Senator Murphy introduced--

S.F. No. 1784: Referred to the Committee on Jobs, Energy and Community Development.

A bill for an act

relating to taxation; property; exempting certain property of an electric generation facility; amending Minnesota Statutes 2004, section 272.02, by adding a subdivision.

BE IT ENACTED BY THE LEGISLATURE OF THE STATE OF MINNESOTA:

Section 1. Minnesota Statutes 2004, section 272.02, is amended by adding a subdivision to read:

Subd. 68. [ELECTRIC GENERATION FACILITY; PERSONAL PROPERTY.] (a) Notwithstanding subdivision 9, clause (a), attached machinery and other personal property which is part of a simple-cycle combustion-turbine electric generation facility that exceeds 290 megawatts of installed capacity and that meets the requirements of this subdivision is exempt. At the time of construction, the facility must:

(1) be designed to utilize natural gas as a primary fuel;

(2) not be owned by a public utility as defined in section 216B.02, subdivision 4;

(3) be located within 15 miles of the mainline existing interstate natural gas pipeline and within five miles of an existing electrical transmission substation;

(4) be located outside the metropolitan area as defined under section 473.121, subdivision 2; and

(5) be designed to provide peaking capacity energy and ancillary services and have satisfied all of the requirements

under section 216B.243.

(b) Construction of the facility must be commenced after January 1, 2005, and before January 1, 2009. Property eligible for this exemption does not include electric transmission lines and interconnections or gas pipelines and interconnections appurtenant to the property or the facility.

[EFFECTIVE DATE.] This section is effective for assessment year 2006, taxes payable in 2007, and thereafter.

Senate Counsel, Research, and Fiscal Analysis

G-17 STATE CAPITOL
75 REV. DR. MARTIN LUTHER KING, JR. BLVD.
ST. PAUL, MN 55155-1606
(651) 296-4791
FAX: (651) 296-7747
JO ANNE ZOFF SELLNER
DIRECTOR

Senate

State of Minnesota

S.F. No. 1263 - Wind Energy

Author: Senator Gary W. Kubly

Prepared by: Matthew S. Grosser, Senate Research (651/296-1890) MG

Date: March 18, 2005

Section 1 adds a definition of a wind energy conversion system to the renewable energy objective.

Section 2 establishes a wind energy objective, requiring each electric utility to make a good-faith effort to generate or procure enough wind generated electric energy to comprise 20 percent of the electric energy the utility provides to retail customers in Minnesota by December 31, 2020. This section requires the Public Utilities Commission to issue orders detailing the criteria to be used to measure a utility's efforts to meet the objective, and to provide a program of tradable wind energy credits to facilitate compliance with the objective.

Section 3 establishes the wind energy loan guarantee program to encourage the financing, construction, and operation of wind energy conversion systems in Minnesota. The program requires the state to guarantee up to 15 percent of the value of the amount financed up to $300,000 per wind energy conversion system located in Minnesota. This section also requires that one percent on the outstanding balance of any wind energy loan be charged annually as a loan guarantee fee paid to the state and deposited in a separate account of the special revenue fund.

MSG:cs

Senators Kubly, Anderson, Vickerman, Rosen and Senjem introduced--
S.F. No. 1263: Referred to the Committee on Jobs, Energy and Community Development.

A bill for an act

relating to energy; establishing goal of wind power usage at 20 percent by 2020; establishing wind energy conversion system loan guarantee program; amending Minnesota Statutes 2004, section 216B.1691, subdivision 1, by adding a subdivision; proposing coding for new law in Minnesota Statutes, chapter 216C.

BE IT ENACTED BY THE LEGISLATURE OF THE STATE OF MINNESOTA:

Section 1. Minnesota Statutes 2004, section 216B.1691, subdivision 1, is amended to read:

Subdivision 1. [DEFINITIONS.] (a) Unless otherwise specified in law, "eligible energy technology" means an energy technology that:

(1) generates electricity from the following renewable energy sources: solar; wind; hydroelectric with a capacity of less than 60 megawatts; hydrogen, provided that after January 1, 2010, the hydrogen must be generated from the resources listed in this clause; or biomass, which includes an energy recovery facility used to capture the heat value of mixed municipal solid waste or refuse-derived fuel from mixed municipal solid waste as a primary fuel; and

(2) was not mandated by Laws 1994, chapter 641, or by commission order issued pursuant to that chapter prior to August 1, 2001.

(b) "Electric utility" means a public utility providing electric service, a generation and transmission cooperative

electric association, or a municipal power agency.

(c) "Total retail electric sales" means the kilowatt-hours of electricity sold in a year by an electric utility to retail customers of the electric utility or to a distribution utility for distribution to the retail customers of the distribution utility.

(d) "Wind energy conversion system" (WECS) has the meaning given it in section 216C.06, subdivision 19, and also includes a qualified wind energy conversion facility defined in section 216C.41, subdivision 1, paragraph (c), and any size WECS described in section 272.029, subdivision 1, paragraph (a).

Sec. 2. Minnesota Statutes 2004, section 216B.1691, is amended by adding a subdivision to read:

Subd. 2a. [WIND ENERGY OBJECTIVE: 20 PERCENT BY 2020; CREDITS.] (a) Each electric utility shall make a good faith effort to generate or procure sufficient electricity generated by wind energy conversion system technology to provide electricity to its retail consumers, or the retail customers of a distribution utility to which the electric utility provides wholesale electric service, so that by December 31, 2020, at least 20 percent of the electric energy provided to retail customers in Minnesota is generated through wind energy conversion systems.

