



Solar Water Heating's Day of Superlatives

by Michael Vickerman
RENEW Wisconsin

Renewable energy history was made December 13, 2007, when a capacity crowd of 210 people gathered at the Kalahari Resort in Wisconsin Dells for the state's first conference dedicated exclusively to solar hot water systems.

And, speaking of dedication, the event opened with the ceremonial valve-turning of the state's largest solar hot water system, a recently completed 104-panel system atop the Kalahari's roof. Visible from Interstate 94, the Kalahari's solar array will capture and deliver the equivalent of 100 residential-sized solar hot water systems.

Focus on Energy, the conference sponsor, provided a \$50,000 implementation grant to offset a portion of the system's installed cost. The amount of preheated water produced from this system is sufficient to supply the Kalahari's laundry facility, which operates 24 hours a day. The system will displace an estimated 11,807 therms of natural gas per year, offsetting nearly 70 tons of carbon dioxide along the way.

At \$1.00/therm the Kalahari will save a minimum of \$12,000 a year from this installation. When combined with other energy-saving initiatives that the resort is pursuing, such as installing low-

flow showerheads and compact fluorescent bulbs, the Kalahari expects an overall savings of \$400,000 each year in utility bills.

In addition to organizing the dedication ceremony and tour of the system, Focus on Energy's conference planning team put together a program featuring exhibits and product displays, a keynote address given by a successful solar business owner from Arizona, and two tracks of breakout sessions. For both professionals and novices, there was much to choose from, with workshops ranging from a basic technology overview to more technical sessions addressing codes and permitting.

Burke O'Neal, Director of Madison-based Full Spectrum Solar, walked several dozen attendees through various solar heating designs and configurations (open vs. closed loop, DC vs. AC pumping, flat plates vs. evacuated tubes, etc.), and discussed different approaches to estimating production losses from shading and poor orientation.

O'Neal concluded with the observation that a solar hot water system is a good long-term investment that poses minimal risks to the homeowner when installed by reputable contractors.

During one of the panel sessions, I talked about the economic performance

In this issue . . .

Calumet Voters Strongly Favor Wind ...	3
Renewable Profiles: Steve and Nancy Sandstrom	4
Wind a No Go in Trempealeau	6
Windpower Projects Near Completion .	7
Calendar	8

of my two-year-old, 66-square-foot system. In my view, discussing system economics in terms of simple payback is a big mistake. It will take 41 years to fully pay off my system at the current price of natural gas. I might not live so long.

Not only does that approach discount the effect of rising fossil fuel prices, it fails to credit the system's contribution to the value of the house.

In describing system economics, in-
Continued on page 2

New RENEW Members

RENEW welcomes the following new businesses and individuals who joined since the last newsletter:

- Bubbling Springs Solar • Castleman & Sons Plumbing • Betty Cystrunk Crowder College • DR Energy Exchange • Dave Drapac • GreenSky Energetics, Inc. • Lutz, Daily & Brain, LLC • Sue Menzel • Michels Wind Energy • Neil Palmer & Associates Kimberly Pease • Mark Price • Quantum Dairy • Jenna Schieffer • Schmitt Woodwork & Cabinetry • Sierra Club, Milwaukee-Building Environmental Committee • Sunny Solutions TEKO Mechanical • Max Tolzman Trega Foods

To join RENEW, complete and return the membership form on page 2.

WISCONSIN

RENEWABLE

ENERGY SUMMIT

MARCH 12 - 14, 2008

Midwest Airlines Center
400 West Wisconsin Avenue
Milwaukee, WI

renewableenergysummit.org

Solar Hot Water Conference

Continued from page 1

stallers should do what most companies do when contemplating a long-term investment like solar energy—calculate the internal rate of return (IRR) on the capital invested. Using a model developed by Warren Palmer, a Beloit College economics professor, I've determined that my system should yield an IRR of 5.4% if natural gas prices continue to increase 9% per annum, as they have throughout this decade.

That may not sound like much, but I strongly doubt you will do better either investing in the stock market or buying a bank-issued certificate of deposit, at least until next year.

