ALL ABOUT EXPANDING THE AMERICAN PIE

From the outset, America structured its wind power markets for big scale projects by big time investors. Citizens keen to install wind turbines locally watched from the sidelines. Meantime, community scale wind power grew to become a European people's movement. But years of lobbying by small wind supporters could be about to pay off, especially now that lawyers have found a way for private citizens to leverage the PTC

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Community ownership of small-scale wind projects lies behind the development of around 70% of the world's installed wind power to date, yet the concept is almost unknown in the United States. Here the sector has been thoroughly dominated by massive projects and big league owners. That could be about to change—and rapidly. Rural Minnesota is emerging as a breeding ground for local development of local wind power.

Farmers and other landowners in the American Midwest have long recognised that leasing property to wind turbine owners can provide steady income that supplements corn and cows. Now they are increasingly coming to realise that owning the turbine can exponentially escalate incomes and rescue farms—and that ownership is well within reach. A recent study suggests that while landowners might receive annual lease payments between $2000-$5000 per turbine, owning the turbine can double or triple that income.

Minnesotans, it seems, have much in common with the European wind energy pioneers in rural communities who championed installation of wind turbines by the people for the people more than a quarter of a century ago. Like them, Minnesota entrepreneurs are showing themselves willing to tackle projects that, along with reliable breezes and suitable land, require daunting approvals, elusive machinery, periodic maintenance, complicated access to transmission grids, a serious level of expertise and what for most folks is a lot of money.

"It's about wanting to own land and have control over your situation—it's kind of a natural thing and we have a lot of those people here," says Beth Soholt of Wind on the Wires, a Minnesota wind power advocacy group. "We call it prairie populism."

Thanks to years of hard work by the local wind lobby and environment groups in Minnesota, state and local government is coming to see that by encouraging local investment in projects, money is kept closer to home and fewer dollars follow the big players out of town. A 2004 report by the General Accounting Office, the investigative

PHOTO: GREG DEVEREAUX

Prairie populism: *For the most part landowners in Minnesota have been observers not owners of the wind turbines surrounding them, but a popular movement is changing all that*

arm of the US Congress, suggests that a single 40 MW project with out-of-state ownership would generate annual revenues of about $650,000 in new county income. By contrast, 20 locally owned projects of 2 MW would generate about $3.3 million annually for the same county.

To that end, Minnesota's 2005 legislature put out a loud call for small projects by way of its Community-Based Energy Development (C-BED) initiative that aims to see 800 MW of locally owned wind projects shoehorned onto the grid by 2010, with Minnesota utility Xcel Energy already committed to signing 20-year power purchase contracts with the owners of 500 MW of C-BED projects by 2010 (page 29).

"It truly is public policy that is driving it," says Lisa Daniels of Windustry, a non profit group promoting wind development. "And the public policy is in place because the politicians have heard from the people who live in the windy areas—and those people want the opportunity to benefit from wind development."

SIGNIFICANT TAX BREAK

Finding ways to locally harness wind's federal production tax credit (PTC), a subsidy worth $19 for every megawatt hour generated for the first ten years of a wind turbine's operation, has been a priority for would-be wind turbine owners. The credit is of no value to individuals, whose tax bills are not big enough to absorb the write-off. But it allows significant ten year tax breaks for companies with large enough revenues to be paying a lot of tax.

"The PTC is a policy written by big business for big business," says Daniels. "That makes it difficult for ordinary people to develop. You have to use special mirrors to make these things work for the smaller guys." Flashing those mirrors is a new breed of financier, bearing equity agreements that after the ten year tax break basically hand over ownership to the local interests in a process

Public policy is driving the market for local scale wind power—and Minnesota governor Tim Pawlenty is pioneereing a path that other Midwest states look likely to follow

called flipping. A standard 20-year purchase agreement with a utility can mean that the local investors make their real money on the back half of the deal. Several large companies, such as California's Edison Capital, Iowa's John Deere Financial and Minnesota's Midwest Wind Energy Finance now specialise in flipping, making their money during the first ten years through the PTC (next story).

An increasing number of incentives beyond the federal PTC have also emerged. More than half the US states have now set a minimum standard for the proportion of renewable energy in future power supply portfolios. Minnesota is committed to obtaining 25% of its electricity from renewable sources by 2025. Grant money and regional tax credits also exist. As a result, the potential exists for a wide variety of community ownership models.