(b) By June 1, 2006, and as needed thereafter, the commission shall issue an order detailing the criteria and standards by which it will measure an electric utility's efforts to meet the 20 percent by 2020 wind energy objective of this subdivision to determine whether the utility is progressing and making the required good faith effort. In this order, the commission shall include criteria and standards that consider technical and delivery feasibilities and that protect against undesirable impacts on the reliability of the utility's system and unreasonable economic impacts on the utility's ratepayers.

(c) To facilitate compliance with this subdivision, the commission, by rule or order, shall establish a program for tradable credits among Minnesota electric utilities for

electricity generated through wind energy conversion systems located within Minnesota. In doing so, the commission shall implement a system that constrains or limits the cost of credits, taking care to ensure that such a system does not undermine the market for those credits. In lieu of generating or procuring energy directly to satisfy the 20 percent by 2020 objective of this subdivision, an electric utility may purchase sufficient wind energy credits, issued pursuant to this subdivision from another electric utility located in Minnesota, to meet its objective. The commission may facilitate the trading of wind energy credits only among electric utilities in Minnesota.

Sec. 3. [216C.42] [WIND ENERGY LOAN GUARANTEE PROGRAM.]

Subdivision 1. [RULES.] The commissioner of commerce, in consultation with the commissioner of finance and the Public Utilities Commission and after any necessary coordination with any related federal programs, shall adopt rules by June 1, 2006, to implement and administer a wind energy loan guarantee program to encourage the financing, construction, and operation in Minnesota of wind energy conversion systems, as defined in section 216B.1691, subdivision 1. At a minimum, the rules must:

(1) guarantee financial institutions that provide financing for a wind energy conversion system that the state will guarantee, in case of a borrower's default, up to 15 percent of the value of the amount financed not to exceed $300,000 for each system;

(2) allow the interest rate to be negotiable between the financial institution and borrower, except that one percent on the outstanding balance must be charged annually as a loan guarantee fee and paid to the state and deposited in the account established in subdivision 2;

(3) require that the financial institution making a loan guaranteed pursuant to this section must be located in Minnesota; and

(4) require that the wind energy conversion system for which financing is requested, be located in Minnesota.

The rules must further define and set forth reasonable and usual terms, conditions, eligibility requirements, responsibilities, and procedures, as desirable or necessary, for administering and for participating in this program and for allocating the property interests of the parties following default.

Subd. 2. [WIND ENERGY LOAN GUARANTEE ACCOUNT.] The wind energy loan guarantee account is established as a separate account in the special revenue fund. The account consists of the proceeds of the loan guarantee fees collected annually, any federal money that may be made available for this program, money appropriated or donated to the account, and any interest earned on investments of money in the account. Money in the account must be disbursed as the first source for payment on default of a loan made pursuant to rules adopted under subdivision 1.

[EFFECTIVE DATE.] Subdivision 1 of this section is effective the day following final enactment.

Senate Counsel, Research, and Fiscal Analysis

G-17 STATE CAPITOL
75 REV. DR. MARTIN LUTHER KING, JR. BLVD.
ST. PAUL, MN 55155-1606
(651) 296-4791
FAX: (651) 296-7747
JO ANNE ZOFF SELLNER
DIRECTOR

Senate

State of Minnesota

S.F. No. 1687 - Renewable Energy Standard

Author: Senator Ellen R. Anderson

Prepared by: Matthew S. Grosser, Senate Research (651/296-1890) MG

Date: March 18, 2005

The bill reduces the renewable energy objective in Minnesota Statutes from ten percent in 2015 to five percent in 2010, and establishes a renewable energy standard thereafter such that by 2013 each electric utility must generate ten percent of the utility's total retail electric sales from an eligible energy technology, increasing to 15 percent in 2015 and 20 percent in 2020. The bill deletes language that required Xcel Energy to meet the renewable energy objective and adds language giving the Public Utilities Commission authority to enforce compliance with the renewable energy standard contained in the bill. The bill also makes conforming changes to include the standard in the renewable energy tradable credit program and the reporting requirements to show compliance with the standards.

MSG:cs

Senators Anderson, Kubly, Metzen, Rosen and Frederickson introduced--
S.F. No. 1687: Referred to the Committee on Jobs, Energy and Community Development.

A bill for an act

relating to energy; requiring utilities to meet certain renewable energy standards; amending Minnesota Statutes 2004, section 216B.1691.

BE IT ENACTED BY THE LEGISLATURE OF THE STATE OF MINNESOTA:

Section 1. Minnesota Statutes 2004, section 216B.1691, is amended to read:

216B.1691 [RENEWABLE ENERGY STANDARDS AND OBJECTIVES.]

Subdivision 1. [DEFINITIONS.] (a) Unless otherwise specified in law, "eligible energy technology" means an energy technology that:

(1) generates electricity from the following renewable energy sources: solar; wind; hydroelectric with a capacity of less than 60 megawatts; hydrogen, provided that after January 1, 2010, the hydrogen must be generated from the resources listed in this clause; or biomass, which includes an energy recovery facility used to capture the heat value of mixed municipal solid waste or refuse-derived fuel from mixed municipal solid waste as a primary fuel; and

(2) was not mandated by Laws 1994, chapter 641, or by commission order issued pursuant to that chapter prior to August 1, 2001.

