

A handful of pioneers are already introducing turbines on their land, either by signing a lease with an energy company, building a small turbine themselves or joining a co-operative. Now, new provincial regulations may make it easier for small players to get involved

by KATE PROCTER

WIND POWER

A 'New Agricultural'

The wind, once a main source of power for Ontario farms, may again provide not only electricity but also a steady source of revenue – one that is independent of markets, world politics or other issues that plague farm income levels.

Landowners, accordingly, need to be aware of their options and watch for new government regulations that may make it easier for small wind-powered operators to sell electricity. Even for those not able to construct a turbine large enough to sell power back to the grid, cutting production cost through savings on electricity may make a wind turbine an economically viable option for farms.

In order to reduce his electricity costs and develop an alternative energy source, Keith Burns decided to put up a turbine on his dairy farm near Arthur. He has 235 cows, 150 heifers, three houses, a workshop and a 150,000 bushel grain elevator. He was spending about \$30,000 a year on electricity to

run his operation but realized that his location might be suited to wind power.

The 80 kW turbine he installed in 2004 cost \$150,000, generates 10,000 kW of electricity per month and has saved him about \$15,000 in the first year of operation. He calculates that it should pay for itself in 10 years, providing him with a 10 per cent return on investment. Burns is so pleased with the turbine that he is considering constructing two more on other farms that he owns to provide energy for his pig barns. There are a number of factors to consider when thinking about constructing a turbine. Clearly, the amount of wind is important and should be checked for at least a year before any major decisions are made. Another big consideration is electrical service already on the property. Burns already had three-phase wiring, which enabled him to connect his turbine to the grid.

But getting three-phase to your

property can be expensive, depending on the specific location, number of poles required, whether the wires need to go overhead or underground and other factors. Burns hired John Hogg, owner of Free Breeze Energy Systems Ltd., to construct his turbine. Hogg took care of the paperwork involved with constructing the turbine, which did not require a building permit in his township, though some do.

One disadvantage of a turbine is that it does not operate in the hot days of summer when the wind does not blow, notes Burns. He has his turbine connected to the electricity grid and is on the Net Metering Program. If his turbine produces more electricity than he uses, he collects credits from his energy supplier to be used when he needs more than his turbine can provide. This works well for times when there is less wind or when electricity demand is higher. He will never get paid for excess electricity produced,

WIND POWER

'Natural Crop' for Ontario?

Melancthon Township project
near Orangeville.

but instead a record is kept of electricity supply and demand.

The program has recently been improved to allow more time to keep and use credits. The amount of energy that can be generated under the program was also increased from 50 to 500 kW.

Removing the barriers

Ontario Federation of Agriculture (OFA) vice-president Paul Mistele thinks energy will be a big issue in the next five years.

Energy production will be agriculture's saving grace, he asserts, but windmills alone aren't the answer and manure digesters are going to have to be employed in some way.



Paul Mistele

Farmers need to understand that new government regulations due out soon may make it more profitable for landowners to have a small turbine of their own than to be part of a lease arrangement

with a large wind energy company.

The Minister of Energy is currently reviewing recommendations that will help it develop a "Standard Offer Program." This program will remove

Rising hydro rates mean a quicker windmill payback

by DON STONEMAN

Fergus area pig farmer Peter Delange isn't bothered by rising hydro costs. They justify his \$170,000 investment in an 85 kW wind turbine that is matched to his farm's needs.

Built in Holland, the windmill was erected by Free Breeze Energy Systems Ltd. of Waterloo and came online in December. According to engineer's calculations, the mill should produce slightly more than the requirements of the farmhouse and the 730-sow SEW unit that Peter operates with his wife Betty.

When the windmill is running, the excess power generated is put into Ontario hydro lines. When the mill is producing less, Delange draws back on that. Essentially, he says, Hydro One, which delivers electricity to his farm is "a big battery" for his windmill's power generation. Delange takes advantage of the utility's "net metering program," says Free Breeze Energy engineering technologist Bob Day. Dual meters monitor electricity produced as well as electricity used.

Until recently, net meter users weren't able to carry extra generation into the next billing period. Late last year, the province announced that it was modifying its net metering rules so that small generators could take a carryover of generation into the next 12

months, rather than lose the extra kilowatts at the end of each 30-day billing period. It's not clear, however, if that modification will be in place for Delange to use any time soon.

