Wisconsin
# Renewable Quarterly

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## Random Thoughts from This Year's Renewable Energy Fair

by Michael Vickerman
RENEW Wisconsin

For some, turnout is the measure of success at the annual Midwest Renewable Energy and Sustainable Living Fair, held each year in central Wisconsin over the summer solstice weekend. But the presenters and exhibitors at this three-day expo have their own yardstick for gauging a good fair: jaw muscle fatigue.

While I have no idea how many people attended this year's edition, the ache in my jaws on Sunday afternoon told me that I had exceeded my personal quota of answering questions and giving advice on how to use the naturally occurring and non-depleting energy around us to prepare for the coming energy squeeze.

The barrage of questions at the RENEW Wisconsin table was nonstop. Examples: "If I put up solar panels, can I sell the power I don't need to my utility?" "How do I know I live in a windy area?" "When will solar energy become cheaper than utility power?" "Why do I have to pay the utilities extra for renewable energy?" "Can I put a wind generator on my house?" "Can you put a wind generator on your property and sell the electricity to your neighbors?" And, of course, this hardy perennial: "How do I persuade my rural electric co-op to provide rebates for wind and solar?"

The fair attracts a diverse group of people that belies the event's countercultural roots: yuppies, entrepreneurs, energy geeks, the voluntary simplicity crowd, inventors and tinkerers, propagandists of many stripes, active and retired farmers, suburban do-it-yourselfers, the idly curious, and that classic American specimen, the get-rich-quick schemers who see in renewable energy the most promising pathway to early retirement.

As for the pot-of-gold chasers, their unbaked plans invariably involve jumping into the wind development racket. This year, at least a dozen people asked me about the economics of erecting utility-scale wind turbines and generating electricity for sale to utilities, as if that idea hadn't occurred beforehand to virtually every independent power company in the world. It is amusing to watch their romantic visions implode when they hear that one large turbine would cost a mere $3.5 million to install and gross a maximum of only $200,000 a year assuming all goes well and Murphy's Law stays out of the picture. "How do you like that payback period?" I ask.

***Conservation and efficiency are strategies for modifying demand, to which we in America have a serious aversion.***

Another subset of visitors harbors dreams of moving out in the country and building a new residence there. Often, they mention their desire to go off the grid entirely or become a producer of energy and sell the surplus to their utility. At some point in the conversation, however, it becomes clear that these new "homesteaders" are not looking to recreate Thoreau's Walden Pond experience, far from it. Instead, they're looking to accessorize their dream retreats with symbols of sustainability, and these days, nothing does the trick more conspicuously than rooftop photovoltaic (PV) panels. Fortunately, the fair is full of vendors who can be counted on to puncture their visions of PV-powered plasma TV's and central air-conditioners when they total up the cost of such a vanity installation.

On a more serious note, these conversations reveal the public's propensity to embrace renewable energy with greater enthusiasm than it does energy conservation and efficiency. This tendency flows from the simple fact that while renewables contribute to energy supply, conservation and efficiency are strategies for modifying demand, to which we in America have a serious aversion. Here, few people get upset if demand for energy lags behind what's available. But when energy supply fails to keep up with de-

*Continued on page 2*

### *In this issue . . .*



### New RENEW Members

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## Wind Siting Roadblocks

*Continued from page 1*

mand, the situation is presented as an unnatural occurrence, one that makes no sense given our collective wealth and almost-childlike belief in the efficiency of markets.

We are conditioned to believe that energy supply shortages are the result of external malefactors like Hugo Chavez and nefarious forces like oil companies. But in whatever public forum the problem is discussed, it is never framed as the inevitable consequence of steadily rising consumption. In fact we lack the vocabulary to frame it as such. As the eco-philosopher Garrett Hardin pointed out, we experience supply shortages all the time, but never are they referred to as a "longage of demand."

For that reason renewable energy fits better with our "have-it-all" notions of the good life than conservation and efficiency, strategies that presuppose resource limits and endorse behavioral restraints. Perhaps too we are fooled by the notion that because sunlight and flowing air are "free resources," converting them to heat or electricity must be a trivial expense.

Yet the more we reduce our energy consumption up front, the easier time we'll have in shifting our reliance from concentrated yet finite energy sources like coal, petroleum and natural gas to more diffuse, self-replenishing sources like solar, wind, and wood. Reducing one's energy overhead costs relatively little and produces a revenue stream that appreciates over time. Replacing one's energy infrastructure with on-site renewable systems, in contrast, will require a sizable up-front financial commitment relative to what it will produce over time. But when demand reduction and renewable supply options are pursued in tandem, the odds of being able to afford a PV system or a small wind turbine improve measurably.

Though Focus on Energy has long articulated that message in its marketing materials and in one-on-one consultations with prospective customers, it has not been a factor in the design of its renewable energy installation incentives—until now. Starting in July, the program will increase its solar incentive levels by $500 to those customers who adopt at least one household efficiency measure before buying panels. Because I was already committed to a PV system on my roof, I decided to take Focus on Energy up on its offer. Last week, a contractor air-sealed our leaky 85-year-old house, which should reduce air infiltration rates by more than 40%. Next month, the same contractor will return to improve the insulation level in my attic from R-30 to R-50.