(b) "Electric utility" means a public utility providing electric service, a generation and transmission cooperative electric association, or a municipal power agency.

(c) "Total retail electric sales" means the kilowatt-hours of electricity sold in a year by an electric utility to retail customers of the electric utility or to a distribution utility for distribution to the retail customers of the distribution utility.

Subd. 2. [ELIGIBLE ENERGY OBJECTIVES.] (a) Each electric utility shall make a good faith effort to generate or procure sufficient electricity generated by an eligible energy technology to provide its retail consumers, or the retail customers of a distribution utility to which the electric utility provides wholesale electric service, so that:

(1) commencing in 2005, at least one percent of the electric utility's total retail electric sales is generated by eligible energy technologies;

(2) the amount provided under clause (1) is increased by one percent of the utility's total retail electric sales each year until ~~2015~~ 2010; and

(3) ~~ten~~ five percent of the electric energy provided to retail customers in Minnesota by 2010 is generated by eligible energy technologies.

(b) Of the eligible energy technology generation required under paragraph (a), clauses (1) and (2), not less than 0.5 percent of the energy must be generated by biomass energy technologies, including an energy recovery facility used to capture the heat value of mixed municipal solid waste or refuse-derived fuel from mixed municipal solid waste as a primary fuel, by 2005. By 2010, one percent of the eligible technology generation required under paragraph (a), clauses (1) and (2), shall be generated by biomass energy technologies. An energy recovery facility used to capture the heat value of mixed municipal solid waste or refuse-derived fuel from mixed municipal solid waste, with a power sales agreement in effect as of May 29, 2003, that terminates after December 31, 2010, does not qualify as an eligible energy technology unless the agreement provides for rate adjustment in the event the facility qualifies as a renewable energy source.

Subd. 2a. [ELIGIBLE ENERGY STANDARD.] Each electric utility shall generate or procure sufficient electricity generated by an eligible energy technology to provide its retail customers, or the retail customers of a distribution utility to which the electric utility provides wholesale electric service, so that at least the following percentages of the electric utility's total retail electric sales is generated by eligible energy technologies by the end of the year indicated:

(1) 2013 ten percent

(2) 2015 15 percent

(3) 2020 20 percent

To be counted toward satisfying the standard, energy must be generated by a facility originally placed in service after January 1, 1975. The commission may delay or modify the standard for an electric utility if it finds that compliance with a standard will jeopardize the reliability of the electric system in a way not consistent with the public interest when weighing the benefits of renewable energy. The standard is both an individual electric utility standard and a statewide standard so that by the end of 2020 at least 20 percent of the electric energy provided to retail customers in Minnesota is generated by eligible energy technologies.

~~(c)~~ Subd. 2b. [COMMISSION ORDER.] By June 1, 2004, and as needed thereafter, the commission shall issue an order detailing the criteria and standards by which it will measure an electric utility's efforts to meet the renewable energy objectives and standards of this section to determine whether the utility is making the required good faith effort and is meeting the standards. In this order, the commission shall include criteria and standards that protect against undesirable impacts on the reliability of the utility's system and economic impacts on the utility's ratepayers and that consider technical feasibility.

~~(d) In its order under paragraph (c), the commission shall provide for a weighted scale of how energy produced by various eligible energy technologies shall count toward a utility's objective. In establishing this scale, the commission shall~~

~~consider the attributes of various technologies and fuels, and shall establish a system that grants multiple credits toward the objectives for those technologies and fuels the commission determines is in the public interest to encourage.~~

Subd. 3. [UTILITY PLANS FILED WITH COMMISSION.] (a) Each electric utility shall report on its plans, activities, and progress with regard to these objectives and standards in its filings under section 216B.2422 or in a separate report submitted to the commission every two years, whichever is more frequent, demonstrating to the commission ~~that~~ the ~~utility is making the required good faith~~ utility's effort to comply with this section. In its resource plan or a separate report, each electric utility shall provide a description of:

(1) the status of the utility's renewable energy mix relative to the ~~good faith~~ objective and standards;

(2) efforts taken to meet the objective and standards;

(3) any obstacles encountered or anticipated in meeting the objective or standards; and

(4) potential solutions to the obstacles.

(b) The commissioner shall compile the information provided to the commission under paragraph (a), and 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.

Subd. 4. [RENEWABLE ENERGY CREDITS.] (a) To facilitate compliance with this section, the commission, by rule or order, may establish a program for tradable credits for electricity generated by an eligible energy technology. In doing so, the commission shall implement a system that constrains or limits the cost of credits, taking care to ensure that such a system does not undermine the market for those credits.

(b) In lieu of generating or procuring energy directly to satisfy the renewable energy objective and standard of this

section, an electric utility may purchase sufficient renewable energy credits, issued pursuant to this subdivision, to meet its objective and standard.

(c) Upon the passage of a renewable energy standard, portfolio, or objective in a bordering state that includes a similar definition of eligible energy technology or renewable energy, the commission may facilitate the trading of renewable energy credits between states.

Subd. 5. [TECHNOLOGY BASED ON FUEL COMBUSTION.] (a) Electricity produced by fuel combustion may only count toward a utility's objectives or standards if the generation facility:

(1) was constructed in compliance with new source performance standards promulgated under the federal Clean Air Act for a generation facility of that type; or

(2) employs the maximum achievable or best available control technology available for a generation facility of that type.

