

# Wind Hedges Add Security, Introduce Risk

*Many new wind power facilities are relying on financial hedging instruments as a means to guarantee energy pricing for power sales.*

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The American Wind Energy Association (AWEA) 2007 Market Report indicates that more than 5,000 MW of wind projects entered into commercial operation in 2007. That figure represents a 45% expansion of the nation's total wind generating capacity in a single year, and it is 67% greater than the 3,000 MW originally forecast by AWEA for 2007. With the federal production tax credit (PTC) set to expire at the end of 2008, the acceleration of the number of projects coming online is not as surprising as the numbers may suggest.

What is surprising, however, is the number of projects that entered commercial operation in 2007 and were forecasted to come online in 2008 that are being financed without the benefit of an identified power purchaser. More specifically, 25% of the number of wind projects identified in the AWEA report as entering into commercial operation in 2007 and 45% of the number of wind projects under construction as of the date of the report have reported no power purchaser.

Many of these projects, particularly those being developed in the more vibrant electric power markets, such as those in Texas and New York, are believed to be relying on financial

hedging instruments as a means to guarantee energy pricing for power sales. The use of wind hedges reflects the continued maturing of the U.S. wind energy market, and the hedging mechanisms being employed deserve a more thorough analysis to see how these mechanisms work, how they are helpful to some developers but not others, and what other consequences of using a hedge may exist.

## **Wind hedge mechanics**

A wind hedge is a financial arrangement between the owner of a wind farm and, typically, an energy trader or large end user (hedge provider) that is intended to provide a guaranteed minimum energy sale and purchase price for the benefit of both parties. The owner and the hedge provider fix a term for the hedge – typically from seven to 10 years – which usually governs all of the output of the wind farm. The owner sells energy from the wind farm into the local spot market (day-ahead or real-time), and the hedge provider purchases energy in one or more spot markets that may be separate and distinct from the market in which the wind farm is located.

However, in order to assure a minimum price for their respective sales and purchases, the parties establish a

strike price. Each month, if the average price received by the owner is above the strike price, the owner compensates the hedge provider for the difference. However, if the average price received by the owner is below the strike price, the hedge provider compensates the owner for the difference. The transaction is premised on actual energy sales by the owner to the market, so if there is no sale of energy, there is no payment to be made by either party.

The use of a hedge requires a tracking account to be established by the parties – typically the owner – with a funding cap to extend credit to the owner and a fixed limit on the tracking account to protect against excessive losses (i.e., negative mismatches between the strike price and the actual sales price). Monthly settlements are followed by a final settlement at the end of the term of the hedge.

Credit mechanisms are usually put in place by the owner to secure losses beyond the tracking account limit, including promissory notes, letters of credit and cash payments to reduce negative amounts in the tracking account. Notwithstanding these security requirements, by providing a mechanism to stabilize wind farm revenue for the owner and long-term

energy costs for the hedge provider, wind hedges are becoming a financial tool for an ever-growing number of sophisticated market participants.

The use of a hedge instrument for wind farm power sales reflects any number of significant departure points from wind farm power sales that are made using a more traditional power purchase agreement (PPA). These points illustrate the benefits and risks associated with a wind hedge and why hedges may be more appropriate for some owners and not others. Some of the more significant differences between wind hedges and PPAs are set forth below.

### **Purchasing party**

Rather than having an electric utility company purchase the energy output from a wind farm, the energy output is sold by the owner into the regional day-ahead or real-time energy market. As a result, there is no single counterparty that actually purchases the wind farm's energy output over the term of the hedge.

The hedge is, therefore, premised upon the size and reliability of the local spot energy market. Consequently, it is not a surprise that most hedges are found in mature markets such as the New York Independent System Operator and the Electric Reliability Council of Texas.

### **Term**

Rather than having a 20- to 25-year long-term PPA, hedge arrangements typically run from seven to 10 years. In increasingly competitive power markets, many – but certainly not all – regulated electric utilities are no longer required by their state regulatory commissions to enter into long-term PPAs.

