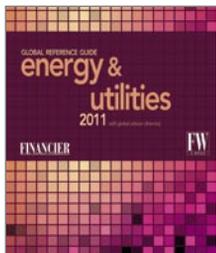


## ENERGY & UTILITIES

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# USING POWER PURCHASE AGREEMENTS TO ADDRESS UNCERTAINTY IN OFFSHORE WIND PROJECTS



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## NORTH AMERICA

**Using power purchase agreements to address uncertainty in offshore wind projects**

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*by Paul Belval, David Doot and Andrew Bobenski | Day Pitney LLP*

AFTER AN EXTENDED development and permitting effort, the US is likely to see in the Cape Wind project its first offshore wind generating facility. In the Northeast US, where land for utility scale wind facilities is scarce and remote from the load those facilities need to serve, offshore wind projects provide a means for producing large blocks of environmentally friendly energy. In today's environment there is considerable uncertainty surrounding the development of offshore wind projects in particular. Creative long-term power purchase agreements (PPAs) provide one essential means of addressing that uncertainty.

Offshore wind is poised to make a major contribution to future power production in the Northeast US, with the list of offshore wind projects proposed in the area growing, but those projects must overcome substantial economic uncertainty. The lengthy and evolving permitting process for offshore projects adds great uncertainty to the development timeline. Scheduling uncertainty translates into cost uncertainty, which is compounded by volatility in pricing for commodities like copper used for these projects, fluctuations in currency exchange rates, and as with all long lead-time, capital-intensive projects, interest rate fluctuations.

The principal means to reduce and allocate economic uncertainty is through a long-term power purchase agreement with a creditworthy purchaser.

Regulated utilities best qualify for purchasing power from utility-scale projects like offshore wind. In the United States, the dual regulation of such transactions at the federal and state levels presents unique challenges. Sellers of offshore wind must ensure that their sales satisfy federal regulatory requirements. Purchasers and sellers may also require approval of state regulators. Compounding the difficulty of demonstrating that prices for offshore wind power are reasonable is the fact that today's relatively low natural gas prices in the US are producing market prices for conventional, non-renewable power generally that are considerably below the prices that must be paid to support offshore wind. Consequently, there is intense focus in negotiating a PPA that balances the desire and need for price certainty against the need to minimize and chance that the negotiated price produces a windfall for developers and investors.

Balancing the risks and benefits in a PPA requires the parties to identify the risks to be shared or mitigated. For example, the risks of higher than expected operation and maintenance costs, and

lower than expected capacity factors are typically borne by the developer, while true *force majeure* events might excuse either party from its obligations under the PPA.

Alternative PPA provisions to deal with construction cost uncertainties include: (i) setting the price under the PPA based on a cost estimate that is at the higher end of a reasonable range and reducing the price through a formula or otherwise to account for any savings; and (ii) setting a target rate of return for a project, based on certain operating assumptions, and sharing through price reductions any construction cost savings that would otherwise increase the return over that target.

A similar sort of cost-sharing mechanism has been deployed for financing costs. PPAs for these large-scale projects, which have indefinite permitting and construction time lines, contemplate project financing but are executed well before the financing for the project closes. Here, the parties agree on a projected rate for the cost of debt financing for a project, but agree also to share any savings from that financing rate through price reductions.

The availability of tax credits in the US can significantly impact project economics, and uncertainty over the availability of these tax benefits can be addressed through the pricing in the PPA. A base price can be determined assuming the availability of the tax credits, with a contractual mechanism to increase the price if credits are not available. Such an adjustment should share the downside of the credits not being available, again to motivate the project to do what it is able to qualify for the credits. Any price adjustment must focus on the availability of the credits, not whether the credit is ultimately used.

To address uncertainty over a project's capacity factor, which affects how much power is generated by the project, one successful tool is an adjustment factor that splits between the purchaser and the developer the benefit of greater than expected production. This can be achieved either through a reduced price for the extra MWh or a credit against future purchase. Any such adjustment factor must consider a long enough period of time to avoid price volatility based on weather anomalies or other short-term production swings.

In short, the ultimate goal for PPAs in the US relating to offshore wind projects is to establish long-term, enduring arrangements for the project's output that assure sufficient revenues to attract capital given the cost and schedule uncertainties, but that do not create a windfall for the project at the expense of the State-regulated power purchasers and their customers. ■

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