# Expensive Offshore Wind Energy Is Being Forced Onto Consumers

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Despite its cost, offshore wind is being forced on American consumers in the Northeast. The first offshore wind farm off the coast of Block Island, Rhode Island, will begin operating later this fall. The cost of the 30-megawatt wind farm is \$300 million–\$10,000 a kilowatt—and over 10 times more than the cost of a new combined cycle unit. Further, it is 58 percent more costly than what the Energy Information Administration (EIA) expects a first-of-a-kind offshore wind unit to cost–\$6,331 per kilowatt.[i] One might think this is just an experiment, but in Massachusetts, a Republican governor, Charlie Baker, recently signed a bipartisan bill ordering the state's utilities to develop contracts with offshore wind farms for 1,600 megawatts–over 50 times the size of the Block Island Wind Farm.[ii]

#### The Block Island Wind Farm

The Block Island Wind Farm is a small project of five wind turbines (730 tons each) that project 600 feet above the water. The farm is located about 3 miles offshore and can easily be seen from land. The turbines were built overseas by a division of General Electric and were installed by a ship from Norway with help from an American vessel. The residents of Block Island, who are dependent on diesel power, may be willing to pay the exorbitant cost because the project will connect the island's power grid to the mainland for the first time, making its electricity supply more reliable. The new undersea connection also includes fiber optic cable that should help increase Internet speeds, which are extremely slow, particularly in the summer when the island's population can reach 20,000.[iii]

The developer, Deepwater Wind of Providence, R.I., received help from the political leadership of Rhode Island and from New York financial expertise. Initial financing for the \$300 million project came from the D. E. Shaw Group, a large investment firm in Manhattan.

#### Northeast, Offshore Wind and Other Renewable Energy

The Northeast is being targeted for offshore wind power because it has strong electrical demand, high electricity prices, stiff ocean breezes off the coast, relatively shallow water many miles from shore, and opposition to new power plants on land. The Obama administration has been leasing large patches of the ocean floor for wind-power development with nearly two dozen projects on the drawing board. Deepwater Wind, DONG Energy, and Offshore MW are three developers that hold federal leases about 15 miles south of Martha's Vineyard.

Massachusetts is forcing its utilities to purchase offshore wind energy. The bipartisan bill passed by the Massachusetts legislature and signed by the Governor requires the state's electric companies (e.g. Eversource and National Grid) to jointly contract for 1,600 megawatts of offshore wind leading into 2027. The utilities are also required to purchase annually 9,450,000 megawatt hours of hydropower and other renewables such as onshore wind. Because power plant owners will be barred from competing for nearly sixty percent of the commonwealth's electricity market under this bill, it is being touted as the single largest move away from a competitive electricity market in New England.[iv] This is a significant shift away from the way utilities have traditionally been charged in carrying out their responsibilities to consumers. Traditionally, utilities were required to find the most cost effective way of delivering power to consumers, to keep prices as low as possible. That model is broken with these new mandates and diktats.

Besides offshore wind, the bill is also advantageous to developers of large-scale transmission projects. The Vermont Green Line proposed by Anbaric Transmission and National Grid, for example, would transverse 60 miles under Lake Champlain, transporting high-voltage direct current electricity from hydroelectric dams in Quebec, Canada and

wind turbines (400 megawatts) to be developed in northern New York to New England markets. [v]

The bill allows electric distribution companies to recoup the cost of contracting for renewables by billing their customers. The companies will also receive an annual incentive of 2.75 percent of contract costs. A utility may decline any proposal that places an unreasonable burden on its balance sheet provided that steps had been taken to prevent such an outcome.

New York State's goal of getting 50 percent of the state's power from renewable sources by 2030 is also helping offshore wind. The next offshore wind farm is proposed 36 miles off Montauk, New York, and is meant to supply power to the South Fork of Long Island. EIA expects the cost of building an offshore wind farm off of Long Island to cost \$8,110 per kilowatt—28 percent more than the agency's average cost for offshore wind.

