Atlantic Coast States Obstruct Offshore Wind Despite Saying It's Wanted

Thomas N. Russo

Recent headlines about New York and New Jersey opposing oil and gas production off the Atlantic Coast would have us believe that coastal states have turned a cold shoulder to offshore energy development. Nothing could be further from the truth. In fact, these states and others in New England are hoping that offshore wind development will diversify their electric-generating fleets and wean them off natural gas.

Although the offshore wind industry has a great track record globally, that may be a tall order in the United States, where the industry is just gaining traction. The Block Island Wind Farm is the first commercial offshore wind farm operating in the United States, located 3.8 miles from Block Island, Rhode Island. Deep Water Wind developed the 30-megawatt project, which uses five Alstom Haliade 150 6-megawatt turbines. The project's power is transmitted to the electric grid on the mainland via a 21-mile submarine power cable buried on the ocean floor.

Thomas N. Russo (tom@russoonenergy.com) is an energy and environmental expert with unique regulatory knowledge of energy infrastructure, environmental impact assessment, markets, and physical/cybersecurity. Prior to starting Russo on Energy LLC, he worked for over 30 years as a manager and senior energy industry analyst at the Federal Energy Regulatory Commission. There, he gained experience in hydropower licensing, National Environmental Policy Act environmental impact assessment of projects, business process reengineering, natural gas and crude oil market oversight, and applicable federal statutes.

Residents of Montauk Point on the east end of Long Island can see the project.

OFFSHORE WIND LEASING AND DEVELOPMENT

Offshore wind (OSW) is well-established in Europe and Asia. The United Kingdom has 36 percent, or 6,836 megawatts, of the world's 18,814 megawatts of OSW capacity, according to the Global Wind April 2018 report. Germany's 28.5 percent, or 5,355 megawatts, is second among the world's 17 markets. China, with a 15 percent market share, is third. A record 4,334 megawatts of new OSW capacity went online in 2017, with none in US waters.[1]

Aside from being a renewable, OSW generation is high during peak demand periods that occur in organized electricity markets like ISO-New England, New York ISO, and PJM. If OSW could be located close to large cities or load centers, the cost and public opposition would be reduced that accompanies building transmission lines from remote onshore wind projects through various communities.

Contrary to popular opinion, the Trump administration is not opposed to offshore wind development. On April 6, 2018, the Interior Department, in support of the president's "America-First Offshore Energy Strategy," announced the proposed lease sale for two additional areas in offshore Massachusetts for commercial wind energy leasing, totaling nearly 390,000 acres. In 2017, a group of electric utilities in Massachusetts issued a request for proposals for up to 800 megawatts of OSW capacity. The OSW market has been mixed in the last

  / DOI 10.1002/gas.22070

Exhibit 1. Proposed and Planned Offshore Wind Farm in the US

Vineyard Wind
- At its nearest point, the project area is approximately 14 miles from the southeast corner of Martha's Vineyard and a similar distance from the southwest side of Nantucket
- Would construct and operate an 800-MW wind energy facility
- Would be constructed in two 400-MW phases up to five years apart
- Install up to 106 wind turbine generators, each with a capacity of between 8 and 10 MW
- Two to four offshore substations or electrical service platforms
- Potential export cable landfalls identified near the towns of Yarmouth, Barnstable, and Nantucket in the Commonwealth of Massachusetts

Bay State Wind is in the planning stages, according to the FAST-41 Dashboard
- Up to 1,600 MW located 15–25 miles off the south coast of Massachusetts
- Developed in phases, and will consist of between 107 and 267 wind turbine generators
- New onshore and offshore substations, export cables, a battery energy storage system
- Will connect to the wholesale electric grid administered by ISO-NE.

Proposed Skipjack Wind Farm
- Located in the Atlantic Ocean northeast of Ocean City, 19.5 miles away from its closest point in Maryland and 26 miles away from the Ocean City pier
- Consisting of 15 wind turbines and a state-of-the-art subsea transmission system
- Capable of delivering 120 megawatts of clean energy to Maryland's Eastern Shore
- Offshore construction is planned to start as early as 2021, with the wind farm coming on line in 2022.

Revolution Wind Farm
- A proposed utility-scale offshore wind farm paired with an energy storage system
- Would be the largest combined offshore wind and energy storage project in the world
- Will be built in the federal lease site off the coast of Massachusetts
- Will be located 30 miles from the mainland and about 12 miles south of Martha's Vineyard
- If approved, local construction work on Revolution Wind would begin in 2022, with the project coming on line in 2023

decade. Some of the projects currently proposed off of the East Coast are shown in **Exhibit 1.**

OFFSHORE OIL AND GAS LEASING AND DEVELOPMENT

In response to President Trump's executive order last year that encouraged oil and natural gas exploration in US coastal waters, the Department of the Interior is planning to lease acreage for oil and gas development off the Atlantic Coast. Various types of oil and gas rigs would be deployed in the Atlantic Ocean. They could then transfer oil and gas to ships or pipelines for processing or refining onshore.

