

The Next Generation

Renewable Energy Objective

*Minnesota's
Smart
Renewable
Standard*



Executive Summary

On December 12, 2006, Governor Pawlenty announced the Next Generation Energy Initiative, proposing a comprehensive package to dramatically increase the amount of renewable energy Minnesota uses and produces; to re-double Minnesota's energy efficiency and conservation efforts; and to aggressively address greenhouse gas emissions in Minnesota and the Midwest region. ***That announcement has set the stage for what could potentially be the most productive legislative session on energy issues in decades.***

A key component to the Governor's announcement was his call for a Next Generation Renewable Energy Objective – increasing, expanding, and improving the current Renewable Energy Objective (REO) so that a quarter of the electricity Minnesotans use comes from renewable resources by 2025.

Minnesota's REO is a unique-in-the-nation program that combines the firmness that renewable energy advocates require in a Renewable Energy Standard (RES)¹, with the flexibility that consumer business advocates and utilities value in order to minimize cost and reliability impacts from renewable mandates. This combination allows a more targeted and ratepayer-friendly approach to increasing the amount of renewable energy a utility provides to its Minnesota consumers than the one-size-fits-all renewable standards found in other states. Especially with the reforms proposed by Governor Pawlenty, the NextGen REO is ***Minnesota's Smart Renewable Standard.***

Under the current REO, the electric utilities that are responsible for generating or purchasing the electricity used by Minnesota retail consumers are required to make a good faith effort to have 10% of that electricity come from eligible renewable resources by 2015. The REO has often been misunderstood to be a "voluntary" program. ***There is nothing voluntary about the REO.***

The good faith effort requirement is the heart of this Smart Renewable Standard. Good faith effort is a concept well-developed in law, and it means, generally speaking, that the REO utilities are ***required to do everything that can reasonably be expected of them*** to meet the REO targets while minimizing adverse reliability and cost impacts to Minnesota consumers.

Inherent in the good faith effort requirement is the ability to strike the optimum balance of firmness and flexibility. It is essential that Minnesota's renewable electricity program be firm enough that utilities and their consumers know what is required. At the same time, it is crucial that the program be flexible enough to allow those utilities and Minnesota regulators to respond to changing market conditions, consumer demand for electricity and regulatory circumstances. The faulty design of the renewable standards of other states is likely responsible for the ***"chronic undercompliance"*** found in RES states such as California, Nevada, Massachusetts and Arizona.²

¹ The Minneapolis Star Tribune Editorial Board called the Governor's NextGen REO "essentially indistinguishable from a Renewable Energy Standard." See "A Bold, Balanced Initiative on Energy," Minneapolis Star Tribune, December 16, 2006.

² See "Meeting Expectations: A Review of State Experience with RPS Policies" by Ryan Wiser, Lawrence Berkeley National Laboratory (March 2006).

When first passed in 2001, the REO was little more than a bare outline of renewable energy targets, without teeth. Over the past four years, a number of reforms to the REO have been to firm up the REO. Specifically,

- the REO is to be policed and enforced by the Minnesota Public Utilities Commission (MPUC), according to specific criteria and standards to judge utility compliance,
- the REO utilities are required to plan for transmission to support the REO, so lack of transmission capacity is no excuse, and
- REO compliance is a specific requirement for obtaining permission from the Commission to build large energy infrastructure.

In stark contrast with a number of RES states, Minnesota's electric utilities are complying with and exceeding the current REO. All of the utilities that have completed the MPUC's compliance review thus far this year, comprising nearly 90 percent of total Minnesota retail sales, were found to be in compliance with the REO.³ ***Their combined efforts exceed the current REO*** target of 2 percent for 2006, and collectively 3.5 percent of their electricity comes from renewable resources.

It is clear that more can be required from Minnesota's electric utilities as renewable technologies become more advanced; as our understanding of how to integrate large percentages of renewable resources into the electric grid grows; as the consequences of greenhouse gas emissions in the global atmosphere become clearer; and as the benefits to the state's economy of renewable development becomes more significant.

In doing so, it is vital that the next generation of renewable energy policies ***include explicit provisions to protect Minnesota's ratepayers*** if things do not go as expected, as well as ***specific mechanisms to promote community-based and locally owned renewable energy production***. Much of the benefit of renewable energy development for Minnesota's consumers would be lost if those provisions are not included.

A final note: as noted above, the 2007 session has the potential to be the most productive energy session in the past few decades. In order to ensure that potential is realized, it is important that the issues addressed by the Governor in his Next Generation Energy Initiative – renewable energy, energy efficiency and conservation, and global warming – be worked on together, as a package of related energy issues. Doing so will ensure that none of these issues gets stranded this session and that the policies adopted work in concert. Doing so will also allow discussions between stakeholders to rise to the highest common denominator, resulting in the best overall energy policy for the citizens of the state.

³ The list of utilities that have completed the MPUC review includes Xcel Energy, Minnesota Power, Missouri River Energy Services, Great River Energy, Dairyland Power Cooperative, and Otter Tail Power. Of these, only Missouri River Energy Services failed to meet the specified goal, but still was found to have met the good faith effort requirement. The utilities whose compliance has not yet been reviewed by the Commission include Alliant Energy (Interstate Power & Light), Southern Minnesota Municipal Power Agency, and Minnkota Power Cooperative.

By working cooperatively together on a bi-partisan basis, we will be able to pass legislation to provide for a cleaner environment and a healthier economy without harming ratepayers in the process, and create a ***nation-leading comprehensive energy policy for the Next Generation***.

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Introduction

Under Minnesota Statutes, section 216B.1691, subdivision 3, the Department of Commerce is required to compile information provided by the electric utilities subject to the state's Renewable Energy Objective, describing:

- (1) the status of the utility's renewable energy mix relative to the good faith objective;
- (2) efforts taken to meet the objective;
- (3) any obstacles encountered or anticipated in meeting the objective; and
- (4) potential solutions to the obstacles.

The Department is required to report to the chairs of the house of representatives and senate committees with jurisdiction over energy and environment policy issues as to the progress of utilities in the state in increasing the amount of renewable energy provided to retail customers, with any recommendations for regulatory or legislative action, by January 15 of each odd-numbered year. This report is provided to satisfy that legislative responsibility.

This report will:

- describe Minnesota's Renewable Energy Objective
- discuss the importance of Community Based Energy Development
- provide details for the Governor's proposed improvements to the REO, creating the Next Generation REO
- summarize an number of key issues regarding renewable energy development in Minnesota
- present a summary table for each electric utility subject to the REO, describing that utility's REO compliance and
- summarize Governor Pawlenty's Next Generation Energy Initiative, announced on December 12, 2006 at the Midwest Ag-Energy Summit.

Minnesota's Renewable Energy Objective

Minnesota's Smart Renewable Standard. Minnesota's Renewable Energy Objective (REO) is a unique-in-the-nation program that combines the firmness that renewable energy advocates require in a Renewable Energy Standard (RES) with the flexibility that consumer business advocates and utilities demand in order to minimize cost and reliability impacts from renewable mandates. This combination allows a more targeted and calibrated approach to increasing the amount of renewable energy a utility provides to its Minnesota consumers than the one-size-fits-all renewable standards found in other states. Especially with the reforms proposed by Governor Pawlenty, the NextGen REO is Minnesota's Smart Standard.

