



Hard Times for Energy Conservation

It's been five years since the debate over deregulating the electric utility industry began in Wisconsin, and it has ushered in some striking changes on the energy landscape. Clearly the worst of these involves energy efficiency and conservation, which has all but fallen off the map as a policy priority. Once a national leader in pursuing energy savings, Wisconsin has been allowing its utilities to whittle down their investment in--and commitment to--energy conservation, even though complete deregulation appears to be several years away in Wisconsin.

This growing problem is detailed in a publication titled "Energy Efficiency Crisis Report."¹ authored by Ben Paulos and sponsored by Wisconsin's Environmental Decade, Union of Concerned Scientists, and RENEW. The full report can be seen on RENEW's web site, www.mailbag.com/users/renew-wi. Paper copies of the report are available on request.

These cutbacks are part of a larger utility management effort to shed costs in advance of entering the lean, mean world of competitive electric markets. Though the most painful costs have been reserved for energy conservation programs, weatherization services and environmental research and development programs have also felt the sting of funding reductions.

There is general recognition in most political circles that this problem--or at least parts of this problem--needs to be fixed within the current legislative biennium. A special council of the Wisconsin Legislature was convened last fall to consider new approaches to continuing utility "public benefits"--programs for weatherizing low-income households, reducing energy waste in businesses and households, monitoring utility environmental performance, and increasing renewable energy use. Since their inception, these programs have been funded by utility customers, with the approval of the PSC, but are now face the risk of being "orphaned" in a deregulated power industry.

The special committee, composed of 22 legislators and public members (including RENEW Executive Director Michael Vickerman), will issue its recommendations to the full Legislature in May. Though all of the above public benefit categories will receive attention, there is no guarantee that the Committee will recommend a package RENEW and other clean energy organizations can support.

Near the end of last year's legislative session, Sen. Brian Burke introduced a public benefits bill supported by Customers First!, a coalition of small utilities, citizen groups, labor, and environmental organizations, including RENEW. For this session Customers First! member

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organizations are gearing up to mobilize grassroots support for legislation that contains the following funding and program commitments:

- \$105 million/year for energy efficiency and conservation measures;
- \$59 million/year for weatherization and other low-income services
- \$5 million/year for encouraging the use of renewable power sources;
- \$2 million/year for environmental research and monitoring; and
- a Renewable Portfolio Standard (RPS) for gradually increasing supplies of renewable electricity in Wisconsin.

The current biennium (1999-2000) represents our best and perhaps last opportunity for adopting policies to promote the growth of conservation, renewable generation, and clean distributed energy systems in the evolving electric utility marketplace. Years if not decades of opportunities for using clean energy alternatives will certainly be lost if the Legislature fails to pass public benefits legislation this session, or passes a measure with weak environmental initiatives. For that reason, enacting strong public benefits legislation has become RENEW's No. 1 public policy goal.

The guts of this *Wisconsin Renewable Quarterly* contain materials--a call to action, the Customers First! public benefits proposal summary, a RENEW "White Paper" on public benefits and renewables, and guest columns--to communicate the importance of this issue and why legislation is

needed now. In promoting a strong public benefits package, we confront two immediate hurdles. The first is that legislators are generally unaware of the contribution to society that comes with reducing energy and using cleaner energy sources. The second hurdle-- and the higher of the two--is the fact that legislators are unlikely to be roused into taking positive action unless their constituents demand it.

Like electrons on a wire, legislators follow the path of least resistance, though perceptions, not physical laws, rule over what course they ultimately take. Right now, the path of least resistance on utility public benefits does not pass through strong clean energy provisions. Our task is clear: we must rearrange the political road map so that the legislative path of least resistance means including, not excluding, adequate funding for energy conservation and minimum standards for renewable electricity content. If we are to broaden our base of support and engage other, more influential constituencies to take up our cause, your participation will be essential. Give us a call at the office (608) 255-4044 to find out how you can help wire clean energy into the new utility world.

¹The report was prepared as part of a grant to Wisconsin's Environmental Decade and RENEW to push clean energy issues into the center of the utility restructuring debate. Funding for the report was provided by the Pew Charitable Trusts.