(b) An eligible energy technology may blend or co-fire a fuel listed in subdivision 1, paragraph (a), clause (1), with other fuels in the generation facility, but only the percentage of electricity that is attributable to a fuel listed in that clause can be counted toward an electric utility's renewable energy objectives.

Subd. 6. [ELECTRIC UTILITY THAT OWNS NUCLEAR GENERATION FACILITY.] (a) An electric utility that owns a nuclear generation facility, as part of its good faith effort under this subdivision and subdivision 2, shall deploy an additional 300 megawatts of nameplate capacity of wind energy conversion systems by 2010, beyond the amount of wind energy capacity to which the utility is required by law or commission order as of May 1, 2003. At least 100 megawatts of this capacity are to be wind energy conversion systems of two megawatts or less, which shall not be eligible for the production incentive under section 216C.41. To the greatest extent technically feasible and economic, these 300 megawatts of wind energy capacity are to be distributed geographically throughout the state. The utility

may opt to own, construct, and operate up to 100 megawatts of this wind energy capacity, except that the utility may not own, construct, or operate any of the facilities that are under two megawatts of nameplate capacity. The deployment of the wind energy capacity under this subdivision must be consistent with the outcome of the engineering study required under Laws 2003, First Special Session chapter 11, article 2, section 21.

~~(b) The renewable energy objective set forth in subdivision 2 shall be a requirement for the public utility that owns the Prairie Island nuclear generation plant. The objective is a requirement subject to resource planning and least cost planning requirements in section 216B.2422, unless implementation of the objective can reasonably be shown to jeopardize the reliability of the electric system. The least cost planning analysis must include the costs of ancillary services and other necessary generation and transmission upgrades.~~

~~(c)~~ Also as part of its good faith effort under this section, the utility that owns a nuclear generation facility is to enter into a power purchase agreement by January 1, 2004, for ten to 20 megawatts of biomass energy and capacity at an all-inclusive price not to exceed $55 per megawatt-hour, for a project described in section 216B.2424, subdivision 5, paragraph (e), clause (2). The project must be operational and producing energy by June 30, 2005.

Subd. 7. [COMPLIANCE.] The commission, on its own motion or upon petition, may investigate whether an electric utility is in compliance with its standard obligation under subdivision 2a and if it finds noncompliance may order the electric utility to construct facilities or purchase credits to achieve compliance. If an electric utility fails to comply with an order under this subdivision, the commission may impose a financial penalty on the electric utility in an amount up to the electric utility's estimated cost of compliance.

A

Union of Concerned Scientists
Citizens and Scientists for Environmental Solutions

fact sheet

EIA Study: National Renewable Energy Standard of 20% is Easily Affordable

A national renewable portfolio standard (RPS) to provide 20% of US electricity from wind, solar, geothermal, and biomass energy by 2020 would cost energy consumers almost nothing, according to a recent study by the U.S. Department of Energy's Energy Information Administration (EIA).[1] A national RPS increasing these resources from 2% today to 20% by 2020 is included in the Renewable Energy and Energy Efficiency Act of 2001 (S. 1333), proposed by Sen. Jeffords (I-VT) and five other Senators.

The EIA report, using high estimates of renewable energy costs (see discussion below), shows that under a 20% RPS, total consumer energy bills (other than for transportation) would be roughly the same as business as usual through 2006 and only $2.8 billion or 0.7% higher in 2010. By 2020, total bills would be $580 million (0.1%) *lower* with an RPS (Figure 1, 1999 dollars).

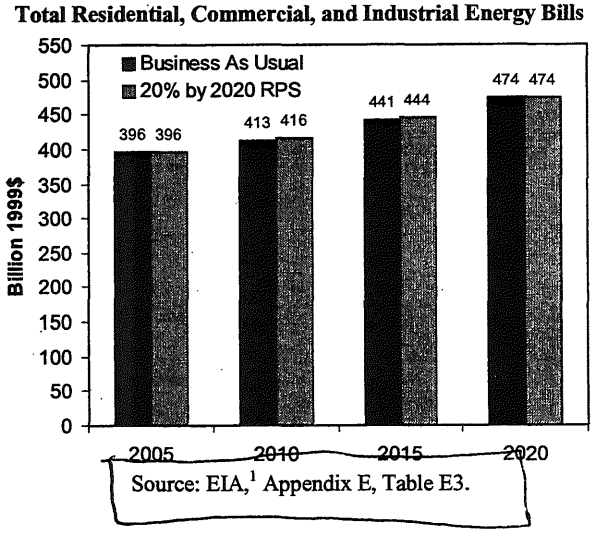
Other studies using more realistic assumptions and incorporating the energy efficiency incentives in S. 1333 show that consumers could receive 20% of their electricity from renewable sources and save billions of dollars (see below).

EIA found that a 20% RPS would increase average electricity prices (the cost per unit of electricity) by only 3% over business as usual levels in 2010 and 4% in 2020 (Figure 2). With a 20% RPS, electricity prices in 2020 are still projected to be nearly 7% lower than they are today.

Even these small increases in electricity prices are largely offset, however, by lower natural gas prices. Because an RPS creates a more diverse and competitive market for energy supply, EIA finds that these market forces would reduce natural gas prices and bills.

