



Wind GENERATION

A newsletter for Michigan's wind energy pioneers

INDUSTRY NEWS

Michigan

● The American Wind Energy Association ranks Michigan 14th in terms of wind production potential. The state lags behind other Midwestern states in terms of installed generating capacity.

But Harvest Wind Farm, the state's first commercial wind farm, a 32-turbine, 53-megawatt capacity installation, is operating near the Elkton-Pigeon area in Huron County.

The recent passage of a Renewable Portfolio Standard (RPS) requires 10 percent of Michigan's power to come from renewable sources such as wind.

The Michigan Thumb Windpark I — a 46-turbine farm with a capacity of 69 megawatts that will sell power to Consumers Energy — is slated to start operating this year. Both developments are owned by John Deere Renewables.



Nation

● The U.S. currently produces about 1 percent of its electricity from wind power, however, wind is the fastest-growing source of renewable energy in the country.

The Department of Energy has studied what it would take to increase that to 20 percent by 2030 and found the goal is ambitious, but can be met.

Experts say we possess abundant

Getting the power generated by wind turbines located in remote regions onto the electric transmission grid is a major challenge.



potential to produce wind power. They expect the biggest challenge will be transmitting that power from remote regions of the country to the electric grid so it can be sold to consumers.

The nation's power system needs a significant expansion to handle the job.



FAST FACT

● The top five states in wind capacity installed:

- Texas — 4,356 MW
- California — 2,439 MW
- Minnesota — 1,299 MW
- Iowa — 1,273 MW
- Washington — 1,163 MW

Michigan is expected to have about 125 MW of installed capacity by the end of 2008.

Source: American Wind Energy Association



Consumers Energy already gets about 5 percent of its electricity from renewable sources. Wind power will lead the way as we expand our efforts to create more clean energy and protect the environment.

Planting the Seeds for Renewable Energy



BY DAVE JOOS, PRESIDENT AND CEO, CONSUMERS ENERGY

We're seeking partners and fellow pioneers who share our vision of wind power's potential to positively impact our environment, economy and energy future.

GROWING UP IN the Midwest gave me a deep respect for rural America. The ingenuity, resourcefulness and hard work of farmers and other landowners have sustained our nation and much of the world for centuries.

Now, this careful stewardship also can help fuel our energy future.

How?

The answer is evident to anyone who's beheld a summer breeze rippling through farm fields: Wind.

This abundant and untapped source of renewable energy places Michigan farmers and rural landowners on a new frontier of opportunity. Today, you can plant the seeds for a critical source of green power while protecting the environment and preserving the land you love.

Consumers Energy shares your pioneering spirit. We're prepared to work with you to bring the benefits of this new energy frontier to Michigan customers.

Wind now generates just 1 percent of the electricity in the U.S. That's about to change dramatically. Volatile energy prices, growing demand for electricity and the need to cut fossil fuel emissions have sparked the search for more renewable power.

This fall, Michigan adopted a Renewable Portfolio Standard (RPS), which requires 10 percent of the power supplied by Consumers Energy and other electric providers to come from renewable sources such

as wind. We welcome the new standard, which we're on target to reach through our Balanced Energy Initiative, a comprehensive plan to meet the energy needs of our 1.8 million customers for the next 20 years.

About 5 percent of our electricity comes from renewable power sources such as hydro and landfill gas.

Wind will lead the way on the renewable energy front. We plan to build wind farms — clusters of wind turbines that capture and convert wind to electricity — in Michigan and are currently searching for the best sites. We consider many factors to find ideal locations, including wind speed and direction, local ordinances favorable to development and access to the state's electrical transmission system.

Most importantly, we're seeking others who share our enthusiasm and vision for wind power and how it can positively affect our environment, economy and energy future.

Homegrown power increases our energy security by stabilizing prices and reducing dependence on imported oil. It also will produce much-needed revenue for Michigan's rural landowners and generate tax dollars to revitalize small communities.

Wind-powered electricity is clean, renewable and plentiful. We look forward to a long and fruitful association with Michigan's wind energy pioneers.



Much of Michigan's landscape is well-suited for wind farms.

Wind will lead the way on the renewable energy front.



SOLAR



WIND



BIOMASS

RPS in 3 Easy Pieces

1 What is the RPS?

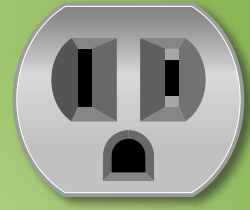
It's short for "Renewable Portfolio Standard," a recently adopted state law requiring that 10 percent of the power utilities supply to customers comes from renewable sources such as wind, solar and biomass. Utilities in Michigan must meet the goal by 2015, and reach a series of goals along the way. Companies such as Consumers Energy can generate up to half of the renewable power, and must buy the rest from other companies. In all, 28 states have established Renewable Portfolio Standards, which are designed to reduce greenhouse gas emissions, provide cleaner air and help create jobs.

