Policy, not ability, limits Michigan's alternative energy future, expert say

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Robert RameyFrom left, Joseph Veryser of Lawrence Technological University, Chris Rizik of NextEnergy and Ardesta, Gary Was of the University of Michigan and Dennis Marvin of Consumers Energy.

• **Video quotes:** Panelists give insights into Michigan's energy future.

For Michigan's alternative energy industry, the buzzword is potential.

Michigan politicians, economic development officials, university leaders and alternative energy companies are praising the state's potential to capitalize on what could be a seismic shift in the state's energy sector.

As the state Legislature edges closer to approving a renewable portfolio standard, which would require that utilities and other providers derive a percentage of their electricity from renewable sources by 2015, Michigan is poised to experience rapid growth in several areas. They could include wind turbine equipment manufacturing, solar power development, energy efficiency initiatives and biofuel generation, experts say.

As Michigan's alternative energy industry becomes a key focus of the state's attention, *Michigan Business Review* organized a roundtable discussion to address the key issues facing the state's alternative energy industry with reporters Nathan Bomey and Sven Gustafson:

***Business Review:* Give us your assessments of where the state is in developing alternative energy and what the key issues are going forward.**
Dennis Marvin: Certainly there's plenty of discussion going on in Lansing with respect to the renewable portfolio standard, or the RPS, and ultimately, that will drive what happens within the state.

MICHIGAN BUSINESS REVIEW'S INNOVATION 2008/WEC LUNCHEON

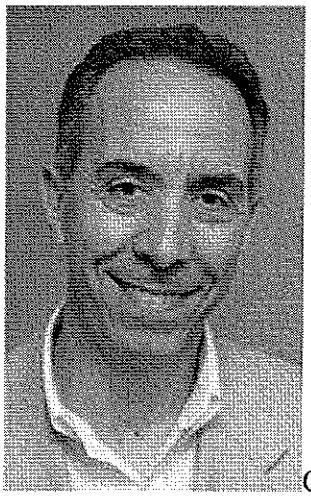
The third annual Innovation event is a multi-part program highlighting Michigan's role in alternative energy development.

Hopefully, within the next month, we will see that the legislation has shaped up so that we can go forward, and that will open up the door for all kinds of opportunities within the state relative to a new form of energy supply - also the potential for new job creation with the development of (wind) farms and the operation of the farms.

Chris Rizik: From the standpoint of developing alternative energies, the lack of an RPS is certainly hurting us. We are in the second half of the states in the country adopting this, and when you think about the production of alternative energy, energy isn't produced and things like wind turbines aren't produced so that they can be shipped far, far away.

So whether it is wind, whether it is creating all kinds of biofuels from wood waste, etc. - all those are affected by the RPS rules in Michigan.

From a standpoint of natural resources, we're as well positioned as any state in the region for creation of alternative energies. But from a policy standpoint, we're behind.


Chris Rizik

Gary Was: I really think the state needs to focus on how to develop the energy industry, just like we developed the automobile industry. Buying wind turbines and installing them, certainly that's something that we want to do.

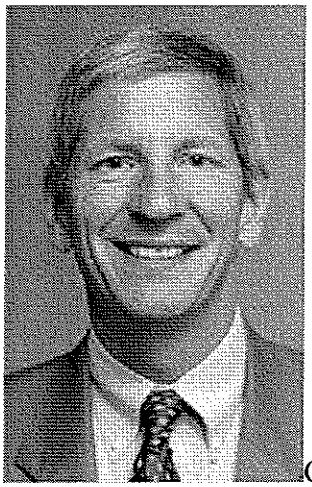
But we want to produce them, and we want to build a solar energy industry, which we have the potential to do. I think that's a hidden asset for the state, and I'm a little surprised it hasn't been more broadly recognized and capitalized on.

Highlights include:
• "The Innovation Experience" lets attendees meet the most innovative companies defining alternative energy in Michigan. The networking event features many leading companies invited to present their developments in wind, solar, biofuel and energy storage.
• The Washtenaw Economic Club's guest speaker, Thomas Friedman, New York Times columnist, will discuss his new book, "Hot, Flat and Crowded" at an expanded luncheon. General admission tickets, which do not include lunch, are available at www.mlive.com/innovation.
• Immediately afterwards, University of Michigan President Mary Sue Coleman will conduct a question-and-answer session with Friedman and speak on Michigan's alternative energy future.