***Jaw muscle fatigue has not** yet taken hold as RENEW's Michael Vickerman talks to a visitor at the MREA Fair.*

I'm counting on these two measures to slice our household natural gas usage by at least one-third. The savings will then be applied to "finance" the more expensive solar installation, resulting in a package that should still earn a return on investment above 10 percent, a very nice yield considering how safe this investment is. If I'm able to follow through with that approach, then PV becomes a luxury that even middle-income fair-goers like me can afford.☼

**Yes! I want to help RENEW promote the use of clean, renewable energy resources to diversify Wisconsin's energy resource mix.**

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RENEW Wisconsin is a nonprofit organization advocating the adoption of clean energy strategies to power Wisconsin businesses and households in an environmentally responsible manner. Through a combination of public policy and private sector initiatives, RENEW aims to increase the use of clean, self–renewing energy resources to generate electricity or displace fossil–generated electricity.

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RENEW also moderates a blog at www.renew-energy-blog.org.

# RENEW objects to town wind siting ordinance

The Town of Stockbridge appears ready to adopt an ordinance that would thwart an independent power producer's plan to erect 22 commercial wind turbines in this part of Calumet County.

Both the developer, Midwest Wind Energy, and RENEW Wisconsin submitted comments to the Town Board criticizing a proposed ordinance which specifies setback distances that are significantly more stringent than what Calumet County's two-year-old ordinance requires. Midwest Wind stated that while every one of its 22 turbines could be licensed under the Calumet County ordinance, only one would meet the proposed Stockbridge standards.

While Stockbridge has no zoning laws, several residents opposed to wind projects are pressuring the town to institute a restrictive wind-specific ordinance, as was done in Manitowoc and Shawano counties. A moratorium on wind development was adopted in May to give the Board time to craft zoning restrictions that would placate the opposition group. The antiwind contingent in Stockbridge has retained attorney Glenn Stoddard to plead their cause.

The proposed ordinance would require turbines to be placed at least 1,000 feet from the nearest property line and 500 feet from roads and power line right-of-ways. Under Calumet County's ordinance, the 1,000-foot setback is measured from the turbine to the building, and setbacks from roads and power lines need not extend beyond 1.1 times total turbine height. It would be impossible to permit a project configured like the 20 turbine Montfort project under Stockbridge's proposed ordinance.

In his August 17 letter to the Town Board, RENEW executive director Vickerman noted that in approving We Energies' 145 megawatt (MW) Blue Sky Green Field installation last year and Invenergy LLC's 200 MW Forward Wind Center in 2005, the Public Service Commission made the following findings:

✓A setback distance of 1,000 feet from inhabited structures is reasonable;

✓A setback distance of 1.1 times total height from property lines and public right-of-ways is reasonable;

✓A maximum sound limit of 50 decibels, measured from the residence, is reasonable; and

✓Limiting overall turbine height is not reasonable.

"To adopt more restrictive standards would therefore require credible evidence that the standards used by the PSC are inadequate," Vickerman wrote. "Can the Town of Stockbridge cite a single project in this state where setback requirements of 1,000 feet from inhabited structures and 1.1 x total turbine height from property lines have failed to adequately ensure public health and safety? I suspect not."

But Stoddard and his clients want the Town Board to go further. At the board's most recent meeting, they demanded the Board increase setback distances from houses to one-half mile, and lower the permitted sound output from 50 to 35 decibels. It should be noted that the sounds produced by crickets, birds, dogs, and the wind itself blowing past nearby trees routinely exceed 50 decibels. These sounds are frequently heard in the countryside. This begs the question: how is the protection of public health and safety advanced by such a standard? The answer, of course, is that public health and safety are just a ruse to disguise the true intent of these restrictions: to keep wind turbines out of the neighborhood.

[Update: At presstime, a revised ordinance was released. In addition to reserving the right to impose more restrictive setbacks and noise limitations, the ordinance "finds" that Calumet County's wind ordinance "is not sufficient to protect the public health and safety of Town residents and property owners." This may be the most open-ended invitation to judicial review the world has ever seen.]☼

# A Federal Energy Policy: Can It Happen Here?

by Michael Vickerman
RENEW Wisconsin

Of all the issue areas that Congress dives into from time to time, none reveals the inability of our legislative branch to fashion an internally consistent national policy quite like energy. The usual items in an energy bill—tax credit extensions, fuel subsidies, fresh regulatory requirements (and loopholes), new rules on offshore drilling, etc.—are designed to reward specific industries and influential constituencies. This year's energy bill promises to follow that timeworn path left by Congresses of yesteryear.

But an energy bill has to be more than the sum of its subsidies to constitute effective policy. This is especially true as we enter a time of growing resource and environmental limits that threaten to bite us in the collective behind if we don't curb our profligate consumption of energy.

Now is not the time to continue subsidizing every form of energy that can be produced in the United States, as the current Congress seems intent on doing. In previous bills, Congress has taken great pains to make sure that every energy constituency—coal, oil, nuclear or renewables—gets its fair share of the federal pie, regardless of need or environmental impact. This is the cheap energy paradigm at work—promoting economic growth by artificially lowering energy prices.