Delange based his 9.5-10 year payback on his 2004 Hydro costs when monthly bills were roughly \$1,500 to \$1,600 a month. But costs increased by six to seven per cent last year and Hydro officials are talking about another increase this spring, Delange says. "As rates increase, we get a quicker payback."

"We've never had bills as high" as last summer, Delange says, and he predicts that they will climb because electricity generators and distributors suffered a \$400 million deficit last year. At 140 feet in height, his windmill is a little more than half the size of the units near Shelburne, which measure 240 feet tall. It was erected in early December about 250 feet from his house. Is it noisy? "When it is running, you can hear it," he says.

Delange did not bother to put up a test tower before this windmill was constructed. A neighbour on the same road built one and Day says sharing of wind information between sites becomes possible as more turbines are constructed in a given area.

Zoning to construct this windmill



Delange didn't need a permit to build the tower.

was not a concern, Delange says, and the local township didn't even require a building permit before it was constructed. "It's not a building," he says. "It is a tower."

By contrast, he needed a building permit to construct a 17-feet by 17-feet building to house the electrical panels and a new diesel standby generator.

Maintenance is scheduled to take place twice a year. The tower is 4.5 feet square. The cement pad is 20 by 20 and most of that will be covered by topsoil in the spring. An underground cable connects the tower to the farmstead.

"There is no subsidy whatsoever on any of these windmills," Delange says. Governments are promoting it, "but they aren't doing it through the pocketbook." **BF**



Keith Burns

some of the barriers that have kept small, renewable energy generators out of the business of producing electricity. Ted Cowan, a researcher with the OFA, recommends that farmers wait until the rules come out, probably in March or April, before signing anything. These rules will allow landowners to determine more accurately how much money they could make by putting their own turbine in place on their property.

They may still decide to go with a wind company, but knowing what their options are will give landowners a better sense of what their wind is worth. "They then have a position to negotiate from," says Cowan.

Gary Eagleson is a farmer and part owner of Canadian Green Power, a company that develops wind farms in Ontario. "A farmer could realize \$15,000 on 100 acres and not have to turn a key," says Eagleson.

His company pays landowners \$7,700 per turbine and usually situates one turbine on 50 acres. He estimates that a farmer will generally lose between

one and three per cent of land for each turbine constructed, including the turbine area and access roads. While farmers may consider forming a co-operative with their neighbours and building their own turbine, Eagleson is not optimistic about this option, noting that every farmer has different abilities with regard to risk-taking and financing.

Even getting equipment can be a challenge, since demand for turbines is currently greater than supply. Once a turbine is ordered in a competitive marketplace, it must be constructed and properly maintained. Eagleson recommends that farmers have a lawyer review any lease arrangement before they sign. If a company approaches several landowners in an area, they can get together and save legal fees by hiring a lawyer to represent their interests collectively.

Canadian Hydro Developers is the company responsible for constructing one of the largest wind farms in Ontario, located in Melancthon Township in Dufferin County. The first phase of the project comprises 45 tur-



Garry Matthews signed a 20-year lease with Canadian Hydro Developers.

bines, cost \$125 million and has a total installed capacity of 67.5 megawatts (MW), enough to supply energy for about 20,000 homes.

“Ninety nine per cent of the people embraced the idea. They just wanted to make sure it was done right,” says Debbie Fawcett, the township’s deputy mayor. Most people, she believes, recognize that using wind energy will have long-term benefits for everyone. Pollution will be reduced, as will society’s dependence on nuclear energy. Even so, beauty is in the eye of the beholder. “Some people absolutely can’t stand them, others think they are awesome,” she says.

“Wind energy is not the only answer, but it is part of the solution” to providing renewable energy, says Garry Matthews. A beef farmer, retired teacher and mayor of Melancthon Township, he has become a huge proponent of wind energy. Matthews has two turbines on his 100-acre property located near Shelburne that are part of the Melancthon wind project.

His farm, which is located in the highest part of southern Ontario, has not changed much since the towers were constructed there. Canadian Hydro Developers approached him about three years ago and has been very good to work with, he says. The people involved collaborate well with the farmers and try to be as unobtrusive as possible.