REO Basics. Under the REO, the electric utilities that are responsible for generating or purchasing the electricity used by Minnesota retail consumers are required to make a good faith effort to add renewable resources from a specified list of eligible technologies. The current REO requires these utilities to make a good faith effort to have at least one percent of the electricity provided to Minnesota consumers come from eligible renewable resources in 2005, increasing by at least one percent per year for ten years. Once fully implemented, at least ten percent of the electricity provided to Minnesota consumers would be generated by eligible renewable resources by 2015 under the current REO.

Compliance. All of the utilities whose compliance has been reviewed by the MPUC were found to be in compliance with the REO.⁴ These utilities account for nearly 90 percent of total retail electric sales in Minnesota.

Under the REO, the current statewide goal is to have at least 2 percent of total retail electric sales in the state come from eligible renewable resources. The utilities whose compliance has been reviewed by the MPUC receive 3.5 percent of their electricity from eligible renewable resources. Most of this energy comes from resources that were built to meet the REO. The REO utilities have added or are planning to add in the next few years over 1,800 megawatts of wind and over 260 megawatts of biomass electricity to meet the REO.

⁴ These electric utilities are Xcel Energy, Minnesota Power, Great River Energy, Missouri River Energy Services, Otter Tail Power, and Dairyland Power Cooperative.

Covered utilities. The electric utilities subject to the REO (also known as “the REO utilities”) are as follows.

- Investor-owned electric utilities (IOUs)⁵
 - ◊ Xcel Energy (Northern States Power)
 - ◊ Minnesota Power (Allete)
 - ◊ Otter Tail Power
 - ◊ Interstate Power & Light (Alliant)
 - ◊ Northwestern Wisconsin Electric Company
- Generation and Transmission Cooperative Electric Associations (G&Ts)⁶
 - ◊ Great River Energy
 - ◊ Minnkota Power Cooperative
 - ◊ Dairyland Power Cooperative
 - ◊ Basin Electric Power Cooperative
 - ◊ East River Electric Power Cooperative
 - ◊ L&O Power Cooperative
- Municipal Power Agencies (MPAs)⁷
 - ◊ Southern Minnesota Municipal Power Agency (SMMPA)
 - ◊ Missouri River Energy Services (MRES)
 - ◊ Northern Minnesota Municipal Power Agency (NMPA)
 - ◊ Minnesota Municipal Power Agency (MMPA)
 - ◊ Central Minnesota Municipal Power Agency (CMMPA)

Eligible renewable resources. Only renewable electricity generated by certain renewable resources may be counted toward a utility’s REO targets. To count toward the REO, the electricity must be generated by wind, solar, biomass (including mixed municipal solid waste), hydrogen and hydropower resources under 60 megawatts.

By statute, the electricity generated by the renewable resources mandated by the 1994 legislative compromise on the storage of nuclear waste at Xcel Energy’s Prairie Island nuclear facility may not be counted toward the REO. By Commission order, renewable electricity generated for

⁵ Investor owned electric utilities, also known in Minnesota law as “public utilities providing electric service” are generally vertically integrated, meaning that they generate, transmit and distribute electricity for retail sale to consumers. These utilities are for-profit companies that are owned by their shareholders, and are subject to the broadest regulatory jurisdiction of the Minnesota Public Utilities Commission.

⁶ G&Ts are cooperative associations that generate and transmit electricity, but do not distribute electricity to Minnesota consumers. For these G&Ts, retail distribution electric services are generally provided by “distribution electric cooperative associations” (otherwise known as distribution rural electric associations). The distribution co-ops form and own the G&T co-ops, and regulate the rates and terms of the G&T. As not-for-profit utilities, cooperative electric associations are generally self-regulated under Minnesota law, except where otherwise specified.

⁷ MPAs are similar in nature to G&T co-ops, except they are publicly owned and regulated by the municipalities to which they provide generation and transmission services.

distribution to Minnesota consumers under a utility's green-pricing program (which allows customers to voluntarily pay a premium for additional renewable energy) may not be counted toward the REO.

Under the REO statute, there is no "vintage" or in-state requirements for renewable resources to count toward the REO. Those eligible resources that existed at the time of the passage of the REO statute, however old, or that are located outside of Minnesota may be counted, as long as the energy from those resources is deliverable to Minnesota consumers.

Good faith effort. The REO has often been mischaracterized or misunderstood as a "voluntary" program. There is nothing voluntary about the REO.

The heart of the Smart Standard is the requirement for the REO utilities to make a good faith effort to meet the targets specified in the law. Good faith effort is a concept well-developed in law, and it means, generally speaking, that the REO utilities are required to do everything that can reasonably be expected of them to meet the REO targets while minimizing adverse reliability and cost impacts to Minnesota consumers.

Inherent in this reasonableness requirement is the ability to calibrate the renewable standard to the particular economic and technological conditions facing each utility, to strike the optimum balance of firmness and flexibility. It is this aspect of the REO that makes it a "smart" standard. Minnesota's renewable electricity program must be firm enough so that utilities and their consumers, as well as the renewable energy markets, know what is required of the REO utilities. At the same time, the program must be flexible enough to allow those utilities and Minnesota regulators to respond to changing market conditions, consumer demands and regulatory situations.

The strength of the Smart Standard and the need for adequate flexibility can be seen in the following two examples:

1. *Expiration of the Federal Production Tax Credit.* Under the federal production tax credit (PTC), federal taxpayers provide 1.9 cents per kilowatt-hour for wind projects, covering approximately 30 percent of the cost of wind energy. The PTC must be (and to date, has been) periodically re-authorized by the U.S. Congress. However, if Congress were to fail to reauthorize the PTC, Minnesota ratepayers would be automatically subject to a 30 percent increase in cost of new wind energy, under a one-size-fits-all RES. The REO provides regulators, utilities, and consumer advocates the opportunity to consider options and respond appropriately.
2. *Downturn in a region's economy.* It is one thing to require utilities to add new renewable resources while the economy is doing well and utility loads are growing. It is another thing to require new resources when the economy of a region of the state is not doing as well. For example, the economy of the Iron Range is doing better now than it has in many years, and the utilities that serve that area are adding new resources to meet growing demand. However, if the Iron Range economy were

to once again take a downturn, it could be a significant hardship on the consumers and businesses in that region to require those utilities to continue to add resources that are not needed. Under the REO – Minnesota's Smart Standard – regulators, utilities and consumer advocates have the opportunity to look at the specifics of a particular situation and make appropriate policy choices.

As noted above, it is also essential that the REO be sufficiently firm. When first passed in 2001, the REO was little more than a bare outline of renewable energy targets, without teeth. Over the past four years, a number of reforms to the REO have been made, firming up the REO. Specifically,

- the REO is to be policed and enforced by the Minnesota Public Utilities Commission
- the Commission is to establish specific criteria and standards to judge utility compliance (see Table 1);
- the REO utilities are required to plan for transmission to support the REO, so lack of transmission capacity is no excuse;
- the REO has become a mandate for Xcel Energy, subject to least-cost planning requirements; and
- REO compliance is a specific requirement for obtaining permission from the Commission to build large energy infrastructure, or in the case of Xcel Energy, to add additional nuclear waste storage capacity.

In his Next Generation Energy Initiative, Governor Pawlenty has proposed firming up the REO still further, by imposing financial penalties for utilities that fail to make the good faith effort required under the REO. The NextGen REO is discussed in some detail beginning on page 8.