Palmer's model can also quantify to what extent a solar energy system adds value to the house it's attached to, depending on assumptions of future energy costs. By estimating the energy savings the next owner of the house would reap in the 10-year period after the house is sold, the current system owner can figure out if the installation's out-of-pocket costs would be fully recovered through the house's sale price. Should that occur, one can justifiably argue that the system's pay-back was immediate.

Installers should also urge customers to package their solar investments with measures supported by Focus on Energy's Home Performance program. Last year



At a Glance – Kalahari Resorts' Solar Water Heating Installation

Collector space: 4,160 square feet • Total storage: 2,000 gallons • Annual fuel savings: 11,807 therms • CO₂ reductions: 70 tons/year • Resort load: 1,850 gallons/day at 140°F • Orientation: 185° (5° E of due south) • Tilt angle: 54° • Panel manufacturer: Solar Skies, Starbuck, MN • Distributor: Hot Water Products, Milwaukee • Installer: Terrytown Plumbing, Baraboo

I arranged for a contractor to air-seal my house and add insulation to the attic. This decision should reduce household natural gas use by at least 100 therms per year, yielding an IRR of 16.7% on the out-of-pocket cost of these measures. However, when I model the Home Performance actions and my solar hot water system as one transaction, the overall IRR comes to 9.4%. That may be the best investment available to homeowners this year.

Conference presentations are on-line: www.wisconsin solarhotwater.com. All indications are that Focus on Energy will host another solar hot water forum or conference in 2008.

In addition, the 2008 Renewable Energy Summit, March 12-14, at the Midwest Airlines Center in Milwaukee, features two workshops on solar thermal, as well as workshops in all other renewable technologies.✪

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

Name _____

Organization _____

Address _____

City/State/Zip _____

E-mail _____

Make your check payable to RENEW and mail to RENEW, 222 S. Hamilton St., Madison, WI 53703
608.255.4044 • www.renewwisconsin.org

Please accept my membership in the following category:

- Terawatt Sponsor - \$2,500+
- Gigawatt Sponsor - \$1,000 - \$2,500
- Megawatt Partner - \$50 - \$1,000
- Kilowatt member - \$25 - \$50
- Conservationist member - \$10 - \$25
- Additional contribution of \$ _____

Your contribution is tax deductible.

WISCONSIN RENEWABLE QUARTERLY

Winter 2008, Volume 13, Number 1

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.

STAFF

Michael Vickerman, Director
mvickerman@renewwisconsin.org
608.255.4044

Ed Blume, Communications
eblume@renewwisconsin.org
608.819.0748

OFFICERS AND BOARD

Dennis Briley

President, Waukesha

Richard Hasselman

Vice President, Madison

Katie Nekola

Secretary, Madison

Shelly Laffin

Treasurer, Spring Green

Mike Allen, Sun Prairie

Jeff Anthony, Milwaukee

John Bahr, Wauwatosa

Chris Deisinger, Madison

Alex DePilllis, Madison

Gerry Flakas, Delafield

Jenny Heinzen, Manitowoc

Larry Krom, Spring Green

Mick Sagrillo, Forestville

Michael Vickerman, Madison

Articles may be reprinted with credit to the author and the *Wisconsin Renewable Quarterly*, published four times a year by RENEW Wisconsin, 222 S. Hamilton St., Madison, WI 53703.

Research and publication are funded in part by Focus on Energy Renewable Energy Program.

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

Calumet Voters Strongly Favor Wind Project

Editor's note: In advance of formulating a wind ordinance, the Calumet County board first imposed a moratorium on wind projects late in 2005. Twice (most recently in January 2008), the board adopted new moratoria. In the meantime, projects cannot move forward. EcoEnergy asked a polling company to gauge the feelings of Calumet residents. The following, prepared by EcoEnergy, summarizes the survey results.

Our recently completed survey shows that Calumet County voters strongly favor building new wind farms in Calumet County to generate electrical power. Seven in 10 voters (70%) support building new wind farms in the county, while only 19% oppose them. Moreover, voters are more than three times more likely to *strongly* support the building of new wind farms (42%) than they are to strongly oppose them (12%). Voters are relatively well-informed about the proposal to build wind farms, with 70% of the county hearing a “great deal” or “some” about the proposal. Among this group, over two-thirds (69%) favor the proposal to build wind farms, while 21% oppose it. Among those who have heard “not too much” or “nothing” about the proposal, support reaches similar levels (73% favor, 17% oppose).