1998 – THE YEAR IN REVIEW

Renewable Energy Milestones in Wisconsin

January	<ul style="list-style-type: none"> The Wisconsin Electric Reliability Act is introduced in the Legislature. The bill contains a 50 MW renewable capacity set-aside. †
February	<ul style="list-style-type: none"> Wisconsin's first utility-scale windpower plant, a two-turbine (1.2MW) installation near De Pere in southern Brown County. ** Public Service Commission orders utilities to fund a statewide daylighting program. **
March	<ul style="list-style-type: none"> RENEW Wisconsin and Wisconsin's Environmental Decade sign an agreement outlining a cooperative approach for expanding and promoting Wisconsin Electric's (WE) Energy for Tomorrow program, now serving 7,000 customers with renewable energy. (By December 1998, 8,500 customers) In passing the Wisconsin Electric Reliability Act bill, the Legislature mandates 50 MW of new renewable power generation in Wisconsin by 2001. † Sen. Brian Burke introduces SB 517, which contains a renewable portfolio standard to increase electricity supplies from renewable energy sources.
April	<ul style="list-style-type: none"> Madison Gas & Electric files an application to own and install an 11.2 MW windpower plant in Kewaunee County. Gov. Thompson signs Wisconsin Electric Reliability Act. The requirement to build 50 MW of renewable generating capacity is assigned as follows: WE, 27 MW; Alliant-WP&L, 11 MW; WPS, 9 MW; and MG&E, 3 MW. Dairyland Power unveils its green power program, called Evergreen. Member co-ops begin soliciting commitments to purchase blocks of power from a new wind turbine in Minnesota. On Earth Day, Governor dedicates two-turbine installation near De Pere.
June	<ul style="list-style-type: none"> As part of its Solarwise for Schools program, Wisconsin Public Service (WPS) installs three new 4kW solar-electric systems at Mosinee, Waupaca, and East De Pere High Schools.
August	<ul style="list-style-type: none"> Wisconsin Electric issues RFP for up to 75 MW of new renewable generation. Alliant-WP&L issues RFP for 11 MW of new renewable generation.
September	<ul style="list-style-type: none"> WPS files application to build 9 MW of windpower in Kewaunee County.
October	<ul style="list-style-type: none"> Legislature convenes a Legislative Council study committee to investigate methods for providing utility public benefits in a re-structured industry. The committee's scope includes an examination of policy options for increasing renewable energy supplies.
November	<ul style="list-style-type: none"> Two Kewaunee County towns approve permits for construction of 20 MW of wind generation. Of the 31 turbines approved, 17 will be owned and operated by MG&E and 14 by WPS. Construction begins in December.
December	<ul style="list-style-type: none"> Statewide daylighting program is officially launched through the Energy Center of Wisconsin. **

** A direct result of RENEW Wisconsin's Public Intervention in Advance Plans before the Public Service Commission.

† A direct result of the Customer's First! Coalition.

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Wisconsin's PV Working Group

by Shelly Laffin

The sixth semi-annual PV Working Group meeting was held December 22 at the new Wisconsin Housing and Economic Development Authority Building (WHEDA) at 201 W. Washington Ave. in Madison. It was an occasion to showcase the WHEDA PV array — the first PV system installed on an office building rooftop in downtown Madison.

The WHEDA building was completed in the summer of 1997 and its 5.6 kW photovoltaic system was installed in August of that year by Ascension Technology, Inc. of Waltham, Massachusetts. The building also houses the Wisconsin Departments of Commerce and Tourism.



Members of the PV Working Group tour WHEDA's PV system, pictured left to right: Chuck Sasso (MG&E), Larry Krom (RENEW), Paul Helgeson (Public Service Comm.), Jeff Carlson (WEB), Dean Wolff (Harvestar Energy), Don Wichert (WEB), Glen Baldwin (Sun Energy Systems), Niels Wolter (MSB), and Ben Paulos (RENEW)

Learned, Utility Photovoltaic Group (UPVG) Funding Update, and WHEDA Building— Discussion and Tour.

Fritz Ruf, executive director of WHEDA, detailed his vision of a cleaner environment for future generations and the role that public buildings can play in that vision. He described the difficulties building owners might experience in convincing architects to include PV in a building project, as well as relating some of the history regarding the PV system on the WHEDA building. On behalf of the U.S. DOE, Mark Berger presented a Million Solar Roofs certificate to WHEDA. A similar certificate can be obtained by registering any PV installation at least 2 kW in size, with the DOE as one of the "Million Solar Roofs".

- *More detailed highlights of the meeting are available on the RENEW website: <http://www.mailbag.com/users/renew-wi>*
- *Cumulative monthly performance data from the WHEDA PV system datalogger are available from the Wisconsin Energy Bureau. (608) 266-1067*