But while this paradigm may have been defensible before U.S. oil output reached its maximum in 1970, it has no place in today's energy-constrained world. Artificially lowering the cost of all energy sources will not only encourage waste and overconsumption, it will hasten the arrival of that traumatic day when the flow of cheap oil and natural gas cannot meet the demands of a hypermobile society.

It's no secret that Congress lacks the stomach for offending powerful energy lobbies like Big Coal. But it's simply not possible to institute policy changes, especially those intended to reduce carbon dioxide discharges into the atmosphere, without picking a fight with the coal industry, the electric utilities, and what's left of the U.S. automotive industry. Therefore, if Big Coal pronounces itself satisfied with the energy bill's contents when it is passed, you can be certain that Congress declined to incorporate any provisions that would cause coal's share of the energy pie to shrink, such as a carbon tax or renewable feed-in tariffs.

What makes the United States singularly incapable of producing a coherent energy policy aimed at cutting energy consumption and using low-carbon alternatives to fossil fuels?

***It's no secret that Congress lacks the stomach for offending powerful energy lobbies like Big Coal.***

I believe there are three factors explaining this lamentable state of affairs. The first is that your average American citizen has the energy IQ of beach sand, and, in this regard, your average Member of Congress is the mirror image of his or her constituents. For proof, I would direct your attention to Sen. Chuck Schumer of New York, who regularly appears on news programs to suggest that gasoline is overpriced at $3.00 per gallon and that motorists are being fleeced by dastardly oil companies.

Actually, at that price gasoline is a steal, and it would be so even at $4.00—the amount Canadians pay—or $5.00. Packing 125,000 Btu's of energy, a gallon of gas will power the average car 25 miles, yet it costs less on a volumetric basis than milk, apple juice, Evian, coffee from Starbucks, Mountain Dew, Listerine, and Red Bull. Try getting that performance with a gallon of Gatorade in your tank. It will set you back $10 and you still wouldn't be able to back your car out of the garage.

It should be noted that retail gasoline prices in Germany are the equivalent of $7.00 per gallon, yet its economy remains healthy. Why is that? Because Germany, unlike the underachieving U.S., has a national energy policy designed to transition the nation smoothly into a post-fossil fuel energy environment. By taxing fossil energy and providing long-term price support for wind and solar electricity production, the Germans are plowing today's wealth into building up a sustainable energy system that can withstand the future economic dislocations resulting from Peak Oil and climate change.

Indeed, no other country has made as much progress as Germany in building up a renewable energy infrastructure for delivering low-carbon electricity to homes, businesses, and rail networks. But other countries that lack domestic supplies of fossil energy, like Spain, the Netherlands and Denmark, are also moving aggressively to harness their renewable resource base. They too are light years ahead of the United States in this regard.

## Regional Squabbling Abounds

A second problem confronting policymakers is the unequal distribution of energy resources across this vast country of ours. A handful of coal-producing states—West Virginia and Wyoming come to mind—are net fossil energy exporters, and will view with hostility any policy proposal that will place limits on energy extraction within their borders. Their power is magnified by the markets they serve, which include large swaths of the Midwest and South.

On the other side of the coin are the West Coast states, Florida and New England, which are populous regions that have no domestic coal interests to protect. Nor does the automotive industry have a big presence in these states. Not having to appease Big Coal or Big Auto

enables state governments in these regions to plot a more aggressive course toward achieving emissions reductions and fuel diversity goals, as is being done in California and Florida.

One would expect members of Congress to promote the principal energy industries in their region. This predisposes them to enter into strategic alliances with other members representing different energy interests, usually of the "I'll watch your back if you'll watch mine" variety. Though these alliances are necessary for lubricating the deal-cutting and building support for the entire package, often it comes at the expense of public policy objectives.

Indeed Congress is institutionally incapable of passing a comprehensive energy bill that attempts to diversify the nation's energy resource base and scale back its carbon footprint unless it contains elements that work in the opposite direction (e.g., gasifying coal and expanding offshore drilling).

Further complicating matters is the very nature of the U.S. Senate itself, a body organized to magnify the power of individual states to block "national interest" initiatives from changing the status quo. Each state is equally represented in the Senate, no matter how populous. And Senate tradition grants committee chairpersons enormous deference to bottle up or water down legislation that might impose unwanted changes on the states they represent.

### The 60 Vote Threshold

Another Senate tradition, the right of unlimited debate, is enforced by a rule that expressly allows a minority of senators to thwart the will of the majority. To shut off debate on a measure, especially one in which powerful economic forces and regional interests are pitted against each other, bill proponents have to line up not 51 but 60 votes. Under the rule, debate continues even if 59 senators vote in favor of ending it and only one votes against the motion.

The energy bill passed by the Senate in June came tantalizingly close to incorporating a 10-year tax package that would have raised $29 billion, mostly from oil and gas companies and redirected it toward renewable energy development. The tax package was designed to be self-supporting; that is, it would not have triggered additional borrowing to underwrite the pro-renewable energy incentives.