• **Date:** Wednesday, Sept. 17.
• **Times:** The Innovation Experience begins at 10:30 a.m. Friedman speaks at 12:30 p.m.
• **Place:** Eastern Michigan University Convocation Center, 799 N. Hewitt Road, Ypsilanti.

I'd like to see Lansing jump on the opportunity to really push the growth of solar in the state. I think we could take the country by surprise very easily in that regard.

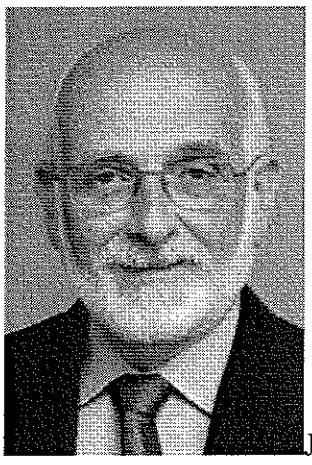
Joe, as campus architect at Lawrence Tech, you deal with a lot of green building practices. What are you seeing in that field?
Joseph Veryser: I see a lot of opportunity for various ways to go, but the problem we have is that the public is generally unfamiliar with all of the alternatives that are out there and what to do.

 Gary Was

There are so many different alternatives. We're talking wind energy, we're talking solar energy, we're talking biomass, and most of the time people don't even understand what they're talking about.

When we talk about a renewable portfolio standard and diversifying energy sources, usually we hear about wind turbines, wind farms. Is there a place for some of these other technologies?
Marvin: From a utility perspective, wind, by far, is the best as we've studied the issue, basically because it can be commercialized very readily. Its fuel source is free, in essence, yet the capacity factor for wind is anywhere from 20 to 28 percent (as an average of total installed capacity), at least as we see it develop. Biomass - there's some opportunity for that within our balanced energy initiative.

As Joe pointed out, there are multiple options you have to look at because there is no single silver bullet ... that we can achieve our energy supplies, so we do have to look across the spectrum - which is why we came out with our Balanced Energy Initiative to support the Public Service Commission's 21st Century Energy Plan.

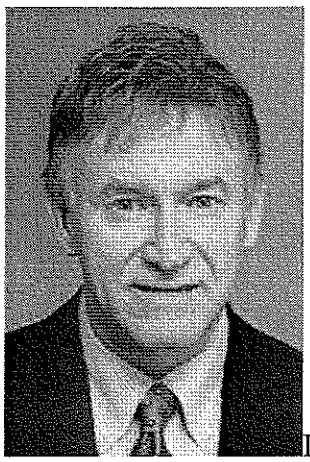
 Joe Veryser

Five percent of our current capacity at Consumers Energy is renewable today. Four percent of that comes from centrally landfill gas, and 1 percent comes from our hydro facilities that are actually over 100 years old.

Rizik: When people are talking about energy, the conversation tends to always go toward production. I'd like to turn a little bit and have the conversation go a little bit more toward efficiency.

If we think about it in the big picture, what costs less, to produce 10 percent more energy or to reduce consumption 10 percent? I would argue that there are some pretty exciting new technologies, whether they're sensor technology or software technology or materials technology, that are maybe a better focus - although not as sexy a focus - for what we should be doing, not just as a state but as a nation.

I look at it often from an investor standpoint. And if I have to choose between investing in some sort of big-bang new production technology or something that's a little simpler but could have more immediate returns and which we could see tangible results in the next few years, I'd choose the latter.

 Dennis Marvin

Was: One of the issues is what's the problem we're trying to solve? On a national scale, the problem we're trying to solve in my mind is two-fold.

In this country and in the world, we have an overdependence on oil. And it's not foreign oil. It's oil.

About 30 or 40 percent of our energy consumption comes from oil, but transportation is 95 percent dependent on oil. This is a problem. We understand that.

I think the bigger issue is the issue of climate change. That's a much bigger issue because that has the potential for cataclysmic ramifications if we goof that up. If you solve the climate change problem, you'll solve the oil dependency. Not so the other way around.

Energy efficiency is a part of conservation. And conservation is an absolutely necessary but insufficient measure for dealing with these two problems.