2 How does Consumers Energy plan to meet the RPS?

With wind, mostly. The company is investigating and developing a wide range of renewable energy sources as part of its Growing Forward strategy to invest more than \$6 billion in its utility operations over the next five years. The state's potential to produce wind power, especially in places such as Mason and Tuscola counties, means Consumers Energy plans to invest heavily in harnessing the wind. In all, the company — which currently gets about 5 percent of its power from renewable sources — will have to get about 4 million megawatt hours of electricity from renewable sources to meet the RPS. The company expects roughly 2.5 million megawatt hours will come from wind.

3 How does the RPS affect easement holders?

Now that the standards have been set, Consumers Energy can proceed with its plans to develop wind farms in Michigan. The first step is to construct temporary meteorological towers to measure where the wind blows with the most frequency, and its speed and direction. Finding those spots — a process that will take up to two years — will help the company determine which areas are best suited for development. Simply put, the goal is to pinpoint the ideal locations to construct turbines, capture the wind and generate electricity.



Plugging Wind into Perspective

The energy generated by wind is typically measured in megawatts (MW), which represents 1,000 kilowatts. A typical household uses 10,000 kilowatt hours for its annual electricity needs.

Study Says

- Passing the RPS was a major step forward for Michigan's wind industry. A recent study by Michigan State University's Land Policy Institute projects the legislation could lead to:
 - Approximately 780 megawatts per year in added wind capacity
 - About 1,100 construction jobs per year for the next two decades
 - Nearly \$5 million in lease payments to landowners per year by 2010
 - Perhaps as much as \$6 billion per year from employment and the impact of manufacturing wind components in Michigan for wind farms in the state

Thumb's Newest Set to Spin



Above: Wind turbines sprout up from the 560-acre Briolat Farm. Below: Charlie Briolat and his son, Seth.

ON A RECENT October morning, Charlie Briolat was waiting for the temperature to drop so he could harvest sugar beets on his 560-acre farm near Ubly.

But soon, the 51-year-old farmer will have a new crop that produces constant yields while requiring no effort from him and very little help from Mother Nature.

Briolat leased easement rights to the Michigan Thumb Windpark I, which is building five large turbines on his property. The windmills will produce electricity that's sold to Consumers Energy and he'll get a financial benefit.

No planting. No sweating. No worrying about the weather. Just profit.

"I'm 100 percent behind the project," said Briolat, who also grows corn and dry beans and raises beef cattle. "To me, the windmills are just like another cash crop sitting there planted. But you don't have to worry about the input costs fluctuating."

Michigan Thumb Windpark I, which recently was bought by John Deere Renewables, LLC, is the second commercial wind farm in Michigan. It's expected to be complete by the end of 2008. When it's



"Obviously, this is as clean a type of power as there is. We have to wake up and realize we can't keep doing what we're doing. It's time to move forward."

— CHARLIE BRIOLAT

operational, 46 turbines will crank out enough electricity to power about 20,000 average homes.

The wind farm is expected to generate more than \$3.5 million in property taxes over the next 20 years for Ubly, which is situated in Michigan's Thumb.

Farming is a family business for Briolat, who inherited his father's land and hopes to pass the operation to his son, Seth.

Wind power will generate a stream of revenue to help ensure the farm's future financial success. But Briolat is equally pleased that producing renewable energy will protect the fields where one day grandchildren may play, and perhaps work.

"I'm for green energy," he said. "Obviously, this is as clean a type of power as there is. We have to wake up and realize we can't keep doing what we're doing. It's time to move forward."



Did You Know?

The federal government's recent \$700 billion Emergency Economic Stabilization Act helped the wind industry.

That's because the legislation, geared to help struggling financial institutions, also extended a critical tax credit for wind production that would have expired at the end of 2008.

Proponents note that the tax credit — 2.1 cents per kilowatt hour of wind energy produced — is crucial to industry development.

Next Steps

Consumers Energy recently began constructing meteorological towers in Mason and Tuscola counties, where it has secured more than 28,000 acres of easements to develop wind generation farms.



Meteorological tower installation in Mason county.

The towers — four in Mason County and three in Tuscola — will collect data over the next two years to help determine the best locations to place wind turbines.

Consumers Energy should complete construction of the seven towers, each of which stand about 180 feet tall, by the end of this year. The company also plans to refurbish two existing towers in Mason County.

Read more details about our plans and progress in the next issue of Wind Generation.