Support for wind farms garners strong support across the ideological spectrum, with large majorities of liberals (81%), moderates (71%) and conservatives (64%) all strongly favoring the proposal. Support is also strong across gender, age and education.

Some cleavages do emerge across geographic groups. The wind farm proposal garners overwhelming support in Appleton/Menasha and Harrison/Shorewood, and nearly two-thirds favor the proposal in the Eastern part of the county. In the Southwest, where most of the proposed wind farms would be located, support is much more evenly divided, although a 41% plurality still

favors building wind farms.

Looked at another way, voters who live near the proposed wind farm sites (about 26% of the county's population) are more likely to oppose the building of new wind farms, but their opposition is far from monolithic – indeed, even in those areas most likely to be affected by wind farm construction, a 45% plurality favors building them while 38% oppose their construction.

Stable Opinions

Support for the proposed wind farms remains strong after voters hear arguments on both sides of the issue. After hearing supporter and opposition arguments modeled on those actually being made by both sides of this issue, 70% favor the construction of new wind farms, while 22% are opposed.

Indeed, opinion changes very little regardless of the level of information that voters had going into the survey. Very few of those who had heard “a great deal” or “some” about the proposal changed their minds. Likewise, opinion remained largely consistent among those who had heard “not too much” or “nothing at all” about the proposed wind farms. Moreover, a narrow plurality of those who live near proposed wind farm sites continue to favor their construction (45% favor, 43% oppose).

Positive Toward Renewables

Calumet County voters have a much more positive view of renewable energy sources, like wind and solar, than they do of natural gas, coal or nuclear energy. . . .

Renewable energy sources, like solar power (ranked 7.78 out of 10) and wind-turbines (6.84) were viewed significantly more positively than natural gas-fired power plants (5.64), nuclear power plants (5.07) and coal-fired power plants (3.68). Thus, strong support for wind farms in Calumet County is likely grounded in the positive feeling voters have toward renewable energy sources.✧

Renewables Profiles

Nancy and Steve Sandstrom: Keepers of Pinehurst Inn

by Ed Blume, RENEW

Nancy and Steve Sandstrom slid into chairs around a table at Madison's Monona Terrace just after finishing a presentation on ecododge design and planning at the North American conference of The International Ecotourism Society (TIES).

It's no wonder that TIES wanted them to tell about the Pinehurst Inn, the bed and breakfast that they own and manage just south of Bayfield along Lake Superior. The Pinehurst Inn's impressive list of credentials includes:

- 320 square feet of solar collectors to heat domestic hot water in the new Garden House;
- Plans to retrofit the original inn with similar solar panels;
- Energy efficient materials throughout both buildings;
- Non-toxic cleaning products and recycled material wherever possible; Organic cotton linens and towels;
- Organic and locally grown food as much as possible;
- Energy Star appliances, lighting and other technology;
- Landscaping with both historic and native plantings; composting of all food and garden waste;
- No pesticides or herbicides or commercial fertilizers used on the lawns or gardens;
- Personal vehicles that run on biodiesel and veggie oil.

When Nancy and Steve both found themselves in stressful jobs, feeling like "square pegs in round holes" in Milwaukee, they began researching the possibility of purchasing a bed and breakfast.

The owner of another Bayfield inn knew that they were looking and called them when the Pinehurst Inn went on the market. They snatched it up in January of 1996, as much to rescue a fine old house as to open an inn.

Nancy and one family dog moved into the Pinehurst shortly afterward, but Steve stayed in his job and made a



The Pinehurst Inn's Garden House features solar heated water along with other eco-friendly touches as well as country charm outside of Bayfield, Wisconsin.

long commute from the Milwaukee area for another two years.

Nancy manages Pinehurst Inn full-time, and Steve helps as much as he can when he's not teaching classes at Northland College or on-line courses for the University of Wisconsin-River Falls.

Q. *What brought you to Bayfield and the Pinehurst Inn?*

Steve: We both knew that we weren't living the lifestyle we wanted. We had always been close to nature, and we were in the wrong place.