Many of the East Coast states have not responded to the Interior Department's proposal to lease acreage offshore for oil and gas development. The Department of the Interior is holding public meetings in the states to discuss the leasing and oversight process for oil and gas drilling. Job creation, both offshore and onshore, is a public benefit of developing oil and gas plays offshore.

For some states, that is not sufficient. New Jersey Gov. Phil Murphy signed a bill into a law to ban offshore drilling in state waters (first three miles). New York is also opposed to the idea but has not banned drilling offshore. Both states cite increased risk of oil spills and gas explosions and have threatened to use the Coastal Zone Management Act (CZMA), Clean Water Act, and other environmental law to block the construction of needed infrastructure onshore to support offshore oil and gas drilling.

New York effectively used the CZMA and provisions of the Deepwater Port Act to block the proposed Port Ambrose Liquefied Deepwater Port in the Long Island Sound. The floating storage and regasification vessels would have received liquefied natural gas (LNG) and regasified it so it could flow into New York's natural gas pipeline system. Also New York's use of Section 401 of the Clean Water Act to deny two proposed natural gas pipelines, Constitution and Northern Access, is well-known.

Neither do drillers seem very interested in developing coastal US oil and gas. In one of the largest lease sales in American history that took place in March 2018, drillers bid on only a tiny fraction of the Gulf of Mexico acreage offered.

DOI 10.1002/gas

REGULATORY CHALLENGES ARE SIGNIFICANT

While OSW has a lot to offer, the industry and US regulators that deal with it have only the Block Island experience in planning and siting OSW. Construction on the Block Island Wind farm began seven years after the project was proposed. It took almost another two years before the project began commercial operations in December 2017.

The nine-year period needed to plan, obtain permits, and begin commercial operation of the 30-megawatt (six-turbine) Block Island project is comparable to some of the largest LNG export terminals and almost twice what is needed to site a gas-fired power facility. Hence, private investors are not exactly incentivized to invest in OSW projects until the projects at least have some assurance that they will obtain the necessary permits to allow them to order turbines and transmission cables and select a construction contractor. A shorter and more efficient review process would attract more private financing.

Clearly, the federal and state governments will have to reduce the permitting and approval time significantly if they wish to attract private capital to OSW projects. Future projects being planned and proposed are between 200 and 800 megawatts. They contain hundreds of wind turbines and longer transmission cables, because the projects are being located farther offshore. Because approval of OSW requires approval at the federal level, OSW triggers compliance with the National Environmental Policy Act in addition to a review of the lease.

The Interior Department's Bureau of Energy Management Services (BOEM),[2] formerly the Minerals Management Service, is the lead agency for OSW. Other federal agencies may also have to prepare National Environmental Policy Act (NEPA) documents as well to comply with other environmental laws. State agencies will also have a say by making a determination on whether the proposals are consistent with the CZMA. See **Exhibit 2.** The projects currently proposed off the East Coast are governed as shown here. A negative finding would stop construction of the project.

The environmental stakeholders involved in OSW projects include commercial fisherman groups, shipping interests, consumers concerned about television reception and visual quality, and environmentalists concerned about bird mortality and construction impacts on marine mammals. Approval of OSW usually requires the BOEM and the US Coast Guard to designate no-commercial-fishing and anchorage-exclusion areas to protect the submarine cables that transmit electricity to the mainland.

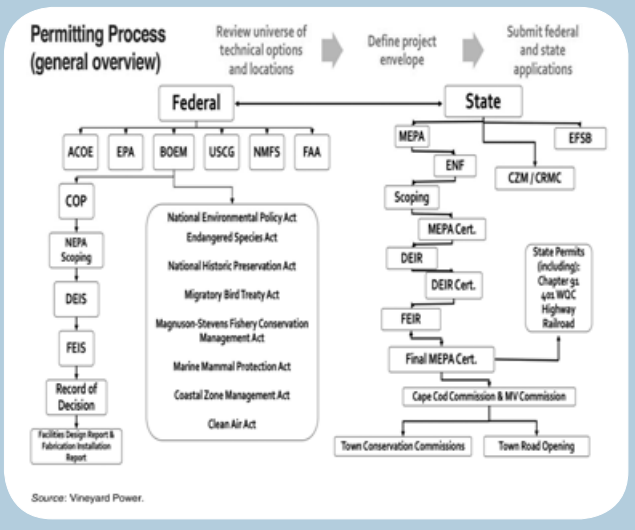
The Trump administration's One Federal Decision memorandum, which was signed by all the department agencies, and recent announcements that the president's Council on Environmental Quality is revising the NEPA regulations may have some positive effect and help to expedite the permitting time. However, these actions will not affect the behavior of state agencies and their issuance of necessary permits for an OSW project. While I have seen states delay natural gas projects for a variety of reasons, I believe that most state agencies will be under a great deal of pressure to expedite approval of well-planned OSW projects, simply because they are renewables.