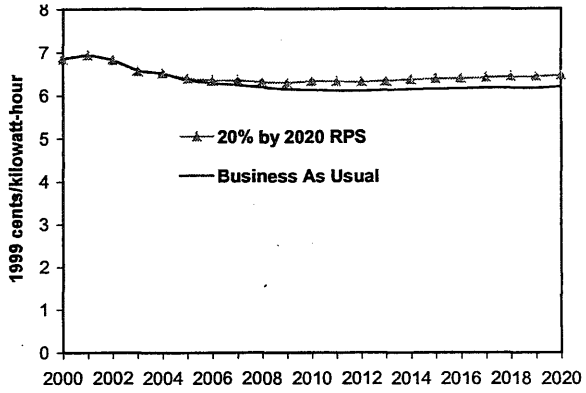
Diversifying the electricity mix with renewable energy also helps stabilize electricity prices by easing pressure on natural gas prices and supplies. Under a 20% RPS, average consumer natural gas prices are 3% lower than business as usual in 2010 and 9% lower in 2020. These lower prices would save gas consumers $10 billion per year by 2020.

Figure 1. National RPS Cost - 20% by 2020



Source: EIA,[1] Appendix E, Table E3.

Figure 2. Average Consumer Electricity Prices



The net present value cost of a 20% RPS would be only $14 billion over the next 18 years. With ongoing natural gas savings after 2020, an RPS would likely produce net savings for consumers.

www.ucsusa.org | Two Brattle Square · Cambridge, MA 02238-9105 · TEL: 617.547.5552 · FAX: 617.864.9405
1707 H Street, NW · Suite 600 · Washington, DC 20006-3962 · TEL: 202.223.6133 · FAX: 202.223.616:
2397 Shattuck Avenue · Suite 203 · Berkeley, CA 94704-1567 · TEL: 510.843.1872 · FAX: 510.843.378

A 20% RPS would also help reduce emissions from power plants. Under an RPS, carbon emissions from power plants would be 55 million metric tons or 8% lower than business as usual in 2010 and 137 million metric tons or 18% lower in 2020, according to EIA.

Correcting EIA Assumptions and Combining an RPS with Efficiency Produces Additional Savings
Several other studies have found that using more realistic assumptions and combining an RPS with strong energy efficiency policies would produce additional savings for consumers.

- The DOE Interlaboratory Working Group (IWG), consisting of the five national energy research labs, corrected a number of EIA's assumptions (see below) and found that, when combined with energy efficiency programs, an RPS of 7.5% by 2010 would save consumers over $65 billion per year by 2020 (1997$).[2]
- At the request of Senator Jeffords, EIA used IWG assumptions and found that the combination of an RPS of 7.5% by 2010, advanced energy efficiency measures, and four-pollutant emission reduction targets similar to those proposed by Senator Jeffords in S. 556 would save consumers $64 billion per year by 2020 on their energy bills.[3]
- UCS' *Clean Energy Blueprint* report, which used similar assumptions to the IWG for renewable energy technologies, shows that an RPS of 20% by 2020, with the energy efficiency incentives in S. 1333, would save consumers $35 million per year by 2020 or a net present value of $70 billion over 18 years.[4]
- The *Clean Energy Blueprint* found that additional efficiency incentives, including for combined heat and power plants, would increase annual savings to $105 million per year in 2020 and net present value savings to $440 billion over 18 years.

EIA Overestimates the Costs of Renewable Energy
The DOE Interlaboratory Working Group found that EIA significantly overestimates the cost of adding renewables to the system.[5] The EIA

- Uses higher cost and worse performance assumptions for most renewable technologies than recent experience and projections by the utilities' Electric Power Research Institute and DOE;
- Arbitrarily increases the capital cost of wind, biomass, and geothermal technologies by up to 200% in a given region after a fairly small amount of the regional potential is met;
- Limits the penetration of variable output resources like wind and solar power to 15% of a region's electricity generation; in parts of Germany, Denmark and Spain, wind power is already providing more than 20% of total electricity generation;
- Assumes that renewable energy generation will cost 4 to 5 cents more per kilowatt-hour than electricity from natural gas plants between 2010 and 2020.

UCS also found that both the EIA and the IWG limit the amount of biomass that can be co-fired in existing coal power plants to 5% of the plant's input. Recent experience from around the world has shown coal plants can be co-fired with up to 10-15% biomass.

---

[1] Energy Information Administration, *Analysis of Strategies for Reducing Multiple Emissions from Electric Power Plants: Sulfur Dioxide, Nitrogen Oxides, Carbon Dioxide, and Mercury and a Renewable Portfolio Standard,* SR/OIAF/2001-03, June 2001. http://www.eia.doe.gov/oiaf/servicerpt/epp/pdf/sroiaf(2001)03.pdf

[2] This does not include net savings in the transportation sector.

[3] Energy Information Administration, *Analysis of Strategies for Reducing Multiple Emissions from Power Plants with Advanced Technology Scenarios*, SR/OAIF/2001-05, October 2001, Table D3. http://tonto.eia.doe.gov/FTPROOT/service/oiaf2001-05.pdf. This does not include net savings in the transportation sector or savings that would occur from auctioning carbon allowances and returning the proceeds to consumers.