## How Expensive Is Offshore Wind?

According to EIA, the first of a kind offshore wind farm should cost \$6,331 per kilowatt (2015 dollars) falling to \$4,605 a kilowatt when a sufficient number are built. Thus, the Block Island wind farm is extremely expensive by EIA standards—costing 58 percent more than EIA's first of a kind offshore wind farm. EIA expects that it would take 4 years to build a 400 megawatt wind farm. In 2022, on average, the agency expects offshore wind to cost \$158.1 a megawatt (2015 dollars) without the production tax credit (PTC) and \$146.7 a megawatt with the PTC. The agency notes that there is a wide variation in regional costs of \$137.1 per megawatt to \$213.9 per megawatt without the PTC and \$125.7 per megawatt to \$202.5 a megawatt with the PTC.[vi]

Note that in 2022, with the PTC, offshore wind would cost 2.5 times more than a conventional natural gas combined cycle plant, which according to EIA has a levelized cost of \$58.1 per megawatt. In that case, what are the politicians in Massachusetts and New York thinking? How could they have the best interests of their constituents and the pocketbooks and budgets of their electric consumers in mind when they produce legislation that requires offshore wind? Are they not concerned about job losses from businesses who can no longer compete because of artificially high electricity prices?

## Other State Approaches to Wind Energy

Wyoming has determined that the state owns the wind that the plant owners use to generate electricity and it is taxing the industry. Over the past four years, Wyoming collected a little less than \$15 million in revenue from the power generated by its wind turbines.[vii] But, that revenue could increase as a developer is planning to build one of the world's largest wind farms (3,000 megawatt capacity) to provide electricity to California and the Southwest via a 750 mile transmission line. The project called the Chokecherry and Sierra Madre would create fewer than 150 jobs —much less than the coal projects in the state. The developer, Anschutz, expects to invest as much as \$8 billion in the project, including the wind farm and transmission line.[viii]

The current Wyoming tax code requires wind farms to pay \$1 per megawatt-hour produced and has brought in about \$4 million in annual revenue in the last few years. Taxing wind is a reversal for an industry that has long benefited from incentives and subsidies. The developer has spent nine years trying to build the wind project and indicates that higher taxes could further delay or even halt the plan.

## Conclusion

Offshore wind is extremely expensive as the EIA cites and the construction of the Block Island Wind Farm substantiates. Politicians who require its construction are ignoring the best interests of its constituents and the budgets of its electricity consumers. Wyoming, on the other hand, that is heavily coal-oriented and benefits from residential electricity prices that are 35 to 50 percent less than those in New England and in California is obtaining revenue from its wind farms rather than giving them a free hand.

[i] Energy Information Administration, Cost and Performance Characteristics of New Generating Technologies, Annual Energy Outlook 2016, June 2016, http://www.eia.gov/forecasts/aeo/assumptions/pdf/table\_8.2.pdf

[ii] New York Times, America's First Offshore Wind Farm May Power Up a New Industry, August 22, 2016, http://www.nytimes.com/2016/08/23/science/americas-first-offshore-wind-farm-may-power-up-a-new-industry.html? emc=edit\_th\_20160823&nl=todaysheadlines&nlid=63692790&\_r=0

[iii] Boston Globe, The nation's first offshore wind farm takes shape off R.I., August 15, 2016, http://www.bostonglobe.com/metro/2016/08/14/the-nation-first-offshore-wind-farm-takes-shape-off-blockisland/243lxkMseo3fDuhl8gN3ML/story.html?s\_campaign=email\_BG\_TodaysHeadline&s\_campaign

[iv] Mass Live, Reactions: Massachusetts energy bill pits power plants against renewables, August 2, 2016, http://www.masslive.com/news/index.ssf/2016/08/reactions\_massachusetts\_energy.html

[v] RTO Insider, Vermont Green Line Developers Seek New York Permit, May 9, 2016, http://www.rtoinsider.com/vermont-green-line-new-york-permit-25991/

[vi] Energy Information Administration, Levelized Cost and Levelized Avoided Cost of New Generation Resources in the Annual Energy Outlook 2016, August 2016, http://www.eia.gov/forecasts/aeo/pdf/electricity\_generation.pdf

[vii] LA Times, Who owns the wind? We do, Wyoming says, and it's taxing those who use it, August 24, 2016, http://www.latimes.com/nation/la-na-sej-wyoming-wind-tax-snap-story.html

[viii] LA Times, Firm seeks to harness Wyoming's wind energy for California, February 8, 2014, http://www.latimes.com/la-na-wyoming-wind-20140209-snap-story.html