A **Coalition** to preserve Wisconsin's Reliable and Affordable Electricity

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the Wire

Plugging you in to electric industry changes

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Electric grid overseer sees changes

The planning, design, and operation of electricity delivery systems have been for the most part invisible to end-use customers, but with the infrastructure requirements of greater reliance on wind and other renewable energy sources, that may change, according to the group that sets reliability standards for the nation's electrical grid.

Grid operators have been making it clear that expanded wind generation capacity will mean a major new transmission build-out for Midwestern states. Now, the North American Electric Reliability Corporation (NERC) has weighed in with a report that begins to examine how wind development over the coming decade will fundamentally alter the way the grid is planned and operated.

In "Accommodating High Levels of Variable Generation," published this spring, the NERC says the adjustments needed to integrate the vast new wind capacity anticipated in response to state and federal policy mandates "have the potential to fundamentally change the way the system is planned, operated and used—from the grid operator to the average residential customer."

Within the territory of the Roseville, Minnesota-based Midwest Reliability Organization (MRO), the NERC said an installed capacity of 45,000 megawatts of wind generation is expected by 2017, compared with less than 5,000 megawatts installed as of last year. Operating under NERC and federal authority, the MRO serves Wisconsin, Upper Michigan, Minnesota, Iowa, the Dakotas, Nebraska, and parts of Manitoba and Saskatchewan.

Overall, the NERC's *2008 Long-Term Reliability Assessment* estimates more than 145 gigawatts of wind generation either planned or proposed by 2017 in North America, and one essential response to the geographic remoteness of much of that capacity and the variable nature of its availability will be a more robust transmission system, the organization concludes.

"Many new variable generation plants interconnecting to the bulk power system will be located in areas remote from demand centers and existing transmission infrastructure due to fuel availability," the NERC report says by way of noting that just 7 percent of the U.S. population lives in the top 10 states for wind potential.

Planning and forecasting for grid operation will face special challenges, the report says, noting, "The output of variable resources is characterized by steep 'ramps' as opposed to the controlled, gradual 'ramp' up or down of electricity demand and the output of conventional generation. Managing these ramps can be challenging for system operators, particularly if 'down' ramps occur as demand increases and vice versa."

Though errors in forecasting demand are typically small, errors in forecasting wind availability can be large, the NERC said. A 12-hour demand forecast for a system with 10 megawatts peak demand would typically be subject to an error of about 3 percent, while a 12-hour forecast of wind availability for the same system could "readily" be subject to error of 20 percent to 100 percent, "And forecast errors grow appreciably with time horizon," the report said.

Sergel

In February 2008, NERC President Rick Sergel said the organization had seen "a lot of public support for wind and renewables development over the past year, but in order to realize the value of these resources, we need the same kind of support for the transmission lines that will link them to population centers."

Wind bill, modified, advances

Statewide wind-energy siting standards were advanced by an Assembly committee in June—after the panel added a few more criteria for determining appropriate locations.

Among a number of changes adopted by the Assembly Committee on Energy and Utilities is one allowing a municipality to deny a permit for a wind project if the affected area is already designated for future residential or commercial development. Such a denial could be appealed to the Public Service Commission, which could overturn it if it finds the project to be in the public interest.

Also added to the bill: provisions directing the Department of Natural Resources to identify areas where wind turbine placement might have a significant adverse effect on bat and migratory bird populations and to study whether the department's statutory authority is sufficient to adequately protect wildlife and the environment from any potential adverse effect of siting a wind system.

The committee endorsed the revisions, in the form of a substitute amendment to Assembly Bill 256, on a vote of 10–2 and sent it on for consideration by the full house.

THE WIRE is a monthly publication of the *Customers First!* Coalition—a broad-based alliance of local governments, small businesses and farmers, environmental groups, labor and consumer groups, retirees and low-income families, municipal electric utilities, rural electric cooperatives, wholesale suppliers, and an investor-owned utility. *Customers First!* is a coalition dedicated to preserving Wisconsin's reliable and affordable electricity.

If you have questions or comments about THE WIRE or the *Customers First!* Coalition, please call 608/286-0784.