Without a glut of long-term PPAs, hedge providers have entered these power markets knowing that they can trade over longer periods of time. The relatively shorter term also conforms to the PTC-driven economics of many wind farms, for which the tax equity participants

“flip” when the PTC benefits expire after the first 10 years of commercial operation.

### **Price**

Because the term of a hedge does not exceed 10 years, the hedge provider may be more willing to use an escalation factor for the strike price that allows the strike price to more accurately track the price of energy in the applicable region. Long-term PPAs rarely have indexed-based escalation factors for fear of eventual disconnect with power markets, and often, they are negotiated with long-term discounting built into the price mechanism.

### **Regulatory approval**

Rather than having a state regulatory agency approve a PPA as a condition precedent to the electric utility company's purchase obligation and ability to pass-through its costs to its ratepayers, a hedge instrument is a purely commercial transaction that requires no regulatory approval. This shortens the time period to bring a hedge to market and allows for greater flexibility in negotiations.

### **Credit risk**

The hedge instrument “super-sizes” issues associated with credit risk. With a traditional PPA, the owner may have to post some form of security, which the owner can simply price into its economic model in a manner not that different from other fixed costs. That security might be equal to six months of power sales under the PPA. The hedge instrument, however, often treats the hedge provider more like a lender than a purchaser, with subordinated security interests and step-in rights that are significantly more aggressive than those retained by a purchaser under a PPA.

In addition, the owner is at risk for the security that it must post to secure any negative mismatch in its tracking account beyond the tracking account limit. These security requirements reflect the fact that the hedge provider does not have a regulated

rate base to absorb contract costs, and therefore, it is highly sensitive to the owner's performance and risk of default.

### **Retention of RECs**

Almost every PPA for the purchase of renewable energy by regulated electric utility companies in the U.S. requires the owner to transfer all of the green attributes associated with the wind farm – including renewable energy credits (RECs) – to the purchaser as part of the transaction.

Owners do not usually receive any incremental compensation for their RECs or other green attributes under such PPAs. Wind hedges, however, allow the owner to sell separately, and receive compensation for their RECs. These RECs, therefore, can be sold to multiple purchasers whose need and value for RECs may vary greatly from those of a regulated electric utility acquiring RECs through a PPA.

### **Sales of energy and RECs**

If the wind farm's energy and RECs are not sold under a PPA, the owner must be organized and staffed to sell energy and RECs. This requirement separates owners with larger wind farms, multiple wind farms or wind farms in different regions from smaller-scale owners. Selling energy into the real-time or day-ahead regional markets requires knowledgeable staff.

Having more than one wind farm allows owners to capture certain economies associated with selling energy into the market. Similarly, selling RECs requires a knowledgeable staff, although the trading of RECs may not be as vigorous an activity for many owners as the sale of energy. Wind hedges, therefore, require sophisticated players, as both parties to the hedge continue to make power sales and purchases and trade RECs. This is why only the larger owners have entered into hedges and why larger energy trading firms have dominated the hedge market.

### **Additional consequences**

As noted previously, the role of the

hedge provider as a creditor of a wind farm creates a new relationship with an owner that is quite different from a traditional purchaser of power from a wind farm. In PTC-driven wind farm ownership and debt structures, the role and timing of debt in a wind project is different from energy projects that are not dependent upon tax equity. Debt for a wind farm provided during construction is supported by anticipated tax equity, which typically – but not always – comes at commercial operation.

Construction loans, therefore, are similar to equity bridge loans. Once

the tax equity is received, aggressive remedies negotiated by the lender for what is effectively an equity bridge loan end up threatening the rights negotiated by the tax equity participants. At the same time, the lender remains at risk for tax equity's "pay-as-you-go" equity contributions during the PTC period. With a hedge in place, the hedge provider also views itself as a creditor of the owner for the large value at risk created by the hedge.

The result of these complicated relationships is that lenders often dispute typical lender rights with hedge

providers and tax equity participants.

These are some of the factors that must be acknowledged by owners and hedge providers considering a wind hedge as the wind energy market continues to mature with ever-increasing options for energy sales and new market entrants. **ENR**

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