THE RETURN OF THE BUYER'S MARKET

Once squeezed out by the rapid growth of large wind farms, mid-scale developments now have room to prosper

BY SARAH LOZANOVA

The wind energy industry has at times seemed unstoppable over the last several years. In 2008, 8,900 megawatts of capacity was added in North America, accounting for more than 40 percent of total new capacity worldwide. But due to financing challenges and falling fossil-fuel costs, 2009 will not be a repeat year. And although this leaves many in the industry scrambling to stay above water, it may provide a golden opportunity for the mid-scale wind energy market, which is comprised largely of schools and municipal utility companies. This market is generally interested in wind farms between 1 and 20 megawatts, and in the past has been crowded out by a hungry large-scale market; in many cases, turbines from large manufacturers simply weren't available for smaller projects.

"It was a double whammy for smaller projects," says Wes Slaymaker, owner of W.E.S. Engineering LLC. "Not only did the turbines suddenly become unavailable, but the prices went up at least 50 to 75 percent from 2004 to 2006. The supply-demand equation switched—turbines became hard to buy, and the price of steel, copper, and labor were rising very rapidly. It was a real blow to folks planning small- and mid-sized projects."

Kathy Belyeu, manager of industry information services for the American Wind Energy Association (AWEA), agrees. "In the heat of all the development that was going on last year, there was definitely the feeling that smaller projects were getting squeezed. If you weren't able to go to the turbine manufacturer and purchase a big quantity of turbines, they weren't really going to talk to you," she says.

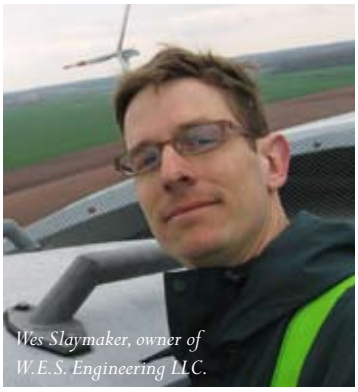
Enter the financial crisis of fall 2008. "Since September or October of last year, it has really been flipped on its head," Belyeu says. "Instead of people talking about the crunch for turbines, there is now more talk about how big the surplus is." Translation: The buyer's market for turbines has returned.

"A municipal utility I'm working with in Illinois is looking at General Electric and Vestas turbines—turbines unavailable to them for several years due to the small size of their project," Slaymaker says. "We're already seeing manufacturers come back and say, 'The steel prices have come down so much that the tower is now $100,000 cheaper.' Since the economic collapse, steel prices have come down at least 50 percent. The cost of labor also has come down because there are a lot of contractors looking for work."

Additionally, much of the mid-scale market is not as heavily impacted by the credit crunch. Bonds finance many municipal utilities and school projects; such projects can either issue bonds or utilize some of the $1.6 billion in Clean Renewable Energy Bonds (CREBs) made available by the federal government. CREBs are interest-free loans that are more affordable than traditional bond financing and don't tap into the bonding capacity of the organization. "A lot of municipal utilities have their own electrical generation," Slaymaker says. "They serve an important function, which is to provide electricity to their community. A municipal utility's goal is different from an investor-owned utility—they're trying to provide the most benefit to the municipality, not necessarily for the least cost. They try to offer their area the most stable electricity pricing." The free fuel that wind provides is often seen as a hedge against inflation—a benefit that can help offset its higher upfront cost. (A big stumbling block for an industrial customer interested in a wind turbine is the length of the payback term. Most companies want to see a payback in three years. With wind, the payback is typically 8 to 12 years or more.) For schools, a major selling point is the added benefit of wind turbines as an educational asset, which is often a fundamental part of the schools' mission. Getting schools to sign on usually requires the financial assurance that they won't have to dig into their own operating budgets to run the project. This can include finding a third party that is willing to take the financial risk, or putting aside a very large repairs reserve fund when the project is financed.

Transmission is another advantage for mid-scales. When local electricity de-

$1.6 BILLION
Amount in Clean Renewable Energy Bonds currently available from the US government


Wes Slaymaker, owner of W.E.S. Engineering LLC.

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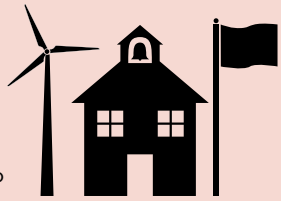
>
> *Kathy Belyeu, AWEA Manager of Industry Information Services*

mand is adequate to consume the power that's generated, it isn't necessary to connect with high-voltage transmission lines to route the power to other population centers. "There's been so much interest in building the larger projects that there is a big queue for getting onto the high-voltage transmission systems," Slaymaker says. "With mid-scale projects, especially for a municipal utility, you don't have to deal with getting onto the transmission system, since it's consumed locally. You get rid of both the cost and the time of dealing with the transmission organizations. If you are going to do 12 megawatts on a transmission line for interconnection in the Midwest, at the minimum you are going to need five years from the time you apply to actually being able to get on that line. It's going to cost $200,000 in electrical studies to get to where you can connect to the bigger line."

However, mid-scale wind projects are still at a disadvantage in some areas, like the economies of scale involved with buying in bulk, compared to large-scale projects. The cost per turbine is lower for labor and transportation costs on larger projects because the expense is spread out over more turbines. Smaller projects also can have higher operation costs. "If the project is too small to have a service and maintenance crew, then your operating costs per turbine are going to be higher," Slaymaker says. "Your risk of having one lemon amongst your turbines is higher. At the same time, a smaller project can choose the same type of turbine as a larger project nearby, so they can easily travel over and service their machines."

This unique opportunity for the mid-scale market may not last long, though. The three-year extension of the production tax credit and the investment tax credit is seen as a very good sign that a lot of wind is going to be built—soon. The feeling on the street, Slaymaker says, is that there are going to be a lot of projects constructed from late 2010 to 2012. Everyone seems to be waiting for the ability to finance projects to improve. And if mid-scale market conditions have indeed shifted enough to create a swell of wind energy development, it will be apparent soon. "The opportunity was just created about a year ago. If it's the real deal, we will start seeing the turbines ordered this year installed in early 2010," Slaymaker says. "But it definitely sounds like there are a number of small- to mid-sized projects working towards turbine purchase right now." EIQ

Wind For Schools



In 2008, the US market for small wind turbines—with capacities of 100 kilowatts or less—grew 78 percent, according to a study released by the AWEA. Increasingly, these turbines are being installed at schools across the country through the Wind for Schools project, launched in 2005 by the National Renewable Energy Laboratory (NREL) and Wind Powering America. The program's goals:

- engage rural schoolteachers and students in wind energy education;
- provide a growing wind industry with skilled engineers by using turbines as a teaching tool for subjects like science and math
- educate local utilities about how to integrate small wind into their distribution systems;
- demonstrate to rural communities the positive socioeconomic attributes of wind and the crucial role such communities can play in the new energy economy.

Governor Ritter of Colorado, for instance, announced in July plans to install 1.8-killowatt turbines at six rural schools. The turbines will generate approximately 300 kilowatt-hours per month, about the amount of electricity used by a small home in a month. SkyStream 3.7, 2.4-killowatt wind turbines on a 70-foot guyed or 60-foot monopole tower, will power the project. The system is expected to cost between $15,000 and $20,000 to fully install in a commercial setting, $7,000 to $10,000 of which goes for equipment and other system-specific hardware. The host school typically provides between $1,500 and $2,500, and the sale of the turbine's environmental benefits will provide approximately $2,500. State-based grants, local donations, or equipment buy-down will provide the remaining funds.