Table 1.
MPUC Criteria and Standards for
REO Compliance

- **Demonstrated commitment to a comprehensive and specific plan to meet the REO**, which details the steps to be taken to reach the renewable energy objectives, with an accompanying timetable.
- **Demonstrated financial commitments** to build or to purchase energy to meet the renewable energy objective, including project financing; purchase and ordering of equipment; and expenditures to hire construction firms if needed.
- **Demonstrated commitments to construction of physical infrastructure** to meet the REO, including ordering equipment; hiring construction firms; and/or contracting for REO sites.
- **Demonstrated legal and contractual commitments** to purchase or build the facilities to meet the REO, including but not limited to contracts for sites on which to build; contracts for labor and equipment; arrangements for insurance and liability; or, in the case of contracts for purchases to meet the REO, a negotiated power purchase agreement.
- **Demonstrated commitment to meet regulatory requirements** in timely fashion, including all permitting and other regulatory obligations.
- **Demonstrated commitment to transmission access** for REO facilities, including the initiation or participation in transmission studies or provision of interconnection and transmission service for REO facilities.
- **Demonstrated commitment to openness and transparency**, including full public access to all non-proprietary information relating to meeting the REO.
- **Demonstrated analysis of each project's technical feasibility and its potential for negative impacts on reliability and rates**, including:
 - Maintaining or improving the adequacy and reliability of utility service
 - Keeping the customers' bills and utility's rates as low as practicable
 - Minimizing adverse socioeconomic effects and adverse effects upon the natural environment
 - Enhancing the utility's ability to respond to changes in the financial, social and technological factors affecting its operations
 - Limiting the risk of adverse effects on the utility and its customers from financial, social and technological factors the utility cannot control.

Community-Based Energy Development (C-BED)

Community-Based Energy Development (C-BED) is a critical and unique component of Minnesota's Renewable Energy Objective. C-BED projects are locally-owned wind energy projects located in Minnesota. As with the farmer-owned ethanol plants that have acted as economic anchors for Minnesota's farm communities and rural economies, C-BED projects capture energy dollars to the local economy to be reinvested locally again and again. Local ownership and local benefits of energy production is central to the Pawlenty Administration's energy policy.

Minnesota is the unquestioned national leader on local ownership of wind energy production. In November of 2005, Governor Pawlenty sought to aggressively build on that leadership by establishing a C-BED goal for the state of an additional 800 megawatts of locally owned wind projects by 2010 (on top of the nation-leading 200 MW in operation in 2005). As of this writing, over 470 MW of C-BED projects toward meeting the Governor's goal are either under contract (166.85 MW) or under serious negotiation (303.35 MW). Xcel Energy has committed to providing 500 MW toward the Governor's C-BED goal, and accounts for over half of the 470 MW under contract or under serious negotiation.

Legislation promoting C-BED projects was proposed and enacted in the 2005 legislative session by a broad coalition that included the Department of Commerce, renewable energy activists, electric utilities, the business community and others. See Minnesota Statutes, section 216B.1612. That legislation specified that compliance with the REO requires each REO utility to consider locally owned projects to meet its REO obligation.

A key component to the C-BED statute is the availability of a "front-end loaded rate" for the energy from a community-based energy project. The front-end loaded rate means that the project can receive a higher rate from the utility in the early years of a wind energy contract, in exchange for a lower rate in the later years of a contract. This financing tool is intended to allow C-BED projects to overcome financing barriers, and cash flow a project during the first 10 years of production when the project owners must service the debt on the project. Over the life of a 20 year contract, the net present value of the front-end loaded rate must be under 2.7 cents per kilowatt-hour, using the utility's standard discount rate. There is no size or capacity limitation for a C-BED project.

In exchange for the front-end loaded rate, the C-BED developer must provide security to ensure that ratepayers receive the benefit of the project over the time period of the wind energy contract. The decision to offer a C-BED contract to a developer, and the rate that's offered, is entirely a matter of negotiation between the project owners and the utility.

Table 2.
Utility C-BED
Rankings

| Utility | C-BED Projects Under Contract | C-BED Projects Under Final Negotiations | Total C-BED Projects |
|------------------|--|--|---------------------------------|
| Xcel Energy | 156.85 MW | 101.70 MW | 258.55 MW |
| CMMPA | 10 MW | 0.00 MW | 10.00 MW |
| GRE | 0 MW | 120.00 MW | 120.00 MW |
| SMMPA | 0 MW | 31.65 MW | 31.65 MW |
| Minnesota Power | 0 MW | 30.00 MW | 30.00 MW |
| MRES | 0 MW | 20.00 MW | 20.00 MW |
| Total | 166.85 MW | 303.35 MW | 470.20 MW |
| | | | |
| Otter Tail | 0.00 MW | 0.03 MW | 0.03 MW |
| Dairyland Power | 0.00 MW | 0.00 MW | 0.00 MW |
| MMPA | 0.00 MW | 0.00 MW | 0.00 MW |
| Minnkota | 0.00 MW | 0.00 MW | 0.00 MW |
| Interstate Power | 0.00 MW | 0.00 MW | 0.00 MW |
| Basin Electric | 0.00 MW | 0.00 MW | 0.00 MW |

The NextGen REO

As renewable technologies advance along with the understanding of how to integrate large percentages of renewables into the electric grid, it is clear that more can be required from Minnesota's electric utilities. It is time to raise the bar, but as we do so, it is critical that the benefits of the structure of the current REO as discussed above – optimal balance of firmness and flexibility, with a specific focus on cost and reliability to Minnesota consumers – do not get lost. In his Next Generation Energy Initiative, Governor Pawlenty proposed the creation of the Next Generation REO, building on the success of the current program. Specifically, the NextGen REO would:

- Expand the REO so that 25 percent of the electricity provided to Minnesota consumers would come from REO-eligible resources by 2025 (up from the current 10 percent by 2015).

At 25 percent by 2025, the Minnesota NextGen REO would be the most aggressive renewable electricity program in the nation.⁸ How hydropower resources are counted toward the NextGen REO will be important issue. Under the current REO, only small hydro projects under 60 MW in capacity, are counted. Under a vastly expanded REO, it might be useful to consider whether it is appropriate to continue to exclude larger hydro projects. Including more hydropower will tend to reduce the overall cost of the expanded REO, but with the trade-off that fewer new renewable resources will be developed as a result. A possible resolution could be to maintain the current set of REO-eligible resources as a general rule, but allow larger hydropower resources to count toward an REO utility's obligation if the Minnesota Public Utilities Commission finds that to be necessary to mitigate significant adverse impacts to the utility's ratepayers.

- Impose a financial penalty of \$50 per megawatt-hour on an REO utility that fails to make the required good faith effort.

As noted above, the Pawlenty Administration has worked over the past four years to add teeth to the current REO, with specific oversight requirements and regulatory consequences for failure to comply. As the renewable energy targets get larger, the consequences of greenhouse gas emissions in the global atmosphere become clearer, and the benefits to the state's economy of renewable development more significant, it will be even more important to hold utilities accountable to the NexGen REO. As a result, Governor Pawlenty is proposing to impose a significant penalty for failure to make the required good faith effort. Under the proposal, the penalty would be \$50 for each megawatt-hour of renewable energy the noncompliant REO utility fails to have in its supply portfolio toward the applicable REO target. This penalty should provide adequate motivation for utilities to seek compliance, and is similar in size and scope to the penalty imposed under Texas' renewable requirement.

⁸ See "An Inventory of State Renewable Energy Standards," Bob Eleff, Minnesota House of Representatives Research Department (rev. Nov.2006).