Would such a tax package raise prices at the pump? A little. But remember too that $29 billion equates to about nine months' profit for Exxon Mobil alone. And, from a social equity perspective, it's always better to base energy subsidies and incentives on a real-time transfer of wealth than to saddle future taxpayers with even greater levels of indebtedness.

Nonetheless, the oil and gas companies objected to the closing of their favored tax loopholes, and they called upon their senatorial friends in the Oil Patch states to kill off this measure. To accomplish this, these senators made common cause with their counterparts from the Southeast and Rocky Mountain states, where Big Coal is very strong. Though this minority bloc was outvoted 57-36, they managed to prevent the tax package from being attached to the larger energy package. In any other legislative venue, losing a vote by a margin of 21 would be considered a stinging defeat, but on the floor of the U.S. Senate, it counts as a win.

In his most recent installment of Lyndon Johnson's biography, author Robert Caro points out that there have been only a few periods in the nation's history where the Senate lowered the floodgates and allowed legislation reflecting the popular will to come washing through its portals. Those rare instances resulted from significant political realignments that put one party with an activist agenda firmly in power.

The closest the United States came to a coherent national energy policy was during the mid-to-late 1970's. During that period there was a prevailing sense of anxiety over the nation's energy security, and both the legislative and the executive branches responded to the national mood with decisive actions. In a five-year period Congress passed laws creating automobile fuel efficiency standards, prohibiting new gas-fired power plants, and requiring utilities to purchase electricity generated by independent entities. By the debased standards of current governance, those were amazingly productive years.

However, once the price oil dropped in the 1980's, the urgency of the previous decade evaporated, and successive administrations began dismantling the policy initiatives adopted in the Ford and Carter years. When the Reagan Administration lowered fuel efficiency standards in 1986, Chrysler Corporation chairman Lee Iacocca said: "We are about to put up a tombstone that reads: 'Here lies America's energy policy.'"

It would take nothing short of a sea change to overcome Congressional inertia and recover the ground lost in the last 25 years or so. But though the prospects for a truly coherent national energy policy are improving — and the need has never been greater — both the citizenry and the current Congress are far too complacent to entertain changes that might involve belt-tightening and discipline. Given the current political dynamic, it would be unrealistic to expect this Congress, with its narrow majorities, to be the one that jump-starts the federal government into meaningful action.

Yes, we will see some progress on the energy front this year and next, but they will represent the sum of state government initiatives undertaken to counter the policy vacuum that persists at the federal level.✡

*Sources:*

Caro, Robert A., *Master of the Senate: The Years of Lyndon Johnson*, 2002, Alfred A. Knopf Inc., New York.

National Environmental Trust: History of Fuel Standards, One Decade of Innovation, Two Decades of Inaction. URL: http://www.net.org/documents/cafe_history.pdf

**Renewables Profiles**

# Jeff Knutson: Packaging Efficiency and Renewables

by Ed Blume, RENEW

Jeff Knutson's career followed a course not unfamiliar in the building trades. Starting as a carpenter in the 1970s, Knutson has built a business constructing homes and businesses. But they're not your garden-variety structures that depend on utility-provided electricity and natural gas – far from it. Knutson's latest creation uses no fossil fuels for heating or power, making it a net zero energy, net zero emissions structure and a showcase for what his company A-A Exteriors can do integrating energy efficiency and renewables under and on one roof.

Knutson left his birthplace of Hibbing, Minnesota, attended the University of Wisconsin-Oshkosh, and made Wisconsin his home.

When gasoline prices jumped from 25 cents to a dollar a gallon, he looked into energy efficiency and renewable energy. But it wasn't until he attended the Better Buildings, Better Business conference in 2002 that he began thinking about conservation and renewables as a business strategy. He then turned JK Construction into A-A Exteriors (www.a-aexteriors.com) and concentrated on delivering energy efficiency as part of building improvements.

Knutson is a solar site assessor for the Focus on Energy Renewable Program, and A-A Exteriors is a qualified contractor for Home Performance with Energy Star.


***Jeff Knutson stands with his*** *Toyota Prius in front of his net zero energy, net zero emissions office building duirng an open house to celebrate the building's completion.*

**Q.** *You just built a green, Energy Star structure that is net zero energy, net zero emissions. Why?*

The building sits only a few steps from Highway 10 going through Waupaca. With the array of solar panels on the roof, it gets people's attention. Everyone knows who we are.

**Q.** *Okay, the location gives A-A Exteriors good visibility, but what does A-A Exteriors do?*

We call ourselves energy savings contractors, and we provide a full range of exterior home and business improvements, focusing on energy efficiency of commercial, industrial and residential buildings.

Right now, most of our work is in air-sealing and energy efficiency services. To help grow that part of the business, we recently hired Wally Kennedy, one of the best energy efficiency experts in the state.

We start with blower door testing and air-sealing. After getting a leaky house sealed, we may recommend and blow in more insulation, and lastly we'll install renewable energy systems.