"On one end of the spectrum landowners lease the land and collect the payments," says Soholt. "On the other end, the landowner does everything from organising the other landowners and raising the money to putting up the project. But there's any number of ways in between. In large part it has to do with what kind of appetite a community has toward taking on risk."

THE RISK TAKERS

Among the risk-taking pioneers is Dan Juhl, a Minnesotan with 30 years of energy-related experience. His 10.2 MW wind project near Woodstock, a town of 132 people close to the South Dakota border, went online in 1999 and is considered the first of Minnesota's community-owned breed. Juhl has been helping farmers and small businesses put up projects for the last half-dozen years. He estimates that community-owned projects now account for roughly 160 MW of Minnesota's 722 MW wind power total—more than 22% in a state that ranks fourth in the country for total installed wind power, behind Iowa, Texas and California.

"It wasn't as if I just decided to build a wind farm one day," says Juhl, who helped lobby for Minnesota's C-BED program. "Getting my project going actually took a long while and was a little difficult in those days because the utilities had gotten so used to working with the big players." Juhl and his populist ilk continue to challenge the well-worn system. "A big multinational company can come in and use strong-arm tactics," says Juhl, who has been involved in getting roughly 100 MW of community projects online. "They'll tell a farmer that if he doesn't lease the land, his neighbour will. But they never bother to mention that we could put up the projects for ourselves. There aren't many opportunities that come along that are this meaningful. Local ownership is about survival and rural people maintaining a way of life at a time when so much is going to the multinationals."

SECURING THE HARDWARE

The latest problem for the citizen ownership model is a global shortage of wind turbines as big commercial developers suck up supplies and economies of scale clearly hold sway. Those in the market for 50 or 500 machines can get much better deals than those looking for one or ten. But local collectives get formed, Internet connections link likeminded people as never before and bigger community orders get placed.

"That's the thing about wind power," says Daniels. "It's so modular that every situation can be different. It's all about thinking outside the box." Recent months have seen three turbine makers set up factories in Middle America: India's Suzlon in Minnesota, California's Clipper in Iowa and Spain's Gamesa in Pennsylvania. Most recently, small British company EU Energy, which owns the rights to the German DeWind brand of turbine, said it intends to supply Midwest Wind with 340 MW of DeWind

Riding high: *Dan Juhl atop one of the Vestas turbines at his 10.2 MW Woodstock Wind Farm project in Minnesota which took him about a decade to get built. Juhl has been a staunch lobbyist for Minnesota's new community wind power program*

turbines over six years—all for community-based projects.

The expectation is that citizen wind power will develop as a useful market niche for any machine maker with that kind of interest. "Suzlon staffed the area with service and parts," says Juhl. "That's what we need, people to come in and take care of us."

Not all community wind power supporters advocate replacing utility scale wind development with the local ownership model. "A lot of people see this as the next gold rush," says Soholt. "But once they sign that 20-year agreement, they're on the hook for a lot of different things. Big companies can have a level of expertise that farmers might not have. And the big companies have paved the way in many regards, from upgrading transmission systems to proving that wind power is something that people really want and creating the demand. The big companies make important contributions, too."

A market exists for both models, she says. "We need to expand the pie so that everybody can win," adds Soholt. "We can all work together to expand the whole industry. It doesn't make sense to fight over a hundred megawatts when we can all go after a thousand."

The times have never been riper. "People are starting to connect the dots that the price we're paying for energy is not only on their electricity bill or at the gas pump," says Daniels. "The price is being paid throughout our society. There's a whole thing about energy where most people who are in their 30s, 40s and 50s never had to make energy decisions beyond switching the lights on or off. But now it's in our face, the costs are global and they're strung throughout our economy."

Minnesotans are far from alone in their desire to keep the spoils close to home. Iowa and Colorado are two other states with growing movements. Daniels tells of a recent conference her organisation hosted in Iowa. "We had 500 people from 32 states and three countries," she says. "People wanted to know about the Minnesota model and it was clear that the concept of community wind is spreading through more than the Midwest. It's an idea that's gaining real momentum. Much of it exists in Minnesota and Iowa right now, but measures are coming into play in other states, too."

CAPTURING THE IMAGINATION

Susan Sloan of the American Wind Energy Association says the industry group is suddenly taking a harder look at the upstart phenomenon and promoting lots more dialog. "Community-based wind is capturing the imaginations of a lot of people," she says. "But wind projects require that a lot of pieces fit together, from identifying the right land to securing equipment and permits to selling the power and reaching transmission."