KEEPING CURRENT

With CFC Executive Director Matt Bromley

When the Governor's Global Warming Task Force considered strategies to cut greenhouse emissions, members quickly recognized a need for aggressive energy efficiency and conservation measures. Perhaps the most significant of the first proposals put forth in February 2008 is a recommendation to substantially increase energy efficiency and conservation through Focus on Energy and similar programs run by municipal utilities and electric cooperatives. The biggest change moves the Focus program away from a spending level capped at 1.2 percent of utilities' revenues to an amount sufficient to achieve a certain percentage reduction of energy use. As it is now, ratepayers bear the cost (and benefits) of these programs through their utility bills.

So what kind of money are we talking about? In 2008, the Focus program spent about $90 million based on 1.2 percent of utility revenues. That achieved about a half-percent reduction of electricity use and a little less for natural gas.

Bromley

The Task Force recommends a 2 percent annual reduction for electricity and 1 percent for natural gas by 2015, more than tripling the energy use reductions through Focus, so simple math shows program spending could increase to about $300 million annually.

Although the dollar amount may cause heartburn for some customers, the investment should in the long run actually help them keep energy bills in check as efficiency and conservation measures become more integrated and households and customers use, and pay for, less energy.

To get a better handle on how much investment could potentially occur and the related cost-benefits, the Public Service Commission opened an investigation into the increased conservation and energy efficiency goals (see PSC Docket 5-UI-115). As part of this proceeding, the Energy Center of Wisconsin submitted a study of the state's achievable energy efficiency potential. It found that by 2012 Wisconsin could obtain annual energy savings totaling 1.6 percent of electricity sales and 0.9 percent of natural gas sales with an investment of $340 million per year and changes to the design and marketing of the Focus programs. It goes on to say the energy costs savings would be a whopping $1.3 billion. Some may question this figure, but for those concerned about high energy bills and the environmental impact of energy production, efficiency and conservation may be well worth the investment.

Transmission called biggest obstacle to new wind

Attendees at a national conference have identified a clogged transmission grid as the biggest challenge to overcome in expanding wind energy capacity—far ahead of financing and access to capital.

NRG Systems, a manufacturer of wind measurement devices and turbine-control sensors, polled attendees at the American Wind Energy Association's WINDPOWER 2009 Conference in Chicago this spring. Half (49 percent) of respondents said transmission or interconnection issues are the biggest barriers to additional U.S. wind energy development.

While economic worries clearly play an important role, they lagged far behind transmission access. Twenty-eight percent ranked the economy, specifically financing and access to capital, as the second biggest barrier to development.

Forty-three percent said an upgraded national transmission system would be the biggest help to wind development, well ahead of even a national renewable energy standard (31 percent) and cap-and-trade legislation (only 9 percent).

More than 400 conference attendees, 85 percent of whom said it was important to them to work in a "green" job, participated in the poll.

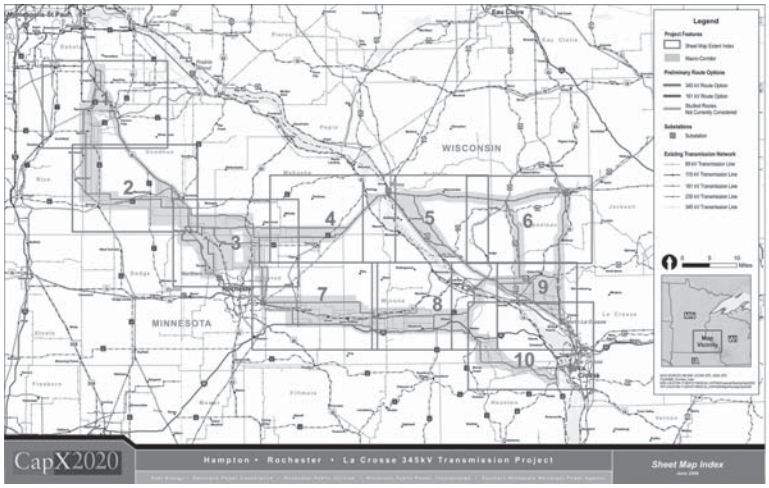
Route change suggested for new line

A large new transmission line between the Twin Cities and La Crosse may traverse more of Wisconsin than previously expected in order to accommodate environmental concerns raised by federal officials.

