

Early Offshore Wind PPAs Have Influential Supporters

The first power purchase agreements signed in offshore wind share something in common: a clear statement of political support, which eased regulatory approval.

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The offshore wind industry in the U.S. has matured to the point where power purchase agreements (PPAs) for offshore wind projects are now publicly available. This is the first time the industry has the opportunity to begin to gauge actual market pricing and terms and to learn lessons as to the likely regulatory challenges that early offshore wind projects will face.

If one thing has become evident, a clear, legislated statement of political will from the state government can be instrumental in successfully obtaining regulatory approval. Nowhere was this more evident than in Rhode Island, where approval of the PPA signed between National Grid and Deepwater Wind came only after legislative intervention. Rhode Island officials, including Gov. Donald Carcieri, R-R.I., instructed the Rhode Island Public Utility Commission (PUC) to consider offshore wind's other attributes, such as being a clean energy source, and not just evaluate the proposal based on price.

The PPA was originally rejected in March. As a result, the legislature – with strong support from the governor – enacted a new law within three months of the initial PUC decision. The new law authorized National Grid to enter into the PPA, as long as there was a provision that would reduce the first-year price if there were cost savings in development and construction, and findings

were made regarding economic and environmental benefits. The new legislation also contained a shortened period for PUC review, changed the definition of “commercially reasonable” and included a statement of policy in favor of an offshore wind project off the coast of Rhode Island.

With the new law in place, Deepwater and National Grid quickly entered into a revised PPA and submitted it for approval on June 30. In the end, the PUC was able to rely on the newly written policy of the state to promote an offshore wind project in the coastal waters of Rhode Island. It concluded that there were sufficient environmental and economic benefits and that the pricing was commercially reasonable. The August order approving the PPA quickly led to an announcement by the state attorney general promising to appeal the decision to the Rhode Island supreme court.

State commissions have typically been focused, to a large degree, on ensuring that ratepayers receive adequate service at just and reasonable prices, recognizing that providers should have the opportunity to earn a reasonable rate of return on needed investment.

However, because of the additional costs of constructing and maintaining offshore wind projects, it can be difficult for such projects to compete on a price-only comparison with onshore wind or coal or natural-gas plants. Therefore, a

state commissioner who believes that a key element of his responsibilities is to protect the ratepayer will find it difficult to approve a PPA that requires an electric utility to pay more to an offshore project for wholesale electricity than it would pay for other resources. Many arguments in favor of and public-policy benefits that support offshore wind can be irrelevant to the final determination by the commission under previously existing law.

Such benefits might include fostering of new industries and new jobs, development in the state, encouragement and promotion of independence for the state's electric utilities from reliance on coal or other carbon-burning fuels, a shift toward developing an independent energy policy for the U.S. to move away from foreign oil, or the added environmental benefits of fuel supplies that are not carbon based.

Because such benefits might not otherwise come within the scope of state regulatory commission review, legislation that expands the scope or otherwise recognizes or requires an offshore element in a renewable portfolio standard (RPS) can be critical.

The following is an analysis of the signed PPAs for the offshore wind industry.

Bluewater Wind/Delmarva Power

Notable for being the first PPA involving an offshore wind farm signed in North America, the June 23, 2008,

agreement between Bluewater Wind Delaware LLC and Delmarva Power & Light Co. stands out for resulting from a government-mandated request for proposal for the construction of new electric-generating resources within Delaware that was open to bids from any type of generating resource.

In fact, Bluewater Wind faced stiff competition from a proposed coal-fired plant, but the ultimate choice was to award the PPA to an offshore wind generating facility. The idea of power generated by a free and unlimited fuel source was compelling to the state, which had endured recent rate shocks as consumer electric prices increased radically following the lifting of rate freezes.

The project proposed and under development by Bluewater Wind is located in the Atlantic Ocean, approximately 11.5 nautical miles east of Rehoboth Beach, Del. Under the terms of the PPA, Delmarva has committed to purchase the energy and capacity associated with up to 200 MW of installed capacity, but the project is contemplated to be as large as 600 MW.

Delmarva has also committed to purchase a quantity of renewable energy credits (RECs) equal to all RECs associated with the energy and capacity sold under the contract, multiplied by Delmarva's percentage entitlement to the project's overall capacity, multiplied by 28.6%. This equation, the REC Multiplier, is based on recent Delaware law, which entitles the utility to receive a 350% credit toward meeting its RPS for RECs received from the project.