Nancy: We'd reached the age of being empty nesters, and we began researching the bed and breakfast options as a way out of suburbia. We wanted to be in Bayfield where we have family.

Q. *Most bed and breakfast inns aren't green. Why did you create a green, ecotourist destination?*

Nancy: Somewhat out of necessity. When I first walked in after the purchase, I could literally feel the heat

swooshing out of the house.

We changed our remodeling priorities to insulate the house as quickly as possible. The walls were insulated, but the roof area had absolutely none.

We generally want to minimize our energy use in a manner to enhance the experience of our guests.

Steve: When the house was built in 1885, they had no reason to worry about insulation. Fuel was free. They just went out to the yard and cut down a tree.

Nancy: We also wanted to save the incredible craftsmanship and feel of the house. That's the meat of what ecotourism is all about. You feel the history and craftsmanship. They're palpable immediately when you walk in.

But insulating the house created challenges. Getting the moisture out of the air made the wood panels curl as they dried. The carpenter put his arm around me and said, "If you're patient, they'll come back." They did. It was a life lesson for me.

Q. *You recently added a second building, The Garden House. What did you do to make it green?*

Steve: Let me first say that we've gone way beyond the physical structure with both buildings. We have a sustainability operations plan, updated annually, that we use to measure yearly accomplishments and set goals for the following year, and we like to buy whatever we need from vendors who have their own sustainability plan.

We also pay a livable wage, probably more than anyone else in town, and people wonder why. But our employees stay four, five, six years. It hasn't cost us any more when we figure the savings on rehiring and retaining.

Nancy: Our room rates are competitive for the amenities we offer.

Steve: Employees also appreciate our use of non-toxic cleaning supplies. When one person first came to work, she brought in those big rubber gloves. She doesn't use them. We also buy as much organic and locally grown food as possible.

Q. *Okay. Back to the buildings.*

Steve: When we built the Garden House we used locally and sustainably harvested wood from Madeline Island — no old growth wood. For the exterior, we found cement fiber siding and decorative pieces that match the main house identically. We wanted to preserve the architectural integrity.

We added an aerobic digester to the septic system to more completely digest the sewage so that it's cleaner when it goes into the septic field.

Solar hot water panels supply the whirlpools, showers, and kitchenettes. In summer they supply all of the hot water. We received a grant from Focus on Energy for the panels, as well as an additional grant to help us market workshops and other types of training once we got the panels installed.

We'd love to add solar to provide in-floor heat, and we'll probably use in-floor heat in the garage to keep the temperature above freezing.

Nancy: In the old house, we put in new windows and created different heating zones so that the heat is more even throughout. We had beautiful gardens, but not next to the house, so we added landscaping to protect the foundation and secure air leaks.

We haven't put solar hot water panels on the old house because it has a bit of shading. We'll add them sooner or later because they'll produce some hot water and the trees won't be there forever.

Q. *You're even driving on biofuels?*

Steve: I first converted a Mercedes to biofuel just for fun. I did all the work myself, and I might have spent \$800.

We even have a diesel Jeep Liberty. When we saw that for sale, we didn't hesitate.

I collect restaurant grease and run it through a processor that I bought online. I'm probably making fuel for seventy-five cents a gallon.

Q. *You're active in sustainability issues beyond the inn, aren't you?*

Steve: We've both been very involved in the Alliance for Sustainability, a local sustainability group similar to Sustain Dane.

Both the town and village of Bayfield passed resolutions to become Sustainable Municipalities.

Q. *A sustainable organization in Madison is one thing, but in Bayfield? Did you encounter much opposition?*

Nancy: Not a lot. Even skeptics have been willing to be a part.

Steve: We're following the Natural Step, a Swedish model, but we want to be attuned to the area.

We also have green team networks operating in Bayfield and Ashland. We

have team in Northland College, the technical college, the visitor centers, and even Wal-Mart.

We have a restaurant and a manufacturer that came to us to be a part of a green team. A few years ago they wouldn't have talked to the Alliance.

Energy conservation is a big factor influencing people and businesses. A growing number are just getting it, understanding what we're doing to the planet, what happens by doing business as usual.