While wind power still represents less than 1% of total US electricity demand, predictions suggest that 3000 MW of wind power will be added to the US grid this year. "We need to have a happy balance," says Sloan. "The two methods need to develop alongside each other if we're going to see the level of wind power penetration that we need as a country. It's just beginning to unfold and we're going to see more and more creative solutions as people keep talking and time goes on."

FLIPPING THE PRODUCTION TAX CREDIT TO FARMERS

Based on leveraging a federal tax credit, the American wind power market has long been closed to local investment in local projects, but some creative financing in America's rural Midwest is opening the doors to an entire new ownership model

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Innovative financing is at long last opening the gates for community wind power developers to access the federal production tax credit (PTC), currently worth $19 for every megawatt hour of wind power sold to the grid. Until now, only companies with enough money on their books to carry a substantial tax burden could benefit from the PTC, putting wind turbine ownership out of bounds for private citizens and any other investor not able to make use of the credit.

In the Midwest that is all changing. With utilities starting to facilitate local ownership of local wind turbines, an upstart band of Midwestern community wind developers focused its attention on leveraging the PTC, which is payable for the first ten years of project operation. Working creatively with companies that specialise in securing financing as a ten-year loan, the developers found a way.

The system they came up with is dubbed "flipping." It provides for technical ownership of a wind plant for the first ten years by a company that can make use of the PTC, before ownership reverts to the land owner. "For the first ten years of a project the PTC investor owns 99% and the landowner owns 1%. Then, after the ten years, the ownership gets flipped," says Ken Valley of Midwest Wind Energy Finance, one of a group of specialised firms helping community wind ventures get off the ground.

> *Up until we got started in the market it was almost impossible for landowners to get their projects financed*
>
> KEN VALLEY, MIDWEST WIND

Midwest Wind began its community ownership program four years ago when few were interested in small-scale projects. It specialises in lining up PTC investors and helping structure the projects. "Up until we got started in the market it was almost impossible for landowners to get their projects financed," says the company's Ken Valley. "It was also very difficult to get the legal work done and if something with a turbine failed, the landowners were on the hook. But now, as the market matures, there are ways to structure these 20-year deals so that the investor gets his money in a ten-year flip model. It ends up being a win for everybody."

The attraction of flipping is increased in Minnesota by the state's Community-Based Energy Development (C-BED) statute, which compels utilities to provide purchase agreements for 800 MW of community wind projects by 2010 (page 29). C-BED creates a market structure for utilities to buy wind power at a higher rate during the first ten years, essentially helping pay down the loan. For the second ten years—and out from under the burden of a mortgage—a community group takes ownership.

GETTING EASIER

The financing model has helped spark a broadly defined community ownership model—and means that small-scale developers in Minnesota are learning to come out ahead over the 20-year lifetime of a project. "As the market matures it becomes easier for a landowner to get better terms," Valley says. "Our niche is projects between four and twenty megawatts. Most of them involve six or seven turbines. We work with the landowners and developers and put them together with the financing."

A new twist was added to the Midwest Wind business model last month when the firm signed up for 340 MW of DeWind turbines for use in future community projects (previous story). "This gives landowners additional options for securing turbines in a tight market, although we'll finance projects with any type of turbine. The goal is making sure the project gets built," says Valley. "These communities can have a hard time making it work and there are a lot of issues that have to be confronted. My model is dealing with one of the major issues out there—helping communities get the financing they need."

Midwest is not alone in the market. California's Edison Capital and Iowa's John Deere Financial, the credit arm of the ubiquitous John Deere agricultural machinery supplier, are also involved. John Deere last year bought 30 MW of wind turbines from Indian company Suzlon, with seven of them destined for Minnesota. At the time, the company's Karl-Heinz Mertins said the company sees community based wind energy as an economic opportunity for rural America. "Instead of everybody being on their own, John Deere would like to buy wind turbines and distribute them throughout the country," he said. "[Deere] would like to streamline the business while taking the time and cost out of wind energy installations."

Last month the company declined to comment on its wind power activities. It did, however, advertise for an electrical engineer to plan and supervise wind plant construction, including the electrical engineering design and interconnection. In the advert John Deere Credit said it had "recently entered the renewable energy arena with a business unit that focuses on community-based wind projects." The company has already invested in a host of wind energy projects in the rural US, which not only will drive additional income for farmers but will also meet our nation's growing demand for electricity. As the demand for wind energy continues to grow, John Deere Credit is poised and ready to provide project development, debt financing, and other services to those interested in harvesting the wind domestically and abroad."