- Give a REO utility the option to pay into a state fund for renewable energy development in the state, rather than add new resources to the utility's system, if that option makes better economic sense for the utility and its ratepayers

This kind of compliance payment is authorized in the renewable energy programs in a number of states nationally (Delaware, Maryland, Massachusetts, New Jersey, Pennsylvania, Rhode Island and Vermont)⁹. Initially, the MPUC would be required to set an interim value for the compliance payment, but ultimately the price would be set by the Midwest regional market for renewable energy credits (discussed below).

- Contain one or more explicit mechanisms to promote the development of locally-owned renewable resources.

A few ideas in this regard might be to:

- ◇ Give community-based energy projects (C-BED) a multiplier so that each kilowatt-hour generated by a C-BED project counts as 1.2 kilowatt-hours toward their expanded REO.
- ◇ Make the cost of grid upgrades for C-BED projects a utility obligation.
- ◇ Require utilities to manage their portfolio additions for the NextGen REO in such a way so that at least 25 percent of the revenues from these additions (in the aggregate, not 25 percent of each project) flow through to Minnesota community investors.
- ◇ Specify a total megawatt allocation for C-BED projects (similar to Governor Pawlenty's 800 MW goal by 2010).
- ◇ Require an independent engineering study of the capacity of the low-voltage grid for dispersed C-BED projects, and design a process to interconnect to that grid.

Depending on how the question of hydropower is resolved, this NextGen REO could result in the development of over 4,500 MW of wind to serve Minnesotans – well over five times the current amount installed in Minnesota (813 MW). The expanded REO would also provide opportunities for other types of renewable resources, such as solar, biomass, methane digesters and landfill gas projects. It is also very important to continue to encourage utility investment in transmission infrastructure, so that this renewable energy can be delivered to where it can be used.

⁹ Ibid.

Other Key Issues

Midwest Renewable Energy Tracking System (MRETS)

Minnesota's participation in a regional renewable energy tracking system was authorized by legislation signed by Governor Pawlenty in 2003. Following passage of that legislation, the Izaak Walton League of America, the Center for Resource Solutions and the combined participants in the Great Plains Institute's Powering the Plains initiative pulled electric utilities, renewable energy advocates, and state regulators together to develop a tracking system for Minnesota, Iowa, North Dakota, South Dakota, Wisconsin, and the province of Manitoba. As described by the Izaak Walton League, MRETS "will allow market participants to trade credits representing specified amounts of renewable energy. This will help keep the costs of producing renewable energy down by encouraging production at the best locations."¹⁰ Once operational (target date is currently July of 2007) and the MPUC approves, Minnesota's REO utilities will be able to purchase renewable energy credits from MRETS to satisfy their renewable obligations.

Wind Integration Study

In December 2006, the Minnesota Public Utilities Commission's Reliability Administrator (Ken Wolf) issued a wind integration study ordered by legislation signed by Governor Pawlenty in 2005. The independent engineering study, which was funded by the ratepayers of the REO utilities, sought to quantify the cost and reliability impacts of significant amounts of wind energy on the Minnesota electric grid, and to develop options for managing the intermittent nature of wind energy on the grid. With the help of EnerNex Corporation, an electric power engineering and consulting firm selected through a competitive bid process, and WindLogics, a nationally recognized wind assessment and forecasting firm located in St. Paul, Minnesota, Mr. Wolf and his advisor, Matt Schuerger, assembled a technical review team of national experts, the Midwest Independent Transmission System Operator (MISO), utility engineers, and wind energy advocates.

The technical review team looked at wind energy penetration levels of 15 percent, 20 percent and 25 percent of Minnesota's electricity demands in 2020. The study assumed that all of the transmission infrastructure planned for construction by MISO during this period would be constructed in the Upper Midwest, that the capacity of the MISO footprint was useable to support wind generation variability, and that nearly all of the wind energy capacity installed to meet the wind energy penetration levels would be located in Minnesota.

Key conclusions from the wind integration study are as follows (redacted from the final report¹¹):

The analytical results from this study show that the addition of wind generation to supply 20% of Minnesota retail electric energy sales can be reliably accommodated by the electric power system if sufficient transmission investments are made to support it. The

¹⁰ See the Izaak Walton League of America's website at <http://www.iwla.org/index.php?id=16>.

¹¹ http://www.puc.state.mn.us/docs/windrpt_vol%201.pdf

degree of the operational impacts was somewhat less than expected by those who have participated in integration studies over the past several years for utilities around the country. The technical and economic impacts calculated are in the range of those derived from other analyses for smaller penetrations of wind generation.

These results show that, relative to the same amount of energy stripped of variability and uncertainty of the wind generation, there is a cost paid by the load that ranges from a low of \$2.11 (for 15% wind generation, based on year 2003) to a high of \$4.41 (for 25% wind generation, based on year 2005) per MWH of wind energy delivered to the Minnesota companies. This is a total cost and includes the cost of the additional reserves (per the assumptions) and costs related to the variability and day-ahead forecast error for wind generation.

The transmission expansion as described in the assumptions and detailed in Appendix A combined with the decision to inject wind generation at high voltage buses was adequate for transportation of wind energy in all of the scenarios. Under these assumptions, there were no significant congestion issues attributable to wind generation and no periods of negative Locational Marginal Price (LMP) observed in the hourly simulations.

The MISO energy market also played a large role in reducing wind generation integration costs. Since all generating resources over the market footprint are committed and dispatched in an optimal fashion, the size of the effective system into which the wind generation for the study is integrated grows to almost 1200 individual generating units. The aggregate flexibility of the units on line during any hour is adequate for compensating most of the changes in wind generation. The magnitude of this impact can be gauged by comparing results from recent integration studies for smaller systems. In the 2004 study for Xcel Energy, for example, integration costs were determined to be no higher than \$4.60/MWH for a wind generation penetration by capacity of 15%, which would be closer to 10% penetration on an energy basis.

C-BED Transmission

One of the primary barriers to further expansion and development of community energy in Minnesota is the difficulty of interconnecting C-BED projects to the electric grid, especially in the areas of the state with the best wind resource. At the urging of the Department of Commerce, several utilities known collectively as the CapX 2020 utilities (Great River Energy, Minnesota Power, Missouri River Energy Services, Otter Tail Power Company, Southern Minnesota

Municipal Power Agency, and Xcel Energy) began to work with C-BED.org, an organization founded by Dan Juhl, George Crocker, Mark Willers, Jack Keers and Garwin McNeilus to promote the development of community wind projects in Minnesota, to undertake an initial study of what transmission upgrades might be necessary to implement C-BED projects in the West Central Transmission Planning Zone. The West Central Zone consists of 17 counties and extends from the St. Cloud area to the South Dakota border.

Final conclusions from this initial study are not yet available, but preliminary indications are very positive. The study participants are proposing to develop planning and study procedures for the rest of the state.

Transmission Availability

As noted above, interconnection to the transmission system is one of the primary potential barriers to further renewable energy expansion in the state. One of the key assumptions of the Wind Integration Study summarized previously was that all of the transmission infrastructure planned for the period between now and 2020 was constructed, eliminating transmission congestion as a barrier to wind energy development.

Much of that transmission infrastructure is planned by the aforementioned CapX 2020 utilities. As summarized by these utilities:

CapX 2020 represents an effort to ensure the electricity reliability of Minnesota and the region for the future. It started as an effort by the state's largest transmission owners – including cooperatives, municipals and investor-owned utilities – to assess the system and projected growth in customer demand for electricity through 2020. Studies show that Minnesota's transmission backbone will require major upgrades and expansion to accommodate increased electricity use expected in the state and region through 2020.