[4] Union of Concerned Scientists, *Clean Energy Blueprint: A Smarter National Energy Policy for Today and the Future,* October 2001. http://www.ucsusa.org/energy/blueprint.html

[5] Interlaboratory Working Group, *Scenarios for a Clean Energy Future* (Oak Ridge, TN; Oak Ridge National Laboratory and Berkeley, CA; Lawrence Berkeley National Laboratory), ORNL/CON-476 and LBNL-44029, November 2000. http://www.ornl.gov/ORNL/Energy_Eff/CEF.htm

Union of Concerned Scientists
Citizens and Scientists for Environmental Solutions

Renewing Minnesota's Economy

A National Renewable Electricity Standard Will Create Jobs and Save Consumers Money

A national renewable electricity standard (RES)[1] would require electric utilities to supply a set percentage of their electricity from renewable sources such as wind, solar, geothermal, and bioenergy. Similar programs have already been implemented in 16 states, including Minnesota, where a minimum renewable electricity requirement has been established for only one utility, covering about half of the state's electricity use.

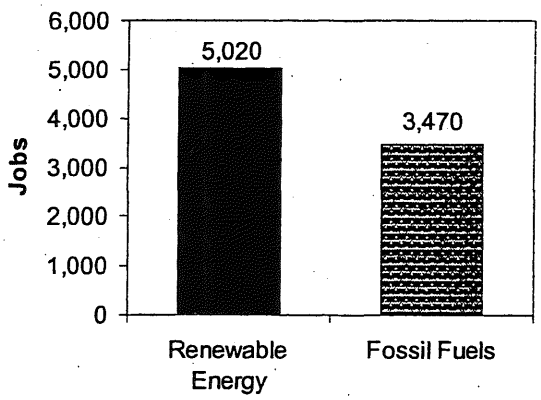
Over the past four years, an unprecedented surge in natural gas power plant construction has contributed to rising natural gas and electricity prices. Consumer natural gas prices have more than doubled. High gas prices are forcing industrial users such as the petrochemical industry to move their operations overseas. U.S. chemical workers have lost approximately 78,000 jobs since natural gas prices began to rise in 2000.[2] Farmers are also feeling the pain because natural gas accounts for 90 percent of the cost of fertilizer. These prices show no signs of abating.

Renewable Energy Creates Jobs and Economic Benefits

A new UCS analysis found that under a national 20 percent RES, Minnesota would increase its total home-grown renewable power to more than 4,750 megawatts (MW) by 2020.[3] The majority of this development would be powered by Minnesota's strong wind and bioenergy resources. This level of renewable development would produce enough electricity to meet the needs of over 3.4 million typical homes, provide the equivalent of 24 percent of the electricity sales in the state, and reduce the use of imported coal and natural gas. Minnesota has the technical potential to generate more than 13 times its current electricity needs from renewable energy.

Renewable energy development would create new high-paying jobs and other economic benefits in Minnesota. By 2020, the 20 percent standard would create 5,020 new jobs in manufacturing, construction, operation, maintenance, and other industries. Renewable energy would create 1.4 times more jobs than fossil fuels—a net increase of over 1,500 jobs by 2020.[4] It would also generate an additional $60 million in income and $80 million in gross state product in Minnesota's economy.

Renewable Energy vs. Fossil Fuel Jobs
Minnesota, 2020
(20 percent by 2020 RES)



Renewable Energy Boosts Rural Economies

A national RES would also provide a tremendous boost to rural economies in Minnesota. Many of the jobs identified above would be created in rural areas where the renewable resources and facilities would be located. By 2020, a 20 percent national standard would provide in Minnesota:

- $1.7 billion in new capital investment
- $342 million in payments to farmers and rural areas from producing biomass energy
- $126 million in new property tax revenues for local communities
- $41 million in lease payments to farmers and rural landowners from wind power[5]

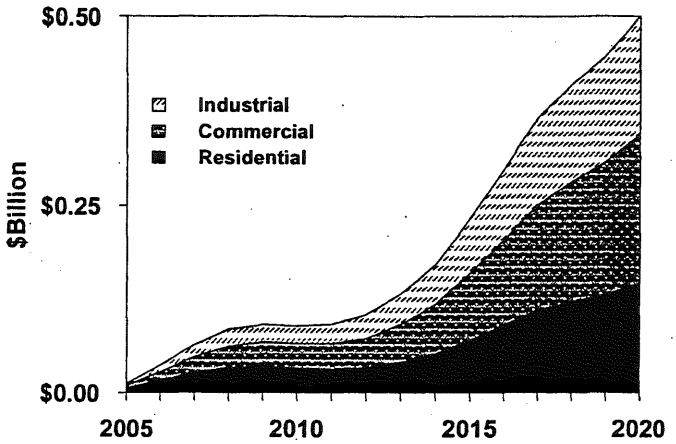
Renewable Energy Saves Consumers Money

The 20 percent by 2020 national RES would reduce long run energy costs to consumers. Increased competition from renewable energy leads to slightly lower natural gas and electricity prices. By 2020,

www.ucsusa.org | Two Brattle Square · Cambridge, MA 02238-9105 · TEL: 617.547.5552 · FAX: 617.864.9405
1707 H Street, NW · Suite 600 · Washington, DC 20006-3962 · TEL: 202.223.6133 · FAX: 202.223.6162
2397 Shattuck Avenue · Suite 203 · Berkeley, CA 94704-1567 · TEL: 510.843.1872 · FAX: 510.843.3785

total consumer savings in Minnesota from lower energy prices would be $500 million. All sectors of Minnesota's economy would benefit from the national RES, with commercial, industrial, and residential customers total savings reaching $200 million, $160 million, and $150 million respectively by 2020.