The proposal to consider a longer run across Wisconsin farmland was prompted by indications that the U.S. Fish and Wildlife Service would be unlikely to permit additional right-of-way through the Upper Mississippi Wildlife Refuge. Last month, planners for the CapX2020 project suggested the new line could cross the Mississippi into Wisconsin at Alma, run eastward across Buffalo and Trempealeau Counties to Blair, and then turn southward to La Crosse.

The change would add about 15 miles to the route of the planned 345-kilovolt line, compared with the original proposal to follow the Mississippi River valley from Hastings, Minnesota, to La Crosse.

Transmission right-of-way with existing lines of significant size—though not so large as the one now proposed—follows the river valley on the Wisconsin side roughly from the confluence of the Mississippi and Chippewa Rivers at Nelson in Buffalo County down to the vicinity of Lynxville in Crawford County.



CapX2020, which includes Dairyland Power Cooperative, Xcel Energy, WPPI Energy, and cooperative and municipal utilities in Minnesota, aims primarily at boosting transmission capacity in that state. In April, it won preliminary approval for three new 345-kilovolt lines in Minnesota.

The approval process for the Wisconsin segment of the overall $1.7 billion project is still in its early stages.

Study: Merchant generators recession-proof

Despite the troubled economy, the profits of companies selling wholesale electricity outside the framework of regulated utilities held steady or increased in 2008, a new study by the American Public Power Association (APPA) has found.

The analysis looked at nine of the biggest sellers of non-utility (read: unregulated) generation in the PJM (Pennsylvania, New Jersey, Maryland) wholesale power market. It found the biggest profits flowing to companies that owned generation for the most part paid for by ratepayers prior to restructuring.

Of the nine companies, just three report financial data separately for their generation segments, and those, Exelon, Public Service Enterprise Group, and PPL Energy, reported annual returns on equity of 30 percent for 2007 and 2008, tripling the return for utilities operating under traditional regulation.

The APPA concluded—on the basis of this and prior studies—that wholesale markets run by regional transmission operators have failed to produce the "just and reasonable" rates required by federal law.

Texas wholesale market faulted

Possibly even more so than in other states that restructured their electric utilities, a debate continues in Texas as to whether the change has been good for customers.

It's beyond question that Texas electric rates have risen sharply over the years, but enthusiasts maintain things would be even worse if restructuring hadn't happened. Now comes the AARP with a new study that takes a slightly different perspective.

Released this spring, the AARP study suggests changes in the Texas wholesale electricity market might actually deliver some of the savings customers were expecting from utility restructuring when their state joined the movement back in 1999.

Operating basically with a grid of its own, the Lone Star State doesn't show up individually in most of the other, more nationally or regionally focused studies we've noted in *The Wire*. But in May, AARP reported its estimate that flaws in Texas wholesale power markets add $52 annually to the average residential electric bill.

The report blames a lack of transparency and competitiveness in the wholesale market; for instance, it faults state law for not requiring fast and extensive disclosure of wholesale market bidding information, some of which need not be released for 60 days.

Others maintain that the most relevant information—the bid submitted by generators that ends up setting the price for wholesale power in a given period—must be disclosed within 48 hours.

Defenders of the current system point to falling wholesale prices in the early months of 2009. Critics note that the lower prices coincided with plummeting demand—especially demand for natural gas, which fuels most of Texas' newer generating facilities—amid the economic slowdown.

Energy saver tip

Going on vacation? An empty house doesn't need the same level of climate control as one that's occupied, so set air conditioning equipment to allow higher temperatures while you're away. Adjust the water heater to cut running time. Close curtains or drapes to help stabilize temperatures and use automatic lamp timers to make it appear someone's at home during your absence.

Be sure
to check out the
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Quotable Quotes

"These [regional] wholesale power markets were created to assure competition and lower electric rates and have done neither. Instead they produce power costs that unfairly reward a few generators and punish consumers."

—Mark Crisson, American Public Power Association CEO, on a study of electric restructuring's cost penalties to consumers, in a June 1, 2009, statement through *PRNewswire*

Help us share our messages with others. If you know of businesses or organizations that would like to learn more about protecting Wisconsin's reliable and affordable electricity, please feel free to copy and share with them all or part of this newsletter, or you can call 608/286-0784 to arrange an informational meeting.

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