The turbines and access road combined take up about two acres, says Matthews. He has signed a 20-year lease and expects to get paid between \$5,000 and \$8,000 per turbine per year. Each turbine has a meter that is read monthly.

Matthews is paid based on the price of electricity and the amount produced by the turbines on his property. He has seen a slight decrease in production on his land because they take up space, but he feels he is adequately compensated. Not all lease agreements take the price of electricity into account because the wind energy company agrees to sell the energy provider – Hydro One, for example – electricity at a set price for a set number of years. Energy-generating

companies tender with the Ontario government to provide this electricity and the competition can be fierce.

Cowan cautions landowners to check their lease carefully to make sure that the electricity generated on their farm is tendered through the government rather than through a holding company. While both options provide a flat rate of payment, a tender with the government will be at a reasonable level, while payment levels offered by a holding company may be very low. One of the downsides of the wind farm is that it does change the landscape. While Matthews' wife, Dorothy, calls the turbines "majestic," not everyone feels that way. "If you don't like them, you'll find every reason in the world to put them down," says Matthews. In the coffee shop, he has heard that the turbines will suck up children and small animals, pollute the ground water and cause sterility in his cattle, none of which are true.

It took people 100 years to catch on to what the pioneers used for power. "It is a coming thing and why shouldn't we get on board?" asks Matthews. "I guess it is the new agricultural crop."

Exceeding the goal

Ontario currently has a goal of generating five per cent of its power, or 1,350 megawatts (MW) from renewable resources by 2007 and 2,700 MW by 2010, explains Chris Holz, communications advisor with the Ontario Ministry of Energy. "Wind is a large portion of that," he says. The Ontario government has already signed agreements for over 1,300 MW with a variety of wind companies. "The reality is that we've exceeded the goal," says Holz.

While the government hopes to continue developing renewable energy sources, there are capacity restrictions in certain areas of the province. This can change, however, as transmission equipment is upgraded.

As Canadian Hydro Developers moves into Phase Two of its project, Fawcett says there have been more objections than there were for the first phase. Now that people have had a chance to see the 45-metre-high struc-

tures, they want larger setbacks, especially from road allowances. Phase Two will see the construction of an additional 88 towers in the area.

The township has benefited in part because the company had to improve some roads to enable them to handle the construction equipment required to build the turbines. The township has also rezoned land and raised taxes on the places where the turbines sit. The corporation pays for this tax increase and landowners should ensure that any lease or option they sign includes such a provision.

In the past decade, many large wind energy companies have moved into Ontario and optioned thousands of acres of land. When a company approaches a landowner and options the land, it means that the landowner signs a contract with the company. The company can then proceed to study local wind patterns, determine the costs associated with linking to the electricity grid and place a tender to provide energy to the Ontario power supply.

If everything works out and the wind farm is scheduled to go ahead, the landowner is then obliged to sign a lease with a power company, of which Canadian Hydro Developers is just one of several now operating in Ontario. Signing an option locks the landowner in to a very long-term arrangement. Leases often cover 20 years or more and may also have a renewal clause written in for additional time after that.

Renewal clauses may also give the option to renew to the wind power company, but not the landowner, who may be obliged to renew if the wind company wants to continue. So while the lease may appear to cover 20 years, the actual period could be 40 years or more by the time the option period, construction phase and renewal times are factored in.

Leases with wind farm companies have advantages. Landowners who are careful to ensure the lease protects them and their property adequately are provided with a fixed income for many years.

However, leases are not for everyone. They are long-term and restrict certain uses of the farm. Once the turbine is in place, building barns or silos may not be possible. No one knows how technology and society will change over the

course of 20 or 30 years and some people may be uncomfortable locking into such an arrangement.

'Devastating impact'

Glen Estill is the president and majority shareholder of Sky Generation Inc., located near Lion's Head. Sky Generation is a commercial wind developer that owns a 1.8 MW turbine connected to Hydro One's distribution feeder which produces enough electricity to supply 500 homes. The turbine was built in November, 2002, and sells its power into the spot market.