PV Working Group Highlights

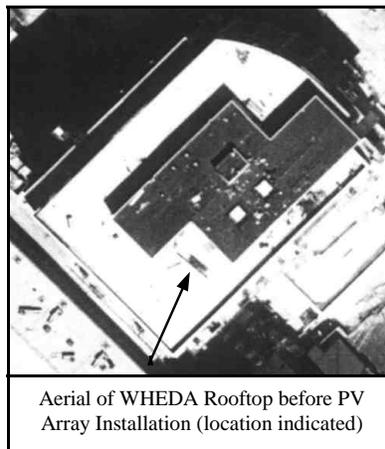
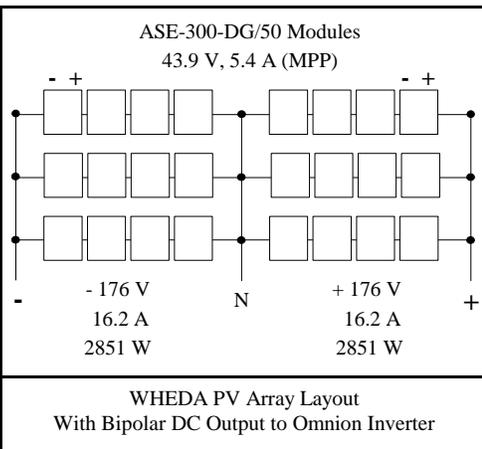
Initiated by the Wisconsin Energy Bureau (WEB), the PV Working Group keeps its members informed of federal and state initiatives, opportunities to develop partnerships, and the latest on PV projects in Wisconsin. Don Wichert, WEB Bureau Chief, welcomed 23 attendees to the group's Winter Solstice gathering.

PV Working Group Members include:

- Wisconsin utility representatives,
- **RENEW Wisconsin** and the Midwest Renewable Energy Association (MREA),
- Dept. of Energy (DOE) representatives from the regional Chicago field office,
- Wisconsin state agency representatives,
- Industry & business representatives, and
- Wisconsin PV installers.

Meeting presentations focused on recent PV developments in Wisconsin:

1. Don Wichert (WEB): Wisconsin Focus on Energy Pilot Project, Opportunities
2. Dave Shipley (Energy Center of Wisconsin): "Ten's of Thousands of Roofs" — An Update
3. Mark Berger (DOE): Million Solar Roofs/ Federal Initiatives
4. Fritz Ruf (WHEDA): WHEDA's Interest in PV
5. Niels Wolter (MSB Associates): Economic Evaluation of PV Under Various Ownership Options at the University/Research Park, Madison, WI
6. Wisconsin Utility Programs: Chuck Sasso (MGE), Jake Oelke (WPPI) and Don Wichert (WEPCO information)
7. Joel Goodman: Including PV and Daylighting in Commercial Buildings
8. Larry Krom: Wisconsin DNR PV Program and Installations — Lessons



WHEDA PV System Statistics:

- 24 ASE Americas modules (ASE-300-DG/50, available at various power ratings)
- Module power rating: 234 W_{mpp}
- Module size: 50.5 (l) x 74.5 (w) x 2 (h) inches (with frame)
- Module weight: 107 ±5 lb
- Ballasted mounting system
- Omnicion Power Engineering Corporation Series 2400 inverter (5 kW version)
- Installer: Ascension Technology, Inc.

Green Power Turning the Corner in Wisconsin

With last year's passage of the Wisconsin Electric Reliability Act (Act 204) and the implementation of several utility green power programs, renewable power seems to be turning the corner in Wisconsin. The current pace of construction and marketing activity is, by historical standards, impressive. What follows is a utility-by-utility round-up of green power initiatives as of February 1999. (Note: Northern States Power is not included in this list because it has no renewable energy program specific to the Wisconsin scene.)

Alliant

Under the terms of Wisconsin Act 204, Alliant must build or contract for 11 MW of new renewable generating capacity by December 31, 2000. The utility is now in the process of evaluating bids submitted in response to the Request for Proposals it circulated last fall. The decisions should be announced in March or April.

At a meeting with clean energy advocates last October, Alliant officials discussed tentative plans for offering renewable power to their customers. However, neither the launch date nor the specific terms of such a program has been set.

Meanwhile, Alliant's Iowa subsidiaries are associated with two of the largest wind farms in North America currently under construction. The smaller of the two, 42 MW Florida Power & Light project consisting of 56 Micon 750 kW machines, should produce more than 100 million kWh, enough to serve 17,000 customers. The other project, a 193 MW Enron project serving both Alliant and MidAmerican, will be when complete the single largest windpower installation in the world. Alliant's share of the project is 75 MW.

The flurry of windpower construction in Iowa stems from a legislative mandate on utilities to construct about 300 MW of renewable generating capacity. That law was enacted in 1983.

Dairyland Power Cooperative

It's official: La Crosse-based Dairyland Power Cooperative, which serves 27 distri-

bution cooperatives in Wisconsin, Iowa, Minnesota and Illinois, is now in the business of producing windpower for coop members. Power began flowing from Dairyland's first wind turbine last December. The 660-kW Vestas turbines, located in southwest Minnesota, represents Dairyland's share of a three-turbine installation built by California-based Foras Energy, an independent windpower developer. The output from the other two turbines is reserved for distribution cooperatives served by Cooperative Power, a Minnesota-based generation and transmission cooperative. Each turbine is expected to produce about 2,000,000 kilowatt-hours per year.