Nancy: Our communities are making a statement — a pretty direct one — and people and local governments are responding. Businesses are looking for assistance.

Q. *Is it worth all the extra time, money, and effort?*

Nancy: Absolutely. We love putting sustainability and energy conservation out there. We love showing what's going on. And it's the right thing to do, of course.

Steve: In the last three or four years as we've marketed ourselves more and more as an ecofriendly inn; we're getting different people. They go out of their way to stay with us because they like our philosophy. A woman driving coast-to-coast could have taken any route she wanted, but she swung way up here just to stay in the inn.

Q. *What's next?*

Nancy: We'll pick away at energy efficiency. Do more caulking.

Steve: Add some more solar hot water.

Nancy: Grow more of our own foods. We'll be here for a while, but who knows?☆

The Pineburst Inn provides virtual tours of its buildings and renewable energy installations at www.pineburstinn.com.

Wind energy projects a no go in Trempealeau

by Michael Vickerman
RENEW Wisconsin

What is it about living within sight of large wind turbines that spooks certain people to the point of irrationality?

Consider the example of Trempealeau County in western Wisconsin. At the urging of a local citizens group, the County Board there adopted an ordinance last month that requires wind turbines higher than 150 feet tall to be set back no less than one mile from neighboring residences, schools, churches and businesses. This is by far the longest setback distance on wind turbines imposed to date by a local government in our state.

Now, the population density of Trempealeau County (38 residents per square mile) is less than half of the statewide average of 103 residents per sq. mile. Even so, as one developer pointed out at the hearing, not one acre of land that can legally host a commercial wind generator under this ordinance.

Why would a local board effectively ban wind turbines within its jurisdiction? Those backing the ordinance say that the one-mile setback is necessary to protect the health and safety of its citizens. Turbines, they contend, may produce sounds and electrical currents that can cause illnesses, even though no peer-reviewed study documenting such a phenomenon exists.

In a recently published book examining the environmental impacts of wind energy projects," the National Research Council wrote that wind turbines that are 1,000 feet away from a listener produce "relatively low noise or sound-pressure levels compared with other common sources such as a busy office, and with nighttime ambient noise levels in the countryside. While turbine noise increases with wind speed, ambient noises—for example, due to the rustling of tree leaves—increase at a higher rate and can mask the turbine noise."

In other words, while wind turbines produce an aerodynamic sound that is audible at 1,000 feet, ambient sounds inside a residence (e.g., air-conditioners, fans, refrigerators) and outside (e.g., birds, crickets) will very often mask or muffle it, even at night.

Then there is the issue of the flickering shadows cast by the turbine's spinning blades at certain times of the year under certain conditions. Though wind opponents commonly inflate this phenomenon into a health issue, the National Research Council believes otherwise. "Shadow flicker is not important at distant sites (for example, greater than 1,000 feet from a turbine) except during the morning and evening when shadows are long. However, sunlight intensity is also lower during the morning and evening; this tends to reduce the effects of shadows and shadow flicker."

A house 1,000 feet from a wind turbine could experience as much as 20 hours of flickering shadows per year, assuming cloudless conditions and strong crosswinds during all 4,380 hours of daylight in a year. Even if Wisconsin had such a climate, which would make the state uninhabitable for obvious reasons, how does this even rise to the level of a nuisance, let alone a health risk?

But it doesn't take much mental effort to come up with at least a half a dozen land uses more disruptive to neighbors a half mile away than commercial wind turbines would be from 1,000 feet. Some that might legitimately be considered nuisances are airports, quarries, landfills, auto and motorcycle racetracks, rail freight corridors, hog farms, food processing plants, central station power plants, highways, automobile dealerships that are lit up 24/7, and deal. But to hear Trempealeau County's wind opponents talk, living among wind turbines would devastate their quality of life. That's a very harsh assessment of a form of electricity gen-



A crane lifts turbine components into place on a tower in the Blue Sky Green Field project in Fond du Lac County. The lower section of a tower rises in the background.

eration that neither pollutes the air or water nor depletes the energy resource it uses.