Project Group I

Project Group I includes approximately 600 miles of 345-kilovolt lines, connecting Minnesota with North Dakota, South Dakota and Wisconsin and a smaller 230-kilovolt line in the Bemidji area. These projects are estimated to cost approximately \$1.3 billion.

| Year | Description |
|------|---|
| 2011 | <u>CapX Bemidji-Grand Rapids/ 230 kV</u> |
| 2011 | <u>CapX Southeast Twin Cities-Rochester-La Crosse / 345kV</u> |
| 2012 | <u>CapX Brookings, S.D.-Southeast Twin Cities / 345 kV</u> |
| 2012 | <u>CapX Fargo-St. Cloud/Monticello Area / 345kV</u> |

In addition to these transmission projects, Xcel Energy is currently engaged in:

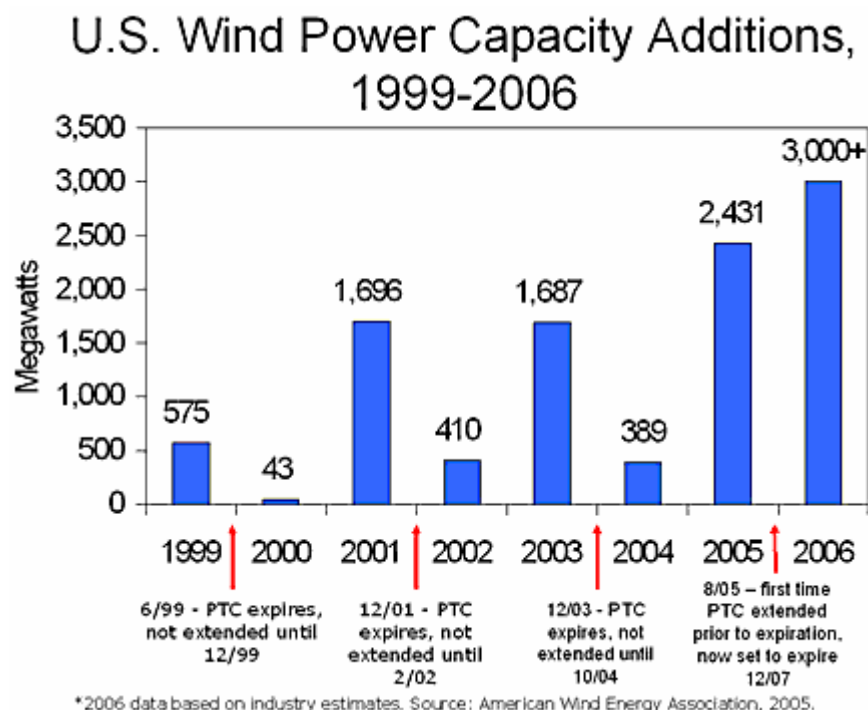
- constructing the Southwest Minnesota Transmission Project, a series of transmission lines to accommodate over 800 megawatts of wind energy from the Buffalo Ridge (the location of Minnesota's best wind resource) to the Twin Cities; and
- obtaining regulatory approvals for the Buffalo Ridge Incremental Generation Outlet (BRIGO) project, which are transmission lines to serve another 350 megawatts of wind energy on the Buffalo Ridge.

Federal Production Tax Credit Stability

The federal production tax credit (PTC) provides a tax benefit against certain kinds of passive income, equal to 1.9 cents per kilowatt-hour generated by wind, solar, geothermal, and "closed-loop" biomass facilities for 10 years. Other technologies, such as "open-loop" biomass, incremental hydropower, landfill gas, and municipal solid waste (MSW), receive a lesser value tax credit.

The PTC is critical to continued development of renewable energy in Minnesota and the rest of the nation, but there are a number of issues associated with the tax benefit.

- The tax credit can only be used to offset passive investment income, and the credit is not sharable or transferable. These restrictions significantly limit the range of investors that can benefit from the credit, and require community energy projects to search far and wide for investors interested in renewable energy projects and that have the requisite tax appetite.
- The tax credit must be re-authorized periodically by the U.S. Congress. Congress has never extended the credit for more than two years, and more than once has failed to extend the credit prior to its expiration. This boom and bust cycle has had a tremendous limiting impact on renewable energy development, as can be seen in the following graph from the American Wind Energy Association. The PTC was set to expire on December 31, 2007, but one of the last acts of the previous Congress was to extend the PTC until December 31, 2008.



Wind Turbine Availability

The boom and bust cycle of the federal PTC had the dual effects of limiting the amount of wind turbines produced by manufacturing firms, and of creating a “gold-rush” effect on the limited supply of turbines. As a result, many community energy projects were unable to access wind turbines for their proposed projects, and those that found turbines were subject to much higher prices than previously expected. These factors needlessly increased the cost of wind development. The fact that Congress acted in advance to extend the PTC until December 2008, and that states like Minnesota are pushing hard to increase the amount of wind energy installed on their systems should encourage turbine manufacturers to ramp up turbine production. A long term extension of the PTC (five to 10 years) would do wonders for renewable energy development nationally, and in Minnesota.

Utility Compliance With the REO

This section of the report will provide a summary table for each of the REO utilities' compliance with the REO and reports on each utility's actions to meet Governor Pawlenty's 800 MW C-BED goal.

- Xcel Energy (Northern States Power)
- Minnesota Power (Allete)
- Otter Tail Power
- Interstate Power & Light (Alliant)
- Northwestern Wisconsin Electric Company
- Great River Energy
- Minnkota Power Cooperative, combined with
 - ◊ Northern Minnesota Municipal Power Agency (NMPA)
- Dairyland Power Cooperative
- Basin Electric Power Cooperative, combined with
 - ◊ East River Electric Power Cooperative
 - ◊ L&O Power Cooperative
- Southern Minnesota Municipal Power Agency (SMMPA)
- Missouri River Energy Services (MRES)
- Minnesota Municipal Power Agency (MMPA)
- Central Minnesota Municipal Power Agency (CMMPA)

Xcel Energy

Xcel is the largest electric utility in Minnesota serving large portions of Southern Minnesota including the Twin Cities, Rochester and St. Cloud. As the result of legislative compromises regarding the storage of spent nuclear fuel at Xcel's two nuclear generation facilities, Xcel's REO is a requirement subject to least cost planning principles" rather than a good faith effort requirement, and is also subject to a separate renewable mandate of 825 MW of wind and 110 MW of biomass. Resources to meet this separate mandate do not count toward Xcel's REO requirement.