Power from Dairyland's wind turbine is marketed to individuals through a program called Evergreen. Under this program, individual customers could sign up to purchase windpower, to be sold in 100/kWh blocks each month. One block of windpower adds \$3.00 to an individual's monthly electric bill. About 1,800 blocks of windpower have been sold, enough to pay for all of the extra costs associated with this project. To serve new subscribers to Evergreen, Dairyland will have to acquire additional sources of windpower.

Madison Gas & Electric

Madison Gas & Electric recently received permission from two Kewaunee County zoning boards to proceed with construction of an 11.2 MW windpower installation. The \$15 million project will consist of 17 Vestas 660-kW turbines located in the Towns of Red River and Lincoln. MG&E intends to place the turbines in service before the end of June 1999. Site preparation activities are underway.

It's interesting to note that Wisconsin Act 204 requires MG&E only to install 3 MW of new renewable generating capacity, slightly more than one-quarter the size of this project. MG&E plans to market the windpower through a renewable premium program which should be unveiled sometime this winter. Windpower subscribers will pay a premium of \$5 for an 80 to 120 kWh block per month, the size of the block ultimately depending on whether the project is completed in time to qualify for a federal production tax credit worth 1.7 cents/kWh over 10 years. As it stands now, the production tax credit for windpower sunsets at the end of June 1999. Bills have been introduced in both houses of Congress to extend

the window of eligibility until June 30, 2004.

In its first year of operation MG&E's wind installation will generate over \$120,000 to town and county coffers under the state's shared revenue formula. As set forth in its Conditional Use Permits with the two towns, MG&E will pay an impact fee over and above the towns' share of the gross receipts tax, which declines as the value of the generating asset is depreciated. The agreed-upon formula ensures the towns of a constant stream of revenues as long as the wind generators remain in operation.

Wisconsin Electric Power Co.

Now into its third year of operation, Wisconsin Electric Power's Energy for Tomorrow program, which offers renewable power at a 30% premium over its regular rate, has attracted about 8,500 subscribers. Through Energy for Tomorrow, Wisconsin Electric customers have the option of purchasing one-quarter, one-half or all of their power from renewable sources. About 25 million kilowatt-hours of renewable electricity were aggregated and sold to Energy for Tomorrow customers in 1998, with hydro accounting for 85% of the power sold and biomass the rest.

Currently, Energy for Tomorrow is aimed at residential and small commercial customers. Wisconsin Electric will shortly announce the filing of new green rates for larger commercial and industrial customers, who will be able to purchase blocks of renewable electricity.

Wisconsin Electric issued an RFP last fall to acquire new renewable generating sources in compliance with Act 204. Though Wisconsin Electric's share of the mandate is 27 MW, the RFP solicited bids for up to 75 MW of capacity. Like Alliant, Wisconsin Electric will announce the winning bids in March or April.

Wisconsin Electric has obtained a conditional use permit from the Town of Byron (Fond du Lac County) to situate two Vestas 660 kW wind on a ridgetop location about 10 miles south of the city of Fond du Lac. Construction will commence pending approval from the Federal Aviation Administration. The output from this project will be sold through the Energy for Tomorrow program.

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Wisconsin Public Power Inc.

Sun Prairie-based Wisconsin Public Power, Inc. (WPPI), serving 30 municipal utilities, recently issued a Request for Proposals to add between 2 MW and 5 MW of renewable generating capacity on its system. WPPI intends to market whatever renewable power it acquires through a premium program, which it hopes to have in place by year-end.

Wisconsin Public Service Corp.

About four miles from MG&E's Kewaunee County project, WPS is building a windpower project of its own. At 9 MW, the installation equals but does not exceed WPS's share of the 50 MW renewable capacity mandate under Act 204.

WPS's wind farm will consist of 14 Vestas 660-kW turbines, all in the Town of Lincoln. In its first year of operation, this wind farm will contribute approximately \$100,000 to town and county coffers.

Like MG&E, WPS is anxious to complete its project by June this year. Unlike MG&E, WPS has no plans to sell the out-

put from this facility through a premium program.

WPS also operates an environmental education initiative, called SolarWise for Schools, which has resulted in the installation of 48 kW of photovoltaic (PV) arrays

on six high school rooftops in its service territory. WPS's plans call for adding three high more schools this year to its SolarWise for School program, which is administered through the company's foundation.

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 **Say Yes to a Renewable Energy Future for Wisconsin**

I want the energy I use to come from clean, sustainable, locally available renewable resources.

I will help RENEW make that happen.

5 I want to volunteer my time. Call me.

5 I would like to become a supporting member of RENEW. Enclosed is my check for:
5 \$ 20 **5** \$ 30 **5** \$ other

5 I can't afford to become a supporting member, but I'd like to make a donation.

Name _____

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