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State ventures into energy alternatives

*BY KATHERINE YUNG
FREE PRESS BUSINESS WRITER*

Alternative energy encompasses a broad range of technologies. Michigan economic development officials and NextEnergy, a Detroit nonprofit organization, are spending the majority of their time on four areas: wind, advanced energy storage, solar and biofuels. Here's a look at each:

Wind

Michigan's manufacturing prowess and skilled workforce could be utilized to make the thousands of parts that go into a wind turbine. NextEnergy is working with auto suppliers and other manufacturers to help them win business in this area.

"Our manufacturing base maps better to wind than anything else," said Dan Radomski, NextEnergy's vice president of industry services.

Just ask the proprietors of Ort, which makes huge gearbox covers and other parts for wind turbines in its factory in Erie. In the last eight to 10 months, it took on debt so it could invest \$5 million in new equipment to serve the wind and solar markets, which now account for nearly 35% of Ort's business.

"Michigan has potential," said company President Robert Milano. "But the mentality has to change. You have to be aggressive. You have to be competitive."

The state already boasts 27 wind energy suppliers, according to NextEnergy. But it still lacks a wind turbine manufacturer.

"That's the big hurdle," said Martin Dober, vice president of new markets for the Michigan Economic Development Corp.

To attract a turbine manufacturer, experts say the state needs more wind farms. Michigan ranks 14th among states in wind energy potential, according to the American Wind Energy Association.

The state's first commercial wind farm, Harvest Wind Farm near Pigeon, started generating power for its only customer, Wolverine Power Cooperative, this spring.

Advanced energy storage

Economic development officials and Detroit's Big Three automakers are trying to bring to Michigan the production of lithium-ion batteries for electric and plug-in hybrid cars.

Continental AG and Compact Power, the two suppliers competing for the contract to supply batteries for the Chevrolet Volt, have said they will build production facilities in Michigan if selected.

Battery development and assembly makes sense for Michigan because of the presence of Detroit's automakers and the state's dominant role in automotive research and development, officials say.

Several battery developers such as A123 Systems Inc. do R & D work in Michigan. But when it comes to manufacturing, experts say the state will have to find ways to be competitive on a cost basis with rival locations. One battery maker, EnerDel Inc., recently announced plans to open a manufacturing plant in Indiana.

Solar

Michigan is home to two leading solar industry suppliers, Hemlock Semiconductor Corp. and Dow Corning Corp., and a major thin film solar panel manufacturer, United Solar Ovonic.

Hemlock and United Solar have undertaken major expansions in the state, adding hundreds of workers.

Hemlock, which is majority-owned by Dow Corning, is one of the world's largest producers of polycrystalline silicon, which is used to make solar cells that convert sunlight to energy in solar panels.

It is looking at Michigan and Tennessee as possible sites for a new plant. In August, Gov. Jennifer Granholm approved huge tax breaks for Hemlock if it builds the plant in Michigan. Rick Doornbos, Hemlock's chief executive officer, said Michigan boasts a skilled workforce but its cost of energy is higher than in other states.

Hemlock's business is so strong that it is turning customers away and is in the midst of expanding its plant in Hemlock for the third time.

State officials hope the company can attract some of its customers to Michigan. One such company, Evergreen Solar Inc., is building a plant in Midland that will produce materials for its solar panels.

Midland-based Dow Corning also has set its sights on the solar industry.

In May, it opened a \$3-million research and development center in Freeland for next-generation technologies for solar panels. It already supplies many of the materials that go into them, such as adhesives and coatings.

Further south, in Auburn Hills, United Solar, a subsidiary of Energy Conversion Devices Inc., is growing rapidly, too. In June, the maker of thin film solar panels, which do not use polycrystalline silicon, launched a second production line at its factory in Greenville and is building additional lines there. It also makes the panels in Auburn Hills.

Biofuels

Michigan aims to become one of the leaders in the production of cellulosic ethanol, which is made from wood chips, switchgrass and other nonfood agricultural crops.

Only four other states possess more timberland than Michigan, according to the Michigan Forest Products Council. The state leads the nation in the amount of new annual forest growth that is not harvested.

To take advantage of these resources, economic development officials convinced Mascoma Corp. of Cambridge, Mass., to build a \$250-million cellulosic ethanol plant in the Upper Peninsula. It will begin operating in 2012 and employ 50 workers.

The facility could become one of the nation's first commercial-scale cellulosic ethanol plants.

Mascoma may be just the beginning. Steven Pueppke, assistant vice president for research and graduate studies at Michigan State University, envisions a statewide network of biorefineries that would produce a variety of materials for the auto and other industries.

"We're moving very fast, but we're in the early stages," he said.

Mascoma's plant won't be the first biofuel facility in the state. At last count, five corn-based ethanol plants and four biodiesel ones are currently operating in Michigan -- though the state lags leaders such as Illinois, Minnesota and Iowa.