In its July 29, 2006 Order in Docket No. E002/RP-04-1752, the MPUC found Xcel in compliance with its REO obligations, and on track to meet its 10% obligation by 2015.

| Vintage | Type | Capacity | REO Generation as a % of Total Retail Sales |
|-----------------------------------|----------------|---------------------------|---|
| Pre 2001 | | | |
| | Wind | 0 MW | 0 % |
| | Biomass | 20 MW | 0.15 % |
| | Solar | 0 MW | 0 % |
| | Hydro | 30.43 MW | 0.40 % |
| Post 2001 | | | |
| | C-BED Wind | 0 MW | 0 % |
| | Non-C-BED Wind | 51.7 MW | 0.26 % |
| | Biomass | 69.9 MW | 0.64 % |
| | Solar | 0 MW | 0 % |
| | Hydro | 263.9 MW | 1.66 % |
| Total (2006 Goal is 2%) | | | 3.11 % |
| Planned resources | | | |
| (date if known) | C-BED Wind | 156.85 MW (2007) | |
| | Non-C-BED Wind | 101.7 MW (yr-end 2006-07) | |
| | Biomass | 85 MW (yr-end 2006-07) | |
| | Solar | 0 MW | |
| | Hydro | 0 MW | |

Minnesota Power

Minnesota Power serves approximately 137,000 customers in Northeastern Minnesota, including Duluth. In its May 19, 2006 Order in Docket No. E015/RP-04-865, the MPUC found Minnesota Power to be in compliance with its REO obligations, and on track through 2010 or 2011 depending on the allocation method used for pre-2001 resources.

| Vintage | Type | Capacity | REO Generation as a % of Total Retail Sales |
|---|----------------|-----------------------------------|---|
| Pre 2001 | Wind | 0 MW | 0 % |
| | Biomass | 106.50 MW | 1.37 % |
| | Solar | 0 MW | |
| | Hydro | 49.45 MW | 2.80 % |
| Post 2001 | C-BED Wind | 0 MW | 0 % |
| | Non-C-BED Wind | 0 MW | |
| | Biomass | 27.60 MW | 0.33 % |
| | Solar | 0 MW | 0 % |
| | Hydro | 0 MW | 0 % |
| Total (2006 Goal is 2%) | | | 4.50% |
| Planned resources (date if known) | C-BED Wind | 30 MW (2007-08) | |
| | Non-C-BED Wind | 50.6 MW (operating 12/2006) | |
| | | 48 MW (2007) | |
| | | 25-35 MW (2008) | |
| | Biomass | 0 MW | |
| | Solar | 0 MW | |
| | Hydro | 9.2 MW(2010) | |

Otter Tail Power Company

Headquartered in Fergus Falls, Minnesota, the Company serves customers in Western Minnesota, North Dakota and South Dakota. Otter Tail's electric sales to Minnesota customers represent approximately 52 percent of its total company retail sales.

In its August 9, 2006 Order in Docket No. E017/RP-05-968, the MPUC found Otter Tail Power to be in compliance with its REO obligations for 2005 and 2006, and on track to meet its obligations through 2008.

| Vintage | Type | Capacity | REO Generation as a % of Total Retail Sales |
|---|----------------|-----------------|--|
| Pre 2001 | Wind | 0 MW | 0 % |
| | Biomass | 6.25 MW | 0.80 % |
| | Solar | 0 MW | 0 % |
| | Hydro | 4.19 MW | 0.55 % |
| Post 2001 | C-BED Wind | 0 MW | 0 % |
| | Non-C-BED Wind | 23.55 MW | 3.70 % |
| | Biomass | 0 MW | 0 % |
| | Solar | 0 MW | 0 % |
| | Hydro | 0 MW | 0 % |
| Total (2006 Goal is 2%) | | | 5.05% |
| Planned resources (date if known) | C-BED Wind | 35 kW (2006) | |
| | Non-C-BED Wind | 1.66 MW | |
| | Biomass | 2 MW (2009) | |
| | Solar | 0 MW | |
| | Hydro | 0 MW | |

Interstate Power & Light

Interstate Power & Light is a subsidiary of Alliant Energy, and provides service to 55,000 customers in southern Minnesota. Its REO compliance is currently being reviewed in a proceeding at the MPUC.

| Vintage | Type | Capacity | REO Generation as a % of Total Retail Sales |
|---|----------------|----------|---|
| Pre 2001 | Wind | 0 MW | 0 % |
| | Biomass | 0.24 MW | 0.09 % |
| | Solar | 0 MW | 0 % |
| | Hydro | 0 MW | 0 % |
| Post 2001 | C-BED Wind | 0 MW | 0 % |
| | Non-C-BED Wind | 28.9 MW | 5.48 % |
| | Biomass | 0.12 MW | 0.04 % |
| | Solar | 0 MW | 0 % |
| | Hydro | 0 MW | 0 % |
| Total (2006 Goal is 2%) | | | 5.61% |
| Planned resources (date if known) | C-BED Wind | 0 MW | |
| | Non-C-BED Wind | 0 MW | |
| | Biomass | 0 MW | |
| | Solar | 0 MW | |
| | Hydro | 0 MW | |

Northwestern Wisconsin Electric Company

Northwestern Wisconsin Electric Company is an investor owned electric utility which serves approximately 11,500 retail customers in Burnett and Polk counties of Wisconsin as well as a small number of customers in Pine County, Minnesota.

Its REO compliance has not yet been reviewed by the MPUC.

| Vintage | Type | Capacity | REO Generation as a % of Total Retail Sales |
|---|----------------|-----------------|--|
| Pre 2001 | Wind | 0 MW | 0 % |
| | Biomass | 0 MW | 0 % |
| | Solar | 0 MW | 0 % |
| | Hydro | 2.28 MW | 4.48 % |
| Post 2001 | C-BED Wind | 0 MW | 0 % |
| | Non-C-BED Wind | 0 MW | 0 % |
| | Biomass | 0 MW | 0 % |
| | Solar | 0 MW | 0 % |
| | Hydro | 0 MW | 0 % |
| Total (2006 Goal is 2%) | | | 4.48% |
| Planned resources (date if known) | C-BED Wind | 0 MW | |
| | Non-C-BED Wind | 0 MW | |
| | Biomass | 0 MW | |
| | Solar | 0 MW | |
| | Hydro | 0 MW | |

Great River Energy (GRE)

GRE is a generation and transmission cooperative serving 28 distribution cooperatives in Minnesota and Wisconsin which in turn serve approximately 600,000 customers.

In its August 4, 2006 Order in Docket No. ET2/RP-05-1100, the MPUC found Great River Energy to be in compliance with its REO obligations in 2005 and 2006, and on track to meet its 10% obligation by 2015.

| Vintage | Type | Capacity | REO Generation as a % of Total Retail Sales |
|---|----------------|---|--|
| Pre 2001 | Wind | 0 MW | 0 % |
| | Biomass | 33.4 MW | 1.52 % |
| | Solar | 0 MW | 0 % |
| | Hydro | 0 MW | 0 % |
| Post 2001 | C-BED Wind | 0 MW | 0 % |
| | Non-C-BED Wind | 105.7 MW | 2.24 % |
| | Biomass | 3.2 MW | 0.17 % |
| | Solar | 0 MW | 0 % |
| | Hydro | 0 MW | 0 % |
| Total (2006 Goal is 2%) | | | 3.93% |
| Planned resources (date if known) | C-BED Wind | 120 MW (2008) final negotiations | |
| | Non-C-BED Wind | 100 MW (2008) 100 MW/year (2010-2015) | |
| | Biomass | 15 MW(2008) | |
| | Solar | 0 MW | |
| | Hydro | 0 MW | |
| | | | |

**Minnkota Power Cooperative/
Northern Municipal Power Agency (NMPA)**

Minnkota Power Cooperative is a G & T cooperative in northwest Minnesota that is owned and provides power to the following Minnesota distribution cooperatives: Beltrami Electric, Cass County Electric, Clearwater Polk Electric, PKM Electric, Red Lake Electric, Red River Electric, Wild Rice Electric and Beltrami Electric. Minnkota is also the operating agent for Northern Municipal Power Agency of Thief River Falls which serves 12 municipalities in northern Minnesota.