Trempealeau County's antipathy toward local wind generation is symptomatic of areas that are completely dependent on the outside world to provide them with their energy. All of the motor fuel, heat and electricity consumed by the citizenry comes from somewhere else. The coal that generates electricity for that area is mined in Wyoming. The power plants that burn the fuel are located in other counties. There is not enough generating capacity in that county to power a single holiday light display, let alone a school or a church.

Indeed, apart from the distribution lines along the roadways, there are very few visual cues reminding Trempealeau County of the electrical apparatus that allows them to toast their bread or automatically open their garage doors. Should one be surprised that a population used

Continued on page 7

No Go in Trempealeau

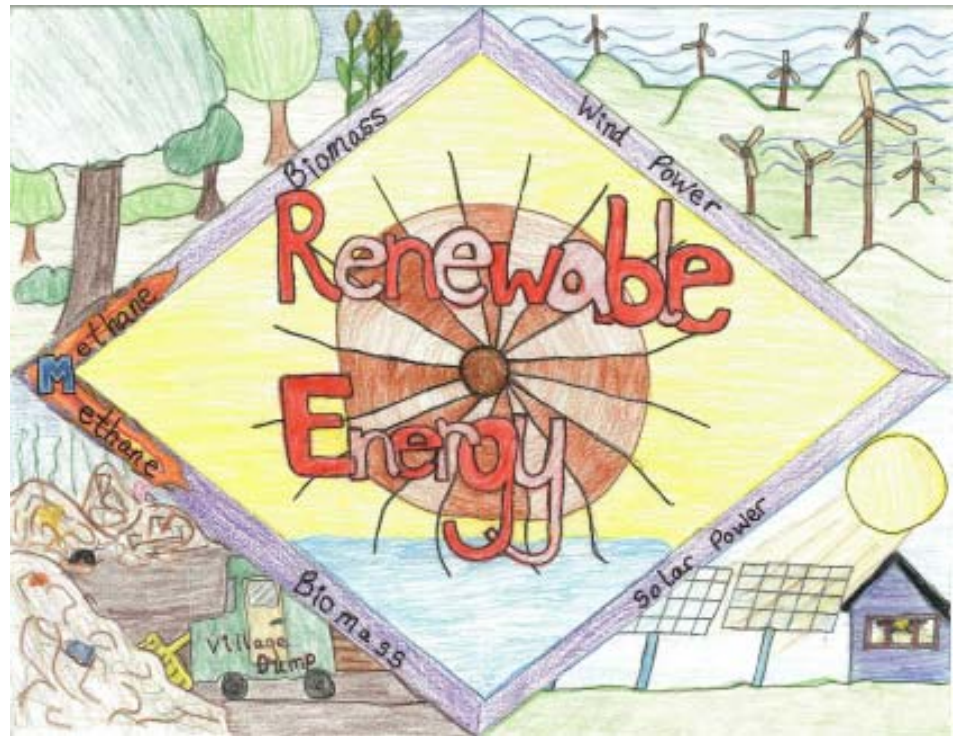
Continued from page 6

to views without smokestacks, large transmission lines, substations, strip mines, and drilling pads would object to wind turbines in their midst? Saddened maybe, but not surprised.

Yet some communities are beginning to appreciate the liability of energy dependency in a time when oil costs \$100 per barrel. In the Town of Springfield, a semi-rural part of Dane County 10 miles northwest of Madison, a group of farmers has banded together to host a six-turbine wind project. Though this installation would be visible from several dozen neighboring residences within a half-mile of it, not one of them has registered an objection to the proposed energy facility.

Indeed, this may be the only project in Wisconsin that has not triggered any opposition, even though the population density in Springfield is higher than in other jurisdictions where restrictive ordinances have been adopted, including Trempealeau County. Evidently, Springfield's residents have concluded that nearby wind turbines would not constitute a health or safety hazard.