NEW YORK AND ISO-NEW ENGLAND UNDER PRESSURE

The state of New York's energy plan[3] places a great deal of emphasis on renewables, especially OSW farms. The state will issue solicitations in 2018 and 2019 to develop at least 800 megawatts of OSW projects and foster an Offshore Wind Industry and Workforce. While these actions are commendable, New York's greatest challenge will be to develop a shorter and more efficient permitting process to persuade reluctant investors and developers to propose OSW projects in New York waters.

New York is also under a self-imposed deadline to shut down the 2,000-megawatt Indian Point Nu-

Exhibit 2. Federal and State Permits Required for an Offshore Wind Project



  / DOI 10.1002/gas

clear Power plant by 2020–21.[4] The plant currently supplies about 25 percent of the power for New York City. However, failure to replace the 2,000 megawatts the nuclear plant provides will delay the closure. It's doubtful that OSW projects will be able to replace the 2,000 megawatts from the Indian Point Nuclear Power Plant until well into 2027–30. This assumes that the permitting process will take seven years and that construction will take at least two years. Unlike Rhode Island, the state of New York will have a steep learning curve when it comes to siting OSW farms. Combined with New York's reputation for being a leading proponent of climate change and having a heavy-handed and unwieldly permitting process, the state will have to take extraordinary steps:

1. Create a positive climate of OSW development and reverse years of heavy-handed regulation
2. Overcome OSW proponents and investor reluctance to propose projects
3. Get up to speed on an OSW siting process that they have no experience in
4. Expedite the state permitting process for CZMA determination and Clean Water Act Section 401 water quality certificates

While OSW projects are renewables, the state of New York and BOEM will face new challenges from the environmental community and those who don't want these projects built. OSW farms are also responsible for bird mortality during operation, impacts to marine mammals during construction of the wind turbine platforms, and submarine cables transmitting electricity. The projects are large and can contain hundreds of wind turbines that may affect visual quality, television reception, commercial fishing, and navigation. New York residents in eastern Long Island's Montauk have complained about being able to see the Block Island Project, which is about 15 miles away.

Fortunately, the New York Power Authority (NYPA) may have the right stuff and be instrumental in overcoming the four challenges mentioned above. NYPA is a state agency under the control of the governor and has success in working with other federal agencies and its sister agencies, the NY Department of Environmental Conservation and NY Department of State. NYPA also has developed and currently operates hydropower, natural gas and oil electric-generating facilities, and high-voltage transmission lines.

NYPA could be a trailblazer for OSW development in New York coastal waters and the vehicle for making the permitting process for OSW more efficient. NYPA could easily plan, develop, obtain permits, construct, and operate OSW projects for the benefit of New York's rate payers, consistent with its mission. Later, as the OSW industry matures, it could sell these power-generating assets to the private sector as it did with other generating assets it owned in the past.

ISO-New England (ISO-NE) has a similar challenge to New York's in replacing 2,000 megawatts at the Mystic gas-fired power plants in Boston. Exelon Generation filed with ISO-NE its intention to retire the Mystic Generating Station's Units 7, 8, and 9, and the Jet unit on June 1, 2022. Exelon may not go forward with the retirement if ISO-NE and the Federal Energy Regulatory Commission put forward regulatory reforms to properly value reliability and regional fuel security.[5]

While Rhode Island has experience with the OSW permitting process, Massachusetts does not. Also, the proposed 800-megawatt Vineyard OSW project and associated transmission cables are larger and more complex. Clearly, some form of cooperation between Rhode Island and Massachusetts is warranted to reduce the permitting time and facilitate agreement among the stakeholders, especially commercial fishermen.

NOTES

1. GWEC. (2018, April 26). *Global wind market report*. Washington, DC: Author. Retrieved from http://gwec.net/global-wind-market-report-webcast-26-april-2018-15h-cest/; Trabish, H. K. (2018, May 15). High values are blowing in offshore winds; policymakers may need more. *UtilityDive*. Retrieved from https://www.utilitydive.com/news/high-values-are-blowing-in-offshore-winds-policymakers-may-need-more/523407/.
2. Bureau of Ocean Energy Management. (2018, February). Fact sheet. Retrieved from https://www.boem.gov/BOEM-Fact-Sheet/.
3. Governor Cuomo unveils 20th proposal of 2018 State of the State: New York's clean energy jobs and climate agenda, https://www.governor.ny.gov/news/governor-cuomo-unveils-20th-proposal-2018-state-state-new-yorks-clean-energy-jobs-and-climate.
4. Entergy. (2018). Entergy and New York agree to Indian Point Nuclear Plant closure. Press release. Retrieved from http://www.safesecurevital.com/entergy-ny-officials-agree-on-indian-point-closure-in-2020-2021/.
5. Exelon Generation files to retire Mystic Generating Station in 2022, absent any regulatory solution. (2018, March 29). Retrieved from https://www.businesswire.com/news/home/20180329005638/en/Exelon-Generation-Files-Retire-Mystic-Generating-Station.

 DOI 10.1002/gas