The new building showcases what A-A Exteriors can do, and really what any homeowner or business owner can add to their structures. The building produces no $CO_2$ since it uses a geothermal heating and cooling system and 50 solar electric panels with a rated capacity of 10 kW. It's also well insulated with Polar Wall Plus Siding (R-3), Huntington Vinyl windows

(R-25 frames, R-9 glass), foundation insulation (R-15), 2x6 walls with R-21 Nu-wool insulation (effective R-25), and more.

The solar installation will generate 12,300 kW hours a year, nearly double what an average Wisconsin home uses. The utility will buy back what we don't use in-house.

**Q.** *A blower door test? What's a blower door test?*

It's a way to find where air moves into and out of a structure.

To run the test, we close all the windows and doors in a home or building and place a large fan in a door way that's sealed off except for the fan blowing out.

So we're sucking air out of the house. It's not going to become a vacuum, of course, so we find the places where air comes into the house – usually the basement and attic. Those are the same places where air escapes from the house.

We seal those leaky places with foam or one of a hundred other products, so that warm air in the winter and cool air in the summer don't escape.

The testing and sealing take only about a day. Then, the house or building uses a lot less energy.

And A-A Exteriors guarantees that the energy savings will pay for the cost of the testing and energy efficiency improvements within five years. We average a 2.5-year payback. We also guarantee that if we test a building, and it doesn't need air-sealing or other energy efficiency improvements, we won't charge for the test.

**Q.** *How much savings are we talking about?*

Anywhere from 20 percent to 100 percent a year. The savings can be so drastic that a single year's savings can sometimes pay for the work.

**Q.** *Aren't the windows the draftiest parts of a house?*

Not usually. We might find air coming in around the windows, but the air is going out someplace else. That's usually the attic or basement.

Some of the leaks we can see even without the blower door test. If the fiberglass insulation is dirty behind the wall plugs and light switches (or any place else for that matter), the air is moving through the fiberglass and leaving dirt. It didn't come dirty from the manufacturer.

**Q.** *With the substantial savings, you must be one of the busiest contractors in Wisconsin.*

Even though we're one of the few companies providing blower door testing and air-sealing as a package, it still can be a tough sell. People don't understand air-sealing. It's not eye candy like solar panels that everyone can see, which by the way should be last on anyone's to-do list.

With a new home, people think the house is perfect, like a new car. But people have to realize the structure was built by a bunch of construction workers on site, not in a factory. They leave holes. We find them, and seal them up.

No one can see what we've done, but people can feel the difference even before we leave. The floors warm up almost immediately, because we stabilize the heating and cooling in the house, so that people are comfortable upstairs and downstairs. No matter how much people turn up the furnace in an unstablized structure, some parts will be cold and others hot.

**Q.** *Isn't one of these buildings going to run into the problems, like mold, of super insulated, air-tight homes of the 1970s?*

The industry says build tight and ventilate right. I add another key factor – dehumidifying. If the humidity in a home gets to 70 percent and above, you'll get mold growing on the walls. If the moisture stays at 50 percent or less, you won't.

But a normal building breathes – no matter how tight – through the clothes dryer, bath and kitchen vents, windows, and doors.

You also have to use "green" materials for construction and maintenance. No press board with all of the volatile organic compounds, for instance.

**Q.** *You list renewables as the last thing you do on a building. Why?*

Absolutely. The panels on our building, for example, bring in the right people – those interested in energy savings.

Also every one dollar spent on energy efficiency saves four dollars on your alterative energy system. It doesn't make sense to spend $5,000 for a solar electric system when $5,000 goes a long way to reduce energy use.

Some houses might only have a half of an inch of fiberglass in the walls. We call it filterglass. It just lets the air filter through to the outside.

After doing all of the energy efficiency improvement, an owner can then consider renewable energy installations.

**Q.** *Were you able to offset some of the costs with funds from Focus on Energy?*

The Focus on Energy Renewable Program covered 25 percent of the solar installation.

**Q.** *What's next for A-A Exteriors?*

First, sell the new building, probably to an environmentally sensitive business to use the building to show their commitment to the environment. Then build another one and another and another.

# State Must End Roadblocks to Wind Development

by Michael Vickerman
RENEW Wisconsin

When FPL Energy's windpower project in southwest Wisconsin was completed in 2001, it became the largest of its kind in the state. The 20 turbines visible from U.S. Highway 18 more than doubled Wisconsin's wind generating capacity. Support for the Montfort project was rock-solid at every level, from local landowners to the Iowa County Board, and the windpower plant was approved without a dissenting vote.

Six years later Montfort still remains Wisconsin's largest wind installation. While construction has started on two larger installations near Fond du Lac, local opponents slowed their progress with lawsuits. And, like a contagious disease, citizen litigiousness is spreading fast. In the last 18 months, lawsuits have been filed in Calumet and Manitowoc counties, each with the aim of stopping proposed windpower plants from being built.

In the face of local pressure, three counties—Manitowoc, Shawano and Door—adopted ordinances with setbacks so stringent as to render commercial wind development impossible. The popular Montfort project, which continues to impress visitors who have never seen a wind farm before, could not be built in those jurisdictions now.