This situation begs several questions. Why is the idea of living in proximity to wind turbines acceptable to some in Wisconsin and unacceptable to others? Is this conflict all about aesthetics, or are there other factors at play? Have we become a society that cannot face visual reminders of its unslakable thirst for energy? Have we become so blinded by the convenience of fossil fuels that we no longer possess the ability to envision -- and prepare for -- a future fueled by the wind and sun, by necessity? Who has the more compelling claim here: farmers hosting commercial wind generators on their property or neighbors imposing their fantasies of rural life on what was exclusively a working landscape? These are questions worth wrestling over, even though such an effort would inexorably lead to a book-length response.✧



Jessica Murphy from Waunakee sent the above entry when Wisconsin Public Power Inc. asked students in grades K-6 to submit original artwork that showcased their creativity and appreciation of renewable energy resources such as wind, water, sun, biomass and more. Jessica, a 6th grader at Waunakee Intermediate School, won the top prize of \$100, and WPPI made a \$100 donation to RENEW Wisconsin in her name. Second prize (\$50) went to Erin Jones, a 6th grade student at Menasha's Huntley Elementary School. Third prize (\$25) went to Paul Stillone, a 6th grade student at Ozaukee Christian School in Cedarburg.

Two Windpower Projects Near Completion

by Michael Vickerman
RENEW Wisconsin

Working steadily through the vagaries of Wisconsin winter weather, construction crews have, as of presstime, erected about 70 wind turbines at two Fond du Lac-area wind installations. When fully energized this spring, the projects' 174 turbines will have rated capacity of 274 megawatts (MW). Together they will increase Wisconsin's current installed capacity of 53 MW by sixfold.

Visible from U.S. Highways 41 and 151, Invenergy LLC's Forward Wind Center will consist of 86 GE 1.5 MW turbines spread over 10,000 acres of farmland in Fond du Lac and Dodge counties. Conveniently enough, the installation surrounds the

headquarters of Brownsville-based Michels Wind Energy, the project's general contractor.

Another grouping of cranes and fully assembled turbines, We Energies' Blue Sky Green Field installation, punctuates the horizon some 25 miles to the northeast of the Forward project. We Energies expects to energize all 88 of its Vestas 1.65 MW turbines before the end of May.

In conjunction with the 2008 Renewable Energy Summit taking place in Milwaukee, March 12-14, Chicago-based Invenergy and Michels Wind Energy will host a tour of the Forward project on March 12. Most of the project's turbines should be operating by that time. See tour details at the Renewable Energy Summit web site: www.renewableenergysummit.org ✧

Renewable and Energy Efficiency Events

Feb. 27, 2008	Wind in Wisconsin. Madison, WI. Michael Vickerman, Jeff Anthony of the American Wind Energy Association (AWEA), and other speakers will preview AWEA's forthcoming national assessment, "20% Wind Energy by 2030". Sponsored by Wisconsin Public Utility Institute and the UW Energy Institute. More information in the Program Calendar at http://wpui.wisc.edu .
March 5-7, 2008	Better Buildings: Better Business. Wisconsin Dells, WI. A conference on state-of-the-art building and remodeling practices for delivering energy efficient, renewable-ready, eco-friendly homes. Sponsored by Energy Center of Wisconsin. More details at www.ecw.org/betterbuildings .
March 12-14, 2008	2008 Renewable Energy Summit. Milwaukee, WI. Two-and-a-half days focused on how to expand the renewable energy market in Wisconsin and create "green collar" jobs. Sponsored by the Wisconsin Technical College System, Johnson Controls, RENEW Wisconsin, and many others. More information at www.renewableenergysummit.org .
April 15, 2008	Smart Strategies for Hotels. Door County, WI. In this workshop, hotel owners and managers will learn smart strategies for managing energy that will help them reduce operating costs and increase the profitability of their property. Sponsored by Focus on Energy. More information on the Calendar at www.focusonenergy.com .
May 22, 2008	Smart Strategies for Healthcare. Eau Claire, WI. This one-day workshop will help health care providers and facility managers determine how and where energy use occurs in a facility and understand how to facilitate a change in energy utilization. Sponsored by Focus on Energy. More information on the Calendar at www.focusonenergy.com .
June 20-22, 2008	Renewable Energy and Sustainable Living Fair. Custer, WI. The oldest and largest event of its kind, showcasing all renewable energy technologies. Sponsored by the Midwest Renewable Energy Association. More information at www.the-mrea.org .

Recycled paper

Address Service Requested

RENEW Wisconsin
222 South Hamilton St.
Madison, WI 53703