Cumulative Energy Bill Savings by Sector, Minnesota (20 percent by 2020 RES)[a]



[a]Excludes transportation.

Renewable Energy Conserves Resources and Provides Environmental Benefits

Increasing renewable energy use will reduce the amount of air pollution from power plants that threaten people's health by burning coal, oil, and natural gas. Carbon dioxide emissions, which trap heat in the atmosphere and cause global warming, would also be reduced. Nationally, the 20 percent RES will reduce about 434 million metric tons of power plant carbon dioxide emissions a year by 2020—a reduction of 15 percent below business as usual levels. The RES will also reduce harmful water and land impacts from extracting, transporting, and using fossil fuels and conserve resources for future generations.

A 10 Percent National RES Will Provide Important—but Fewer—Benefits

UCS also examined the costs and benefits of the national 10 percent by 2020 RES and renewable energy tax credits passed by the U.S. Senate in July 2003 as part of a comprehensive energy bill (HR 6). Under a 10 percent RES, Minnesota consumers would still see new job growth, economic and environmental benefits, as well as savings on electricity and natural gas bills. However, these benefits would be less than what would occur under a 20 percent RES. Through 2020, the 10 percent national standard would produce:

- a net increase of 850 new jobs
- $1.26 billion in new capital investment
- $250 million in total consumer energy bill savings
- $95 million in payments to farmers and rural landowners from producing biomass energy
- $91 million in new property tax revenues for local communities
- $32 million in lease payments to farmers and rural landowners from wind power

Providing jobs, economic development, and a cleaner, safer energy future

A national renewable electricity standard would make Minnesota's energy supply—and the energy supply of the entire United States—more reliable and secure. It would use homegrown energy sources to create high-skilled homegrown jobs, boost rural economies, and put energy dollars back into the pockets of consumers. The RES is a sensible step toward a balanced approach to meeting future energy demands, and is far more responsible than continuing to rely on unstable and polluting power sources.

For additional information, visit the UCS Clean Energy web site at www.ucsusa.org/clean_energy.

[1] The renewable electricity standard is also known as a renewable portfolio standard or RPS.
[2] Wall Street Journal, February 17, 2004.
[3] UCS used a modified version of the U.S. Energy Information Administration's (EIA) National Energy Modeling System computer model to examine the costs and benefits of increasing renewable energy use. We evaluated a 20 percent by 2020 RES proposal by Senator Jeffords (I-VT) and the tax credits for renewable energy that were supported by the Senate energy bill conference committee in November 2003. For the national results, see *Renewing America's Economy* (September 2004). More information about UCS's modeling approach can be found at *www.ucsusa.org/clean_energy/renewable_energy/page.cfm?pageID=1505* and in the October 2001 report *Clean Energy Blueprint*, available online at *www.ucsusa.org/clean_energy/renewable_energy/page.cfm?pageID=44*.
[4] We conservatively assume that 33 percent of the manufacturing for the wind and solar technologies installed in Minnesota is produced by businesses located in the state. We also do not include any jobs or economic development from Minnesota manufacturers exporting equipment to other states or countries. If Minnesota is able to attract renewable energy manufacturers to produce equipment for facilities in the state and for export, the jobs and income from the RES would increase significantly.
[5] Results are presented in cumulative net present value 2002$ using a 7 percent real discount rate. Job results are for the year 2020.

Union of Concerned Scientists
Citizens and Scientists for Environmental Solutions

fact sheet

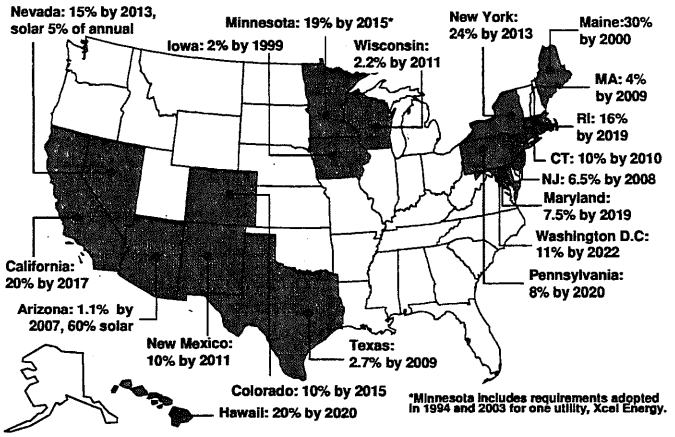
Renewable Electricity Standards at Work in the States

In a growing number of states, renewable electricity standards (RES)—also called renewable portfolio standards—have emerged as an effective and popular tool for promoting a cleaner, renewable power supply. An RES requires electric utilities to gradually increase the amount of renewable energy resources—such as wind, solar, and bioenergy—in their electricity supplies. State leadership has demonstrated that an RES can reduce market barriers and stimulate new markets for renewable energy. Because renewable energy can help meet critical national goals for fuel diversity, price stability, economic development, environmental, and energy security, an RES should play a vital role in America's national energy policy.

Which States have an RES?