Its REO compliance is currently under review by the MPUC.

| Vintage | Type | Capacity | REO Generation as a % of Total Retail Sales |
|---|----------------|-----------------|--|
| Pre 2001 | Wind | 0 MW | 0 % |
| | Biomass | 0 MW | 0 % |
| | Solar | 0 MW | 0 % |
| | Hydro | 0 MW | 0 % |
| Post 2001 | C-BED Wind | 0 MW | 0 % |
| | Non-C-BED Wind | 0 MW | 0 % |
| | Biomass | 6.25 MW | 2.14 % |
| | Solar | 0 MW | 0 % |
| | Hydro | 0 MW | 0 % |
| Total | | | 2.14% |
| (2006 Goal is 2%) | | | |
| Planned resources (date if known) | C-BED Wind | 0 MW | |
| | Non-C-BED Wind | 100 MW (2008) | |
| | Biomass | 0 MW | |
| | Solar | 0 MW | |
| | Hydro | 0 MW | |

Dairyland Power Cooperative

Headquartered in La Crosse, Wisconsin, Dairyland serves communities in 62 counties in four states, Wisconsin, Minnesota, Iowa and Illinois. In Minnesota its member cooperatives include the People's Cooperative of Rochester, the Freeborn-Mower Cooperative and the Tri-County Electric Cooperative in Rushford. Minnesota sales account for 17 percent of its total system sales.

In its April 14, 2006 Order in Docket No. ET3/RP-05-184, the MPUC found Dairyland to be in compliance with REO.

| Vintage | Type | Capacity | REO Generation as a % of Total Retail Sales |
|---|----------------|-----------------|--|
| Pre 2001 | Wind | 0.66 MW | 0.05 % |
| | Biomass | 0 MW | 0 % |
| | Solar | 0 MW | 0 % |
| | Hydro | 0 MW | 0 % |
| Post 2001 | C-BED Wind | 0 MW | 0 % |
| | Non-C-BED Wind | 17.85 MW | 2.75 % |
| | Biomass | 13.4 MW | 1.04 % |
| | Solar | 0 MW | 0 % |
| | Hydro | 0 MW | 0 % |
| Total (2006 Goal is 2%) | | | 3.84% |
| Planned resources (date if known) | C-BED Wind | 0 MW | |
| | Non-C-BED Wind | 11 MW (2007) | |
| | Biomass | 9.9 MW (2007) | |
| | | 4 MW (2008) | |
| | Solar | 0 MW | |
| | Hydro | 0 MW | |

**Basin Electric Cooperative
East River Electric Power Cooperative
L&O Power Cooperative**

Basin Electric Power Cooperative (Basin Electric) is one of the largest electric generation and transmission (G&T) cooperatives in the United States. Basin Electric has 120 member systems that distribute electricity to 2.5 million consumers in nine states. Basin supplies power to the:

- East River Electric Power Cooperative, which provides power supply to distribution cooperatives in 41 counties in eastern South Dakota and nine counties in western Minnesota; and
- L&O Power Cooperative, which provides power supply to distribution cooperatives in Lyon and Osceola Counties in northwest Iowa, and Rock and Pipestone counties in southwest Minnesota.

The REO compliance of these utilities has not yet been reviewed by the MPUC.

| Vintage | Type | Capacity | REO Generation as a % of Total Retail Sales |
|---|----------------|-----------------|--|
| Pre 2001 | Wind | 0 MW | 0.0% |
| | Biomass | 0 MW | 0.0% |
| | Solar | 0 MW | 0.0% |
| | Hydro | 0 MW | 0.0% |
| Post 2001 | C-BED Wind | 0 MW | 0.0% |
| | Non-C-BED Wind | 88.7 MW | 1.0% |
| | Biomass | 0 MW | 0.0% |
| | Solar | 0 MW | 0.0% |
| | Hydro | 0 MW | 0.0% |
| Total (2006 Goal is 2%) | | | 1.0%* |
| Planned resources (date if known) | C-BED Wind | 0 MW | |
| | Non-C-BED Wind | 0 MW | |
| | Biomass | 0 MW | |
| | Solar | 0 MW | |
| | Hydro | 0 MW | |

* According to Basin, the one percent reflects its generation for 2005, and the company intends to meet its 2% REO obligation.

Southern Minnesota Municipal Power Agency (SMMPA)

SMMPA generates and sells electricity at wholesale to its member/customers, eighteen municipal utilities located mostly in south central and southeastern Minnesota serving 92,000 retail customers.

SMMPA's REO compliance is currently being reviewed in a proceeding at the MPUC.

| Vintage | Type | Capacity | REO Generation as a % of Total Retail Sales |
|---|--------------------|-----------------|---|
| Pre 2001 | Wind | 0 MW | 0 % |
| | Biomass | 118 MW | 0.003% |
| | Solar | MW | 0 % |
| | Hydro | 0.35 MW | 0.05 % |
| Post 2001 | C-BED Wind | 0 MW | 0 % |
| | Non-C-BED Wind | 6.6 MW | 0.65% |
| | Biomass | 0 MW | 0 % |
| | Solar | 0 MW | 0 % |
| | Hydro | 0 MW | 0 % |
| Total (2006 Goal is 2%) | | | 0.703% |
| Planned resources (date if known) | C-BED Wind | 31.65 MW (2008) | |
| | Non-C-BED Wind | 2.5 MW (2008) | |
| | | 15.0 MW (2009) | |
| | | 27.5 MW(2010) | |
| | Biomass | 5 MW | |
| | Solar | 0 MW | |
| | Hydro | 0 MW | |
| | Wind-Credits ** | | 2.68% |
| | Biomass-Credits ** | | 0.01% |

** SMMPA has purchased wind and biomass credits as an effort to meet the good faith effort requirement, even though credits do not yet count toward REO compliance.

**Missouri River Energy Services
Western Minnesota Municipal Power Agency (Western Minn.)**

MRES has 60 member communities in Iowa, Minnesota, North Dakota and South Dakota. In Minnesota, the Company serves the communities of Alexandria, Detroit Lakes, Hutchinson, Jackson, Marshall, Worthington and Wadena, among others. Minnesota retail sales represent approximately 52 percent of its total system retail sales.

In its November 16, 2006 Order in Docket No. ET10/RP-05-1102, the MN PUC found MRES to be in compliance with its REO obligations, having made the required good faith effort even though the utility fell short of the REO target for 2006.

| Vintage | Type | Capacity | REO Generation as a % of Total Retail Sales |
|---|----------------|-----------------|--|
| Pre 2001 | Wind | 0 MW | 0% |
| | Biomass | 0 MW | 0% |
| | Solar | 0 MW | 0% |
| | Hydro | 0 MW | 0% |
| Post 2001 | C-BED Wind | 0 MW | 0 % |
| | Non-C-BED Wind | 2.9 MW | 1.01% |
| | Biomass | MW | 0.02% |
| | Solar | 0 MW | 0 % |
| | Hydro | 0 MW | 0 % |
| Total | | | 1.03% |
| (2006 Goal is 2%) | | | |
| Planned resources (date if known) | C-BED Wind | 20 MW (2007) | |
| | Non-C-BED Wind | 20 MW (2008) | |
| | Biomass | 0 MW | |
| | Solar | 0 MW | |
| | Hydro | 0 MW | |

Minnesota Municipal Power Agency (MMPA)

The Minnesota Municipal Power Agency (MMPA) was founded in 1992 and became operational in 1995. It is composed of the cities of Anoka, Arlington, Brownton, Buffalo, Chaska, East Grand Forks, Le Sueur, North St. Paul, Olivia, Shakopee, and Winthrop.