And the problem is spreading. A moratorium on wind turbines remains in effect in Trempealeau County while officials there finalize an arbitrarily restrictive set of rules that will effectively prevent turbines from being installed, including those designed for personal use.

In many areas in Wisconsin, it is now easier to obtain a permit for a large confined animal operation or a regional landfill than a commercial wind facility. Even community-scale efforts, like the three-turbine project proposed near Evansville, are running into opposition.

Where resistance to specific wind proposals springs up, local governments often buckle under the pressure. The result is delay, restrictive ordinances that effectively halt wind projects from proceeding, and litigation.

Why are these opposition groups so effective? In large part they capitalize on local government's unfamiliarity with wind generators. How many county supervisors, planning officials and town board members have actually walked around Montfort's turbines and listened to them up close? Clearly too few, because if they had, they would learn that the sound from these turbines is undetectable at a distance of 1,000 feet.

State law forbids local governments from restricting or blocking wind energy projects unless the condition serves to protect public health and safety. Unfortunately, the law leaves it up to local jurisdictions to establish the appropriate standards for setback distances and sound output. Needless to say, these standards vary widely from one local unit of government to another, even though turbine size and operating characteristics don't change when crossing political boundaries.

While the Public Service Commission has developed reasonable standards for siting wind projects, they only apply to projects greater than 100 megawatts. However, the overwhelming majority of Wisconsin's wind projects are smaller, and, under current law, the PSC has no say over their fate. This disconnect must not be allowed to persist.

This dynamic is unfortunate, in that town and county governments are predisposed to be more sensitive to local concerns than to state renewable energy requirements. There is no way Wisconsin utilities can comply with the state's new renewable energy standard, let alone a potentially higher one, so long as the number of local jurisdictions adopting unreasonable siting standards continues to grow.

Wind energy is the only renewable resource that is both cost-effective and scalable to utility operating systems. Many public policy objectives, ranging from economic development to environmental protection, are compromised when opposition groups are effectively allowed to control when, where and how much windpower to build.

The state can remedy this situation in two ways. First, it can establish uniform siting standards applicable to all projects above a certain size, as was done with large livestock operations. Second, it should give commercial wind developers pursuing smaller proposals the option of applying to the PSC for approval.

To talk about increasing renewable energy requirements before fixing the problems confronting wind development here is to, as the hoary cliché goes, put the cart before the horse.✡

## RENEW to meet in Mequon, September 15

Meet with RENEW's southeast Wisconsin members and friends for an energy briefing and buffet lunch at the Milwaukee Area Technical College North Campus in Mequon at 11:30 a.m. on September 15.

RENEW's Executive Director Michael Vickerman will provide a brief update on the rapidly evolving field of renewable energy. It will also be an opportunity to learn about MATC's solar and wind installation and education plans.

Anyone interested in renewable energy may attend.

If you are not yet a RENEW Wisconsin member, or your membership has lapsed, you can renew or become a member by using the form on page 2. Make the check payable to RENEW Wisconsin with "Membership Meeting" in the memo line.

For more information, contact RENEW's board president Dennis Briley, (262) 544-5808 or dbriley105@aol.com.✡

# RENEW makes case for uniform biogas tariffs

by Michael Vickerman
RENEW Wisconsin

As part of a wider campaign to stimulate the distributed renewable generation marketplace, RENEW is gearing up to intervene in various utility rate proceedings as an advocate for a standard offer for electricity produced from livestock manure. The utilities with pending rate cases are We Energies (WE), Xcel-Northern States Power (Xcel), and Madison Gas & Electric (MGE).

What makes this intervention particularly timely is that Xcel is proposing to buy back biogas-generated electricity from its customers at 7.3 cents/kilowatt-hour (kWh). If approved, it would be the highest biogas rate offered by any utility in Wisconsin. While WE and MGE offer biogas tariffs, they are set at about 6.1 cents/kWh, less than one cent/kWh higher than their standard buyback rates.

As of this writing, neither MGE nor We Energies buys energy from a dairy farm through their biogas tariffs. Biogas generators in We Energies territory are either selling electricity to the utility under a Power Purchase Agreement or the standard parallel generation rate. Though the parallel generation rate is lower than WE's biogas tariff, those generators that exercise that option retain possession of all the renewable energy credits (REC's) created by the sale.

In the hearings on the utilities' proposals, RENEW will argue that the production cost of installations should determine the biogas rate, not the utilities' avoided costs, which is about 5.5 cents/kWh. RENEW will also ask the Public Service Commission (PSC) to open a docket for the purpose of authorizing advanced renewable tariffs (ART's), which are a standardized package of buyback rates based on the renewable technology's production costs in Year 1.

Under RENEW's proposal, these tariffs would be fixed over a 10-year period, with Year 1's cost the highest relative to the parallel generation rate. As conventional energy costs rise during that period, however, the margin between the tariff and the utility's avoided cost shrinks. For biogas, at least, the 10-year fixed rate could provide a savings to the utility in the later years if avoided costs increase significantly.

