker, which has established an R&D center in Hartford and contributes money to start-ups that could help them develop new products, and the fuel cell industry, which has spurred the development of supporting businesses and led to Connecticut’s position as a nationwide hub for the technology.

From a public engagement perspective, the city is proactively encouraging productive dialogue around the new offshore wind industry. Lent and Reyes pointed to several community outreach programs, including an economic forum on the subject, a recent Chamber of Commerce breakfast featuring Ørsted representatives, and Ørsted’s ongoing tour of the region to build understanding and support for their projects. Local churches have been engaged on the subject, as well as unions and local representatives — and the reactions have been largely positive. While New London is currently in a waiting game to see where and how the offshore wind industry takes shape in Connecticut, the proactive steps of city leaders have ensured its place on Ørsted’s radar screen.

Looking to Europe for a Glimpse of the U.S. Offshore Wind Future

“We don’t really know the total impact that will come of this,” noted Reyes. As of now, the New England cities vying for offshore wind development dollars are in the very beginning phases of their hoped-for transformations. However, many regional leaders are looking across the Atlantic for models of what these port communities could become.

21 Reyes and Lent, interview.
22 Reyes and Lent, interview.
23 Reyes and Lent, interview.
The U.K. ports of Hull and Grimsby, part of the Humber region, have experienced a particularly dramatic turn-around over the past 15 years, thanks in large part to the offshore wind industry and its associated economic impacts. In 2003, the former fishing port of Hull was voted the “crappest town” in the United Kingdom, according to Mark O’Reilly, CEO of the Team Humber Marine Alliance. Then offshore wind came to town, initiating a remarkable resurgence that brought over 1,000 direct jobs in turbine manufacturing and nation-leading economic growth to the region. In 2017, Hull was named the United Kingdom’s “City of Culture” thanks to the rebirth of arts, music and tourism that the region’s economic gains precipitated.24

In Germany, a similar story unfolded in the port of Bremerhaven. The port’s economy historically revolved around shipping, shipbuilding and commercial fishing; post-World War II, it served as a logistical and supply port for U.S. forces stationed in Germany. After the fall of the Berlin Wall, Bremerhaven lost its role as a U.S. Army outpost, and its historic shipping industries were in decline as well. By 2002, city leaders saw that drastic measures were needed, and developed a comprehensive plan to revitalize the port — centered on attracting the offshore wind industry. A newly developed industrial site, Luneort Bremerhaven, enticed four wind energy equipment manufacturers to Bremerhaven, which is now also home to R&D facilities and the 185-member Windenergie Agentur Bremerhaven/Bremen (WAB) network, established in 2002 with the aim of promoting wind power developments in the region.25

How might this transpire in New England? By 2040, New Bedford’s port may be completely redesigned to showcase and optimize the city waterfront — incorporating a mix of uses including commercial fishing operations, wind industry staging sites, a public park and waterfront performance venue, a fish and farmer’s market, and new residential development. Providence might have successfully rebranded as a “city of innovation,” with ProvPort investments channeling funds and R&D towards new wind turbine technology companies and start-ups throughout the city. New London, having succeeded in its quest to attract supporting businesses to the city, could be hosting a vibrant set of engineering, technology, boat-building and offshore wind developers in its currently vacant office buildings. All of these cities may feature more amenities, more new development, and more place-based cultural institutions as a result of the economic boost provided by the billion-dollar offshore wind industry.


Conclusion

As the East Coast gears up to host this new clean energy industry, the onshore benefits of offshore wind are top of mind for many community leaders and economic planners. Fortunately, offshore wind developers are also cognizant that economic development considerations are important for building the local public support that will allow their projects to move forward. City and state leaders are pursuing various approaches to realizing those benefits, leading to some insights and best practices that might guide future efforts.

First, cross-sector alliances can play a critical role in lining up the necessary infrastructure, workforce development and marketing to attract the offshore wind industry. New Bedford’s Wind Energy Center, Hull’s 200-member Team Humber Marine Alliance and Bremerhaven’s WAB network illustrate the impact that multiple organizations can have when they unite behind a shared economic objective. Positioning a community to host a new industry requires an array of initiatives, which a city on its own would struggle to implement — plans for new land uses must be created, capital projects must be built and training programs must be established; these alliances have all helped advance their home communities towards those ends. What’s more, such coalitions indicate a level of community support and stability that developers may find reassuring, given the long-term commitment that offshore wind projects represent.

Second, city leaders have leverage they can exert in their bids to win offshore wind operations, particularly if their ports or other resources are especially attractive to the industry. Developers benefit from supportive, well-structured host communities, and are willing to provide economic development support in exchange for any advantage that cities can provide in de-risking their projects. Savvy planners can negotiate favorable “host agreements” with developers that channel funds to broader community revitalization goals, including amenities and urban greening projects, new housing stock or the local school system. Felix Reyes, for example, is keeping New London’s community needs top of mind in the city’s ongoing host agreement negotiations with Ørsted. Offshore wind has the potential to contribute more than just energy and revenue to coastal communities, and strategic leaders are working to tap into that potential.

Lastly, several cities are thinking beyond the direct economic impacts of offshore wind, and asking themselves what affiliated industries could take shape in its shadow. The indirect and induced impacts of the industry could include new business opportunities in shipbuilding, energy technology and a host of related fields — these are opportunities that leaders in all three communities are actively seeking to realize. Partnerships with developers could spur funding programs and incentives that encourage these affiliated industries to set up shop in the host community; one example of this is the accelerator fund that Vineyard Wind has established in New Bedford. Overall, the cities with the most holistic and comprehensive approach to attracting offshore wind development are those that will be best prepared to navigate the changing tides of fortune that this new industry will bring to the region.