Its REO compliance has not yet been reviewed by the MPUC.

| Vintage | Type | Capacity | REO Generation as a % of Total Retail Sales |
|---|----------------|--------------|---|
| Pre 2001 | Wind | 0 MW | 0 % |
| | Biomass | 0 MW | 0 % |
| | Solar | 0 MW | 0 % |
| | Hydro | 0 MW | 0 % |
| Post 2001 | C-BED Wind | 0 MW | 0 % |
| | Non-C-BED Wind | 0 MW | 0.04 % |
| | Biomass | 0 MW | 0 % |
| | Solar | 0 MW | 0 % |
| | Hydro | 0 MW | 0 % |
| Total (2006 Goal is 2%) | | | 0.04% |
| Planned resources (date if known) | C-BED Wind | 0 MW | |
| | Non-C-BED Wind | 65 MW (2008) | |
| | | 50 MW (2009) | |
| | Biomass | 20 MW (2007) | |
| | Solar | 0 MW | |
| | Hydro | 0 MW | |

Central Minnesota Municipal Power Agency (CMMPA)

Central Minnesota Municipal Power Agency is made up of fifteen municipalities from across central Minnesota, including Blue Earth, Delano, Fairfax, Glencoe, Granite Falls, Janesville, Kasson, Kenyon, Mountain Lake, Sleepy Eye, Springfield, and Windom.

Its REO compliance has not yet been reviewed by the MPUC.

| Vintage | Type | Capacity | REO Generation as a % of Total Retail Sales |
|-----------------------------------|----------------|---------------|---|
| Pre 2001 | Wind | 0 MW | 0 % |
| | Biomass | 0 MW | 0 % |
| | Solar | 0 MW | 0 % |
| | Hydro | 0 MW | 0 % |
| Post 2001 | C-BED Wind | 00 MW | 0 % |
| | Non-C-BED Wind | 14.57 MW | 3.45 % |
| | Biomass | 0 MW | 0 % |
| | Solar | 0 MW | 0 % |
| | Hydro | 0 MW | 0 % |
| Total (2006 Goal is 2%) | | | 3.45% |
| Planned resources | C-BED Wind | 10 MW | |
| (date if known) | Non-C-BED Wind | 1.25 MW(2007) | |
| | Biomass | 2.5 MW(2007) | |
| | Solar | 0 MW | |
| | Hydro | 0 MW | |

The Next Generation Energy Initiative

Developing Minnesota's renewable energy resources is of primary importance to the Pawlenty Administration. Minnesota is a national leader on renewable energy, in many important respects, including:

- Greatest per-capita biofuels use in the country
- Fourth in the nation for installed wind energy capacity
- First in the nation for locally-owned wind projects
- First in the nation for E85 fuel availability
- Implemented the first ethanol and biodiesel blending requirements in the nation

Governor Pawlenty was one of the first Governors to endorse the National 25x'25 Initiative, to have 25 percent of the energy America uses come from renewable resources by 2025 – transportation fuels, electricity sources, natural gas for heating and industrial use. As chair of Midwest Governors Association (MGA), Governor Pawlenty led the MGA to become the first regional governors association to endorse the national 25x'25. In addition, the Governor committed Minnesota to a state-level 25x'25 strategic goal in his 2006 State of the State address.

To build on that record of commitment and success, Governor Pawlenty has proposed the Next Generation Energy Initiative that will result in more renewable energy, more energy conservation, and less carbon emissions for Minnesota.

More Renewables

There are three components to the Renewable Energy section of the NextGen initiative.

- **Expand and improve the state's Renewable Energy Objective (REO)**

Under the current REO, Minnesota electric utilities are required to make a good faith effort to have at least 10 percent of the electricity they supply Minnesota consumers come from renewable resources by 2015. Governor Pawlenty proposed increasing and expanding the REO to 25 percent by 2025. In addition, he proposed to improve the REO by:

- ♦ imposing a financial penalty on utilities that fail to make that good faith effort and
- ♦ including specific mechanisms to promote local ownership of energy projects to meet the REO.

- **E85 Everywhere**

To continue Minnesota's leadership in E85, Governor Pawlenty proposed the E85 Everywhere program which would quintuple the number of E85 pumps in the state by 2010, an increase from 300 now to 1800 in four years. In addition, the Governor's

proposal will help retail station owners with grants to partially offset the cost of E85 pump installations.

- **Cellulosic ethanol and advanced biomass gasification**

The Governor committed to making financial resources available to assist and encourage the growth of Next Generation biofuels, such as cellulosic ethanol, and advanced bio-gas (gasification of biomass) technologies to offset natural gas use in the state, with a special focus on farmer ownership.

More Energy Conservation

Minnesota is a nationally-recognized leader in energy conservation. Recognizing that energy conservation saves Minnesotans real money on their energy costs, while reducing the environmental impacts of energy use, Governor Pawlenty proposed three initiatives to build on Minnesota's successful conservation and energy efficiency programs.

- **Reduce Minnesota's fossil fuel energy use**

Governor Pawlenty set an aggressive energy saving goal for Minnesotans to reduce use of fossil-fuel energy by 15 percent by 2015. The Governor said that the goal is achievable through increases in energy efficiency and renewable resources.

- **Transition the Conservation Improvement Program (CIP) from a spending requirement program to "energy saved" program**

The amount of electricity and natural gas Minnesotans save each year can be significantly increased through additional energy efficiency and conservation measures. Governor Pawlenty proposed transitioning Minnesota's utility energy conservation program from a spending program to an energy savings program, requiring utilities to reduce their retail sales by 1.5 percent annually, and increasing the accountability and transparency of utility conservation activities. These reforms should double the amount of electricity Minnesotans save and increase natural gas savings from energy conservation by 50 percent.

- **Set as a goal of 1,000 Energy Star commercial buildings in the state by 2010**

Currently, Minnesota has 87 schools, office buildings, and churches that have received the Energy Star award for energy efficiency. Governor Pawlenty proposed increasing that number to 1,000 buildings by 2010.

Less Carbon Emissions

In his announcement, Governor Pawlenty said that “our global climate is warming, at least in part due to the energy sources we use” and outlined a number of measures to begin to address greenhouse gas emissions in Minnesota.

- **Center for Climate Strategies**

Governor Pawlenty is inviting the nationally recognized Center for Climate Strategies to Minnesota to conduct a wide-ranging and inclusive stakeholder process and to develop a plan to aggressively reduce greenhouse gas emissions in Minnesota over the coming years.

- **Carbon Offsets for New Fossil-fueled Generation**

Saying that, as we try reduce greenhouse gases in Minnesota, we “should not make the situation worse while we try to make it better,” the Governor proposed requiring electric utilities to prepare for the future by offsetting carbon emissions from new fossil-fuel generation sources.

- **Climate Exchange**

Governor Pawlenty is proposing that the State of Minnesota join the Chicago Climate Exchange (CCX) or some other national registry to track and reduce greenhouse gas emissions from state operations. The CCX is a greenhouse gas (GHG) emission registry, reduction and trading system. Members of the exchange make a voluntary but legally binding commitment to reduce GHG emissions.

- **Contacting Midwestern Governors**

Minnesota can and should start reducing the greenhouse gases emitted in this state, but clearly, the more effective way to ultimately achieve significant reductions in greenhouse gas emissions is to work in cooperation with Minnesota's regional neighbors. In his NextGen announcement, Governor Pawlenty committed to working with governors in the Midwest region to develop a regional approach to increasing renewable energy use, increasing energy efficiency commitments and reducing greenhouse gas emissions in the Midwest.