***Crave Brothers Dairy Farm hosted*** *open house to let visitors tour the new biodigester installation. Methane gas from the digester tank at the left travels underground and into a dryer in the foreground before powering a diesel engine and generator in the buildng behind the dryer.*

RENEW's testimony will build on the analytical work L&S Technical Associates has performed for the Wisconsin Distributed Resources Collaborative (WIDRC). L&S has analyzed production cost profiles of various renewable generation technologies. For biogas installations, L&S has two cost estimates. At 500 kW and under, the production cost estimate is 10 cents/kWh. Between 500 kW and one MW, the estimate is 9 cents/kWh.

Xcel's proposed biogas rate is an outgrowth of WIDRC's 18-month initiative to develop a consensus tariff proposal for PSC review. While Xcel deserves praise for offering a relatively high biogas tariff, it is unlikely to lead to new biogas installations without additional incentives, such as U.S. Department of Agriculture and Focus on Energy grants. Because funds from these sources are limited and vary from year to year, they cannot by themselves build up and sustain a healthy market for biogas generation. For that we need longer-term measures like ART's.

RENEW's testimony in the rate cases will come from three sources: executive director Michael Vickerman; Steve Dvorak, on behalf of GHD Inc., a Chilton-based company that has designed and built more than half-dozen biogas energy systems for Wisconsin dairy farms; and Dan Nemke, on behalf of Clear Horizons, LLC, a division of Milwaukee-based Pieper Power that designed, built and operates a biogas energy system serving the Crave Brothers Dairy Farm in Waterloo.

# MGE Gets High Marks for Solar Buyback Rate

by Niels Wolter
Solar Consultant, Focus on Energy

Recently, Madison Gas and Electric (MGE) announced that they would buy 100% of the power from their customer's solar electric systems for 25 cents per kilowatt hour (kWh) for ten years. This is twice or more than the current "value" of solar power and it significantly improves the economics of solar power systems. Well done MGE!

First you may wonder, why did they do this? I do not really know the answer, but I do have some guesses.

***Niels Wolter assists businesses and*** *individuals who contact Focus on Energy for information on solar installations.*

I would like to think that Michael Vickerman the executive director of RENEW Wisconsin and I had something to do with it. RENEW Wisconsin is a non-profit group located in Madison promoting clean energy strategies for powering the state's economy by working with utilities, renewable energy developers and governmental bodies. I encourage you all to become members of RENEW Wisconsin.

Under a green power program customers pay a little more money and get their power from renewable sources. MGE's green power program costs customers 2.7 cents/kWh more than their standard rate. The green power is primarily supplied by a wind farm in Kewaunee County.

MGE's green power premium will soon drop to 1 cent/kWh. I urge you to sign up for MGE's green power rate (or the green power program of your own utility if you're not an MGE cusotmer).

About a year ago Michael Vickerman and I paid MGE a visit. We told them that we were unhappy with their green power program for the following reasons. One, it was no longer innovative. Two, it had not been significantly expanded in the seven years since it was first offered, while almost always having a waiting list of new customers wanting to join. Three, compared with other Wisconsin green power rates it was expensive, so it really ought to be innovative.

We believed that customers paid that 2.7 cents per kWh extra for MGE to expand the opportunities for renewable power not keep coasting on a nine-year old wind farm.

In the first meeting, MGE basically told us that it was too risky to do anything innovative or even to expand their green power program. So we let MGE know that we would drop our participation and let people know why. In the second meeting MGE told us about two innovative ideas, a small wind farm in Dane county and a solar buy back rate. They worked hard on both in the following months.

So, other than a little public pressure, why would MGE offer such a great deal for solar power? First, market research shows again and again that people love the idea of solar power. Thus promoting solar makes their customers happy - as does locating solar systems right here in their community on their customers' roofs.

Secondly, MGE's wind farm must be close to being paid off, so their cost of wind power is declining. Meanwhile the cost of conventional power is increasing. To keep the cost of green power above the cost of conventional power - they decided to add a little solar power (and add some new wind power).

MGE's 25 cent solar buyback rate will be available starting January 1, 2008 to customers who installed systems between 1 kW and 10 kW after March 6, 2007. The buyback contract is fixed good for 10 years.

The growth of solar power in Madison and the MGE territory has been rapid. In 2002, no customer-owned solar electric systems were installed in Madison, in 2003 that increased to two, and in 2007 we expect 18 new systems. That is an annual growth rate of almost 75%. Those numbers do not include the systems that MGE has placed on every high school in their service territory and a few community buildings.

Between 2002 and June 2007 Alliant customers have installed about 36 systems compared to MGE's 32 systems - but remember MGE has far fewer customers. Seventy-eight some systems may not sound like much but it is a great start.

With the MGE solar buyback rate, you should expect solar to become more popular. Madison and Dane County are famous for all their bicycles, hybrid cars, books, lakes, citizen activism and, soon, solar electric systems.

Summary: Become a member of RENEW. Enroll in MGE (or your utility's) green power program. Consider a solar electric system for your home or business.