If we're going to address climate change, we have to essentially decarbonize energy production in this country and in the world. We need to be able to reduce our (carbon dioxide) emissions by somewhere between 50 and 80 percent. Given that 85 percent of our energy comes from fossil fuel burning, you can conserve all you want and we're not going to get there.

Veryser: I would agree with you. One of the things I see is that we have a 35-year-ago warning in the mid-1970s that we have an energy crisis. It happened when gas prices shot up, and we cared a lot for about six months. And then we lost our caring.

But I think it's indicative of the reality we face, and that's the human condition of the way we behave. Price is the one thing that seems to command our attention. It's the thing that gets people interested in supporting alternatives and looking at a change in the way of life.

Unfortunately, our appetite is one of convenience. It's use the bigger cars, and our ability to respond to these crises is very slow.

Marvin: It's a good point about energy efficiency in terms of how it can be used. If you go back historically to the time period that Joe had mentioned, there were energy efficiency programs that we had implemented at that time that really worked for a while. But when we started offering rebates for people to buy energy efficient appliances - for example, a refrigerator - they would take the inefficient refrigerator and move it to their garage, put in the brand new refrigerator and actually end up using more energy. In today's legislation, it actually includes an (incentive) not to use that old inefficient appliance so that they end up doubling the amount of energy they use instead of reducing their energy.

But, also, you can't stop people from buying their HD televisions, which actually use more energy than a conventional television.

The 21st Century Energy Plan projected 1.5 percent growth (in electricity demand) per year. And that's in a very slow economy.

So we have to really work hard on the energy efficiency item but also recognize that, unlike Honda - which can switch from one car to the next in a single day - we can't build the power supply infrastructure to support that demand growth in one day. It requires years of planning - years of construction in many cases.

Aren't Consumers and DTE both seeing energy consumption levels trending downward?
Marvin: Well, energy demand is something that fluctuates daily, monthly. It's really hard to point a finger on it. What you've got to do is you've got to watch the annual trends.

I participated in some seminars here with the automotive industry - they're pretty bullish that the industry will come back.

What intrigued me the most, though, is that they're really driving toward the all-electric vehicle. And that's just going to put an increased demand on the energy infrastructure, from an energy supply standpoint, as well as a transmission standpoint, which is one of the reasons why we are planning to revamp our whole energy infrastructure for our electric metering to install advanced metering infrastructure, or AMI, so that we can actually work with our customers on controlling their demand - from air conditioning to other appliances that are demand-sensitive or price-sensitive.

How can the universities and corporations like General Motors cooperate and develop new technologies that can electrify the vehicle?
Was: I think the electrification of the automobile is going to be a really key transformation of one of our energy systems. I really hope it's successful because it will have so many ramifications.

It does two things. It reduces the dependence on oil and it starts to open up opportunities to replace that fuel source with renewables and much cleaner fuels. This is an incredible transformation that can occur.

About 70 percent of our greenhouse gases come from the production of electricity from coal and the consumption of oil. And close to half of that comes from oil. So we can make a tremendous dent in greenhouse gas production by moving to the all-electric vehicle.

But it does bring in some real interesting issues and questions. Both on the generation side - you don't want to build more coal plants to provide the electricity. Of course we can use the nighttime dip to

provide the charging, but that only goes so far. You'd like to use clean energy, nuclear and renewables. And as soon as you start talking about renewables, you get into the issue of energy storage. And that's going to be a major issue - both large-scale storage and mobile storage in the form of batteries powering our electric cars.

Chris, you come from the investment side as a venture capitalist. What are you hearing from alternative energy companies about the RPS legislation and the kind of opportunities it might create in Michigan?
Rizik: Of course they're in favor of it. We certainly talk to companies that have been interested in having either manufacturing or supplier relationships in Michigan.

At NextEnergy, there was a lot of work done identifying the ability of automotive suppliers to diversify their manufacturing into wind. Until we get the RPS, it's not going to reach anywhere near its potential. So that's really what it's all about - manufacturing close to where it's going to be used.

Marvin: Certainly as a potential buyer of the wind infrastructure, the closer it is, the better that it is for us from a cost standpoint as well as a timing standpoint, so we don't have to bring in these turbine blades from Europe or other countries where they are dominating now. And the demand for the wind turbine equipment is extremely tight.

We're basically planning that it will end up as a 10 percent RPS based on what we hear from the governor and that she won't sign any legislation that would be less than that, from what we understand. So we'll see what happens in the next couple of months.