Under the original terms of the PPA, the project must be ready to deliver energy, capacity and RECs by Dec. 1, 2014, or

pay damages under certain circumstances for each day of delay after that date. If the project is not complete by May 31, 2016, the buyer can cancel its obligations and the project developers may be required to pay additional damages. The parties have agreed to extend those dates by two years and recently submitted the amendment to the Delaware Public Service Commission for approval.

Pricing under the PPA is structured on an unbundled basis where each product (energy, capacity and RECs) is priced separately. Energy is priced at \$98.93/MWh, and capacity is priced at \$70.23/kW per year. RECs are priced at \$15.32 per REC sold under the PPA, multiplied by the percentage of credits that Delmarva receives toward meeting its RPS requirements for RECs generated by the project. All prices are stated in 2007 dollars, with an annual adjustment of 2.5%.

The delivery period under the PPA commences on the initial delivery date and continues for 25 years, unless project completion is delayed. If the initial delivery date occurs after Dec. 1, 2014 (which may be extended by two years pursuant to the recently submitted amendment mentioned previously), the delivery period could be shortened by up to 18 months under certain circumstances.

During the delivery period, Bluewater is subject to an annual minimum performance requirement. The project must deliver energy in an amount equal to at least 52% of the contract capacity, assuming a capacity factor of 32%. In addition, an event of default will occur if, during the delivery period, the mechanical availability percentage of the project is below 60% for a period of 18 consecutive months, or if the mechanical availability percent-

age (including force majeure events) is below 60% for a period of 30 consecutive months.

Bluewater was required to post a letter of credit in the amount of \$3 million to secure its obligations under the PPA during the development period. Once the delivery period starts, Bluewater must increase the amount of the security to \$6 million.

The PPA was approved by the Delaware Public Service Commission in September 2008. Key factors supporting approval were the 350% credit established by the legislature for RECs generated by an offshore wind facility, as well as a legislative requirement that costs arising from the PPA be distributed among Delmarva's entire customer base through a non-bypassable surcharge to be established by the commission.

Deepwater Wind/National Grid

In the race to be the first to install wind turbines in the water, Deepwater Wind Block Island LLC is a strong contender given the August approval by the Rhode Island's PUC of Deepwater's PPA with National Grid.

The Deepwater project is considered demonstration scale, up to 30 MW, with no more than eight wind turbines to be located in the waters off the coast of Block Island. Under the PPA, National Grid is required to purchase the entire electrical output of the project (both energy and capacity), all associated RECs and other environmental attributes for a period of 20 years following commercial operation.

Commercial operation must be achieved by Dec. 31, 2012 (subject to Deepwater's one-time right to extend the

Comparison Of Off-Shore Wind Power Purchase Agreements

Jurisdiction	Seller	Buyer	Price	Term	Contract Capacity	Project Size	Deadline For Commercial Operation
Delaware	Bluewater Wind	Delmarva Power	Energy: \$98.93/MWh Capacity: \$70.23/kW-per year RECs: \$15.32 per REC	25 years	Up to 200 MW	200MW to 600 MW	December 1, 2016 (L/Ds payable after this date) May 1, 2018 (PPA may be terminated)
Rhode Island	Deepwater Wind	National Grid	Up to \$235.70/MWh, depending on total facility cost; annual escalation of 3.5% begins in 2013	20 years	Up to 30 MW	Up to 30 MW	December 31, 2012 (can be extended by Deepwater until December 31, 2017)
Massachusetts	Cape Wind	National Grid	\$187/MWh in 2013, escalating annually by 3.5% thereafter	15 years	50% of Project Capacity	468 MW	December 31, 2015 (can be extended by Cape Wind until December 31, 2017)
Ontario	Qualifying owners of Ontario projects	Ontario Power Authority (Feed-in Tariff)	C\$190/MWh in 2010, subject to escalation based on CPI	20 years	> 10 kW	N/A	5 ½ years following contract date

Source: Foley & Lardner LLC

deadline for a period of up to five years), or the PPA may be terminated.

The PPA provides for a single, bundled price for energy, capacity and RECs that is pegged to total facility costs, but it cannot exceed \$235.70/MWh in the first contract year, subject to annual escalation of 3.5% beginning on Jan. 1, 2013. The PPA assumes a total facility cost of \$205,403,512; cost savings below that point result in a reduced price for energy and RECs under the PPA. Beginning in the fourth year of the delivery term, each monthly payment due to Deepwater will be reduced by the amount that Deepwater is or would have been eligible to receive in the forward capacity market of the New England Independent System Operator.