Well done MGE!☼

# WPPI Adds Solar Installation at Headquarters

Electric customers who wonder what local utilities are doing about climate change and the need for clean, renewable energy don't have to look farther than the 100% green-powered headquarters building of Sun Prairie-based Wisconsin Public Power Inc (WPPI). Now helping to power the WPPI operations and office facility are two 2.8-kilowatt photovoltaic solar arrays.

"It is WPPI's business objective to be a model for cost-effective conservation initiatives and the efficient use of energy," says President and CEO Roy Thilly. "WPPI's new solar installation demonstrates our commitment to the use of clean, renewable energy."

While much of the utility industry's renewable development efforts in the region have focused on the use of wind power, WPPI's solar installation demonstrates its commitment to using a diverse mix of clean energy technologies. WPPI is on-track to be six years ahead of schedule in meeting the Wisconsin state requirement that 10% of its energy portfolio be supplied from renewable resources by 2015.

Michael Vickerman, Executive Director for RENEW Wisconsin, notes that WPPI's on-site solar system is the first of its kind for an electric utility in Wisconsin.

"RENEW commends WPPI for being the first Wisconsin utility to install solar electric panels at its headquarters," says Vickerman. "Wisconsin has by far the strongest solar electricity market in the Midwest, thanks to proactive utilities like WPPI who, through their own initiatives, demonstrate to their customers that this is an energy technology worth owning."

WPPI's solar installation became operational this week. The panels are mounted on poles and equipped with sunlight-tracking technology so they can move and tilt with the sun's path across the sky, increasing the system's efficiency by as much as 30%.

The installation will provide WPPI with approximately 9,000 kilowatt-hours of clean, emissions-free electricity each year, or enough energy to power three energy-conscious homes.

***Two photovoltaic solar panels have*** *been installed at Wisconsin Public Power Inc.'s Sun Prairie headquarters. WPPI Energy Services Representative Kurt Pulvermacher says the two panels installed at the company's Sun Prairire headquarters will follow the sun's movements throughout the day to increase system's efficiency by as much as 30 percent.*

WPPI Energy Services Representative Kurt Pulvermacher says that although WPPI's system cost approximately $60,000, the average homeowner might spend less than half that for a small system. "In addition, federal tax credits and utility incentives for the use of solar can help offset project costs for individuals and businesses," says Pulvermacher. "Solar technology is a good option for any individual or business interested in reducing their carbon footprint."

Pulvermacher suggests that electric customers interested in learning more about renewable energy projects should start by contacting their local utility.

### 100% Renewable Power

For customers served by WPPI member utilities, solar project funding may now be easier to come by since the company recently committed to increase its funding for energy efficiency and conservation programs by more than 300 percent.

Other efforts to conserve at WPPI include the purchase of additional green power for the balance of the building's energy needs so that the facility is now powered 100% by renewable energy. Employees have also worked hard to conserve energy in the building, setting a goal to reduce consumption by 10% in two years. In less than 18 months, WPPI achieved a 15% reduction. The effort earned WPPI's facility the U.S. Environmental Protection Agency's prestigious ENERGY STAR®, the national symbol for protecting the environment through superior energy performance.

"We're working hard to lead by example," says Thilly. "The use of renewable energy, whether by installing a solar system at home or by purchasing from utility green power programs, is a simple step anyone can take to help create a cleaner energy future."

WPPI serves 49 customer-owned electric utilities, which serve 188,000 homes and businesses in Wisconsin, Upper Michigan and Iowa. It is the fifth-largest electric utility in Wisconsin.☼

# Renewable and Energy Efficiency Events

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| **Sept. 12-14, 2007** | **2007 I-Renew Energy EXPO. Salon, IA.** Features workshops and speakers covering wide range of topics, including renewable energy - wind, solar, green building, entrepreneurship and DIYers (Do-it-Yourselfers) -- children's art, energy efficient technology, renewable fuels, alternative transportation, and advocacy. More information at www.irenew.org. |
| **Sept. 15, 2007** | **Ledge View Nature Center Fall Festival & Energy Fair.** Chilton. Exhibits and presentations to help families and individuals conserve energy in their homes and businesses. More information in the Events Calendar at www.focusonenergy.com. |
| **Sept. 15, 2007** | **RENEW Membership Meeting**. MATC, Mequon, WI. A lunch and briefing on renewable energy activities. Open to members and non-members. More information from Peter Lee, lee@uwm.edu. |
| **Oct. 5-6, 2007** | **Solar Tour of Homes and Businesses.** People all across Wisconsin open their homes and businesses to showcase their renewable energy installations and energy efficiency features. Sponsored by the Midwest Renewable Energy Association. Visit its site (www.the-mrea.org) to get a complete listings of the open houses. |
| **Oct. 18, 2007** | **2007 Solar Decade Conference. Milwaukee, WI.** The third Solar Decade conference will continue to build a solid foundation for solar in Wisconsin by demonstrating how to incorporate solar energy into businesses, careers and homes. Sponsored by the Focus on Energy, We Energies, and Wisconsin Green Building Alliance. More information at www.solardecade.org. |
| **Dec. 13-14, 2007** | **Wisconsin Solar Working Group.** Semiannual meeting. Location to be announced. More information on the Events Calendar at www.focusonenergy.com. |



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