Solar power is something that Michigan has in terms of manufacturing and research capability. A lot of people don't know about it. What do you think the state can do to capitalize on its solar power industry?
Was: The solar power industry in Michigan is a great secret. Not many people know about it. Hemlock Semiconductor is the world's largest manufacturer of polycrystalline silicon. They're undergoing a very large expansion. Dow Corning owns a majority interest in Hemlock.

United Solar (Ovonic), north of Detroit, is a manufacturer of solar panels, as is First Solar, which is in Toledo. But these companies together have a tremendous capability in this state again from the supply and the manufacturing standpoint.

Certainly the state can try and attract additional companies or suppliers to these companies with tax incentives. I would like to see them banded together to form a major, partially state-supported research center for solar energy.

We've met with individuals from every one of these organizations and companies. Right now they know each other exists, but there's nothing holding everybody together.

Veryser: There is a lot of opportunity to improve what solar can do. It's improved a lot in the efficiency in recent years because panels used to be only be about 15 percent efficient. Some manufacturers have them up to about 30 percent now.

Two of you are affiliated with universities. What are you seeing from the upcoming generation of students? What's their interest level in this field?
Veryser: There is a heavy interest. The kids believe it; the kids buy it. And it seems to stick. It doesn't seem to dissipate with time. And quite frankly, it isn't that we're so smart that we want to teach them

that, it's they know about it from hearing about it, reading about it, coming from high schools that have talked about it. And they come at us and they expect it.

Was: I agree with Joe, the students are way ahead. We struggle to keep up.

I get calls all the time from students: "How can I get involved in energy, how can I get hooked up with a research project?"

It's really taken hold across the university and is growing throughout the colleges, many different colleges. It's not just engineering, it's economic, it's psychology and public policy.

Rizik: More and more of this really fundamental research is going to have to happen at universities. Traditionally, many people thought of the large corporations having large research organizations, but really the change over the last 30 years has been more and more the large corporations have basically bought the research.

And the fundamental research won't happen at venture-backed companies either, because these are long-term research projects. It really has to begin at the universities. And universities have become really the key place where technological change is going to begin in the country.

Marvin: The workforce is aging, and we need young talent coming out of these universities to step up and implement many of the changes that will occur within the energy industry, particularly as we move toward the renewable side.

To what extent do you think the alternative energy industry and renewables can help Michigan's economy generate jobs for people?
Rizik: I think there are two elements. One is, sure it can generate jobs. And it can retain jobs. Again, a big part of this is going to be diversification of existing companies, particularly in the manufacturing sector.

We've certainly had a lot of job loss in the automotive industry. Will alternative energy replace all those jobs? Certainly not in the near-term.

And I think we're kidding ourselves if we think it's going to create hundreds of thousands of jobs in the next decade. But we can retain manufacturing jobs in what are really higher margin positions, which is good for the state, and it can create certainly thousands of new jobs in the alternative energy industry. But the window is going to close relatively soon if we want to be the leader.

Marvin: We've done a bit of a preliminary analysis from an economic impact on the state level and we plan a formal economic impact study at some time to look at specific wind farms that we plan to install.

But from a statewide perspective, based on currently 9 million megawatt-hours that the 10 percent RPS will call for, we're estimating that somewhere between 75, 50-megawatt wind farms across the state, another $10-$11 billion investment scenario.

Not to get lost in all of this is the fact that the agricultural community will benefit from this, particularly in a state where the agricultural climate is somewhat in a downturn. They get property payments that will amount to anywhere between $15 million to $30 million, anywhere from $105 million to $210 million in new property taxes and about 15,000 construction jobs, along with about 450 new operating jobs.

And that's just for the installation of the wind farms. It does not count the manufacturing side of this if the RPS goes through. Clearly, there's a lot to be gained by going forward with this plan.

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Comments

SQiM says...

Yeah, let's support an energy source that can only be dispatched at 25% of its potential!

Wind is not the answer. If we create an RPS that requires high levels of wind energy we are all in for a surprise. Wind is only a buzz word for those who don't know the difference between energy demand and energy usage.

You thought your energy bills were high now; just wait until we have a 10% wind requirement.

Nuclear! Nuclear! Nuclear!

Thorium and pebble reactors are the future!

Posted on 09/04/08 at 8:05AM
Footer