Deepwater is required to post credit support (cash or a letter of credit) in the amount of \$10/kW of nameplate capacity during the period prior to commercial operation. Once commercial operation occurs, the credit support must be increased to \$30/kW of installed capacity – subject to replenishment – but cannot exceed \$1.8 million on an aggregate basis.

Cape Wind/National Grid

Cape Wind Associates LLC, clearly the longest contender in the race to put wind turbines in the water, has endured a decade of obstacles and challenges to the development of its proposed 468 MW project in the waters of Nantucket Sound off the coast of Cape Cod. Secretary of the Interior Ken Salazar finally announced in April that the project had completed the federal regulatory review process and was approved. Shortly thereafter, and despite continuing challenges, Cape Wind announced it had reached agreement with National Grid on the terms and conditions of a PPA. In August, the PPA was amended by agreement with the Massachusetts attorney general.

The PPA commits National Grid to purchase 50% of the energy, capacity and RECs produced by the project for a period of 15 years (with a possible 10-year extension) following commercial operation. Commercial operation must be achieved by Dec. 31, 2015, or either

party may terminate the PPA. However, Cape Wind has the right to extend the deadline by one year without posting additional security and up to two additional six-month periods by posting additional security of \$1.7 million for each extension. There is also an interim deadline of Feb. 7, 2011, for receipt of approval of the PPA from the Massachusetts Department of Public Utilities (MDPU). Either party may terminate the agreement afterward.

The bundled price for energy, capacity and RECs under the PPA is \$187/MWh, commencing in 2013 and escalated by 3.5% on Jan. 1 of each year thereafter, and is subject to a number of possible adjustments. The PPA assumes that the project will qualify for the investment tax credit (ITC) established pursuant to Section 48 of the U.S. Internal Revenue Code and provides upward adjustment in the event that the ITC or production tax credit is not available.

If the facility's nameplate capacity is less than 468 MW, the PPA also provides for upward price adjustment, subject to a cap of \$193/MWh. The PPA provides for price adjustment if the facility does not qualify for the ITC. The PPA also provides for downward price adjustments in the event that Cape Wind achieves savings in debt financing or construction costs, or if Cape Wind receives any payments or credits for contract capacity sold in the forward capacity market.

Cape Wind is required to post cash or a letter of credit at financial close in the amount of \$4.6 million to secure its obligations until the commercial operation date. Upon commercial operation, Cape Wind must post cash or a letter of credit, an additional \$4.6 million.

As was the case in Rhode Island, legislation has provided helpful impetus for the PPA.

Section 83 of the Green Communities Act, adopted in 2008, requires each state electric distribution company to solicit proposals for long-term contracts from renewable energy developers at least two times in a five year period. If the proposals are reasonable, the companies should enter into cost-effective, long-term contracts.

In order to provide approval, the MD-

PU must determine whether the project provides enhanced electric reliability in Massachusetts; contributes to moderating system peak-load requirements; is cost-effective to Massachusetts ratepayers over the term of the contract; and, where feasible, creates additional employment. Important for an offshore wind project, the legislation requires that the MDPU consider both the potential costs and benefits of any proposed contract.

The request for approval was filed in May, and at press time, hearings were under way. No date has been set for a final decision.

Ontario Power Authority's Feed-In Tariff

The first and only feed-in tariff (FIT) encompassing offshore wind in North America was established Sept. 24, 2009, by the Government of Ontario under the Green Energy Act passed earlier that year. The FIT program is designed specifically to support development of renewable energy projects in the province of Ontario and offers developers fixed pricing under long-term contracts.

Offshore wind projects benefit from a contract price of C\$0.19/kWh (subject to a consumer price index-based escalation clause) under a 20-year PPA. Pricing is intended to cover total project costs and provide a reasonable rate of return to project investors.

Once contracts are signed under the FIT program, the commercial operation date must occur on or before the date, which is 18 months following the milestone date for commercial operation – set at four years following the contract date. The seller must post security in the amount of C\$20/kW of contract capacity for the development period, and the security will be increased to C\$30/kW of contract capacity upon notice to proceed with project construction. **ENR**

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