In the past, the government has made life difficult for smaller generating companies such as Estill's. His original business plan was thrown out of whack when the Tory government of Ernie Eves announced a price cap on electricity rates two weeks before he was due to start producing. Electricity retailers effectively became the only people allowed to sell green power. "My only sales outlet was shut down," says Estill. "Regulatory changes had a devastating impact on my business."

While Estill's operation may be considered small relative to large multi-turbine wind farms, his turbine still cost \$3 million to construct. He has 13 private investors and fully intends that his business will make a profit, if not on the time line that he had originally planned.

Estill is planning to expand his operation to include two more turbines in 2006 because he has new power purchase agreements with Bullfrog Power and Select Power, two green market electricity companies. These companies allow regular electricity consumers to purchase energy that has been produced from renewable sources, such as wind energy.

People agree to pay a premium and are guaranteed that a percentage of their power comes from renewable resources.

Asking consumers to pay more is a fairly unconventional system, acknowledges Estill, and difficult to get people to buy into. He compares it to the charge applied by some municipalities for garbage bags.

Every time you throw on a light, they fire up the coal-powered generating station, says Estill. Paying more for

green energy is a lot like paying for your bag to take out your garbage.

Estill is in favour of the Standard Offer contract because he says it will enable smaller energy producers to get into the market. "If the government does this, it is conceivable that a number of small players can participate," he says.

Having a number of small energy producers around the province is desirable because it is a better way to harness

the energy of the wind. "It is very unusual for the wind to stop in all places at once," he says.

Producing energy close to where it is required is another advantage of having generating capability spread around. Estill says that nine per cent of the electricity produced in Ontario is lost simply in transporting it from the place of generation to where it is needed. That means the second largest coal plant in

Ontario is doing nothing but making up for the losses, he says.

There is also a benefit to having local people directly involved with wind energy. There is better acceptance when people know that they have a stake in producing energy that is from a sustainable, renewable resource, says Estill. He cites studies conducted in the United Kingdom showing that, while people may be upset at first, they do get used to seeing large turbines.

While Estill is a strong proponent for small energy operations, he cautions landowners who are thinking of constructing a commercial size turbine such as his. It is a substantial job that involves lots of permits, zoning changes, environmental assessments and a sound financial plan. "It is a pretty arduous task that is all driven by government policy," he says. It requires time, inclination and the ability to raise capital. "At the end of the day, the government will decide, based on what farmers tell them," he says.

Revenue may boost land values

Landowners usually wonder how a large turbine will affect the value of their land. "I wish I knew," says Tom Nolan, senior appraiser with Farm Credit Canada (FCC). Wind farms are simply too new and he has not seen enough consistency in lease arrangements to know how land values will be affected in the long term.

Wind farm companies lease for long periods on the basis of the land used by the turbines and access road, and lease agreements are all different, says Nolan. "As an appraiser, I would want to see the lease," he says.

Sometimes leases include a payment that takes into account inflation. Nolan cautions landowners to be careful with this. Historically, land values have risen at a faster rate than the consumer price index, so while the payment on the lease may go up according to the rate of inflation, it may not go up as fast as the value of the land it applies to.

"I think it will increase the land value because of revenue," says Wayne Ritgen, a representative with Royal

LePage near Goderich. With only two or three turbines constructed in his area near Lake Huron, Ritgen acknowledges that it is too early to say for sure how the massive structures will affect land values.

However, he has dealt with one farm that had a turbine located about one mile away, in between the farm and the lake. He had multiple offers on the farm, which eventually sold for higher than the list price. Of all the enquiries on the property, he only had one person object to the turbine because it was on the site. It is more common for people to favour a farm with a lease than without because it provides a steady source of income, he says.

For his part, Matthews says that in Melancthon Township real estate companies and banks have had no qualms about the turbines affecting the price of land. In the past month, he says, three farms close to the turbines have been sold and land values were not affected at all. “If I was buying land with a wind turbine, it would increase the value of the land because you can do something with it,” says Burns.

As energy prices rise, consumers and landowners should consider the choices available. They range from a low commitment, such as purchasing green power, to constructing a private turbine on a farm. As with all long-term, contractual agreements, a relationship of trust between both parties is perhaps the most important component of all. When asked for advice to farmers thinking of constructing a turbine, Burns replied, “Build it. But you better go big or stay home.” **BF**