To date, 18 states and Washington D.C. have implemented minimum renewable energy standards.[1] On Election Day 2004, Colorado voters passed the first-ever RES ballot initiative requiring the state's utilities to generate 10 percent of their electricity from renewable energy sources by 2015. In September 2004, New York created the second-largest new renewable energy market in the country, behind only California, when the state Public Service Commission adopted a 24 percent by 2013 RES. Hawaii, Maryland, Pennsylvania, Rhode Island, and Washington D.C. also enacted minimum renewable electricity standards in 2004. Eight states enacted an RES as part of legislation that deregulated electricity generation, and ten states enacted standards outside of utility restructuring. Several states—including Minnesota, Nevada, New Mexico, New Jersey, and most recently Pennsylvania—have revisited and significantly increased or accelerated their standards.

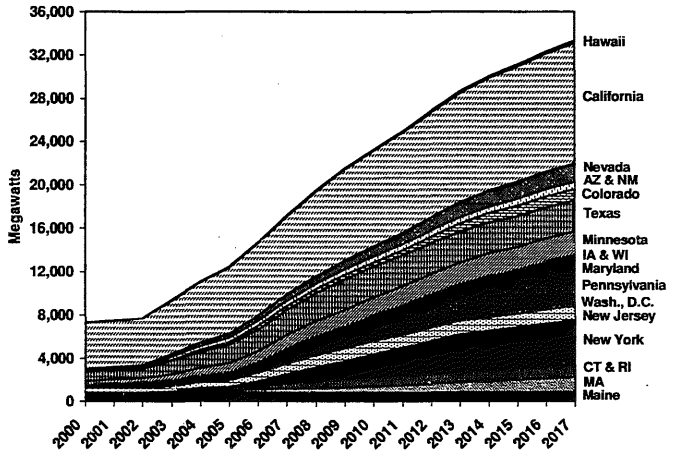
Renewable Electricity Standards



New Renewable Energy Development

UCS projects that state RES laws and regulations will provide support for more than 25,550 megawatts (MW) of new renewable power by 2017—an increase of 192 percent over total 1997 U.S. levels (excluding hydro). This represents enough clean power to meet the electricity needs of 16.9 million typical homes. The standards in California, New York, Pennsylvania, and Texas create the four largest markets for new renewable energy growth. By 2017, annual new renewable energy production from all state RES programs will reduce carbon dioxide emissions—the heat-trapping gas primarily responsible for global warming—by 64.3 million metric tons. This level of reductions is equivalent to taking 9.6 million cars off the road or planting more than 15.4 million acres of trees—an area approximately the size of West Virginia.

Renewable Energy Expected From State Standards*



* Projected development assuming states achieve annual RES targets.

www.ucsusa.org
Two Brattle Square · Cambridge, MA 02238-9105 · TEL: 617.547.5552 · FAX: 617.864.9405
1707 H Street, NW · Suite 600 · Washington, DC 20006-3962 · TEL: 202.223.6133 · FAX: 202.223.6162
2397 Shattuck Avenue · Suite 203 · Berkeley, CA 94704-1567 · TEL: 510.843.1872 · FAX: 510.843.3785

Success in the States: Creating a National RES Model

While most standards have been enacted too recently to fully evaluate their effectiveness, a number of studies have found that renewable electricity standards are and will continue to be the primary driver of new renewable energy generation in the United States.[2] In fact, two-thirds of the wind development installed between 1998 and 2003 (3,300 MW) occurred in states that have an RES. In Minnesota, Xcel Energy has acquired about 600 MW of wind and bioenergy as a result of its requirement. Wisconsin utilities have secured enough renewable resources to meet their targets through 2011, and Iowa has met and exceeded its relatively low renewable energy requirement. But the most successful RES so far may belong to Texas.

The Texas legislature adopted an RES in 1999 that requires 2,000 MW of new renewable electricity generating capacity to be installed by 2009. The RES was signed into law by then-Governor George W. Bush and implemented by Federal Energy Regulatory Commission Chair Pat Wood, a former Texas utility regulator. More than 1,100 MW of renewable energy have already been installed in Texas, which puts the state well ahead of its 2005 target of 850 MW. The Texas RES has been successful, in part, due to the availability of good renewable energy resources in the state and the inclusion of the following key provisions in the legislation:

- New renewable energy requirements are high enough to trigger market growth in the state
- Requirements can be met using tradable renewable energy credits
- Requirements apply across the board to all electricity providers
- Retail providers that do not comply with the RES target must pay significant financial penalties

In states where utilities divested generation and credit-worthy power marketers have not emerged (as in the Northeast), or utilities have had credit problems (as in Nevada), new renewable energy projects have had a difficult time obtaining contracts and financing. Many of these states are addressing the issues by creating new supplemental mechanisms, such as using state agencies to provide financing or credit price guarantees.

Why Do We Need A National RES?

States have demonstrated that renewable electricity standards can be effective. In addition, survey after survey shows that Americans strongly favor clean renewable energy sources and support a national renewable electricity standard. Because investments in renewable energy create important benefits for the entire nation, the RES should now become a cornerstone of America's national energy policy. A strong national commitment to renewable energy is needed to:

- Diversify our fuel mix and enhance the reliability of fuel supplies
- Increase economic development and family-wage jobs
- Insulate our economy from fossil fuel price spikes and supply shortages
- Create new competition to help restrain fossil fuel price increases
- Improve our national security
- Reduce a growing reliance on imported fuel and electricity
- Reduce renewable energy technology costs by creating economies of scale and a national market for the most cost-effective resources
- Protect our environment and public health
- Build a strong U.S. renewable energy industry, which can serve growing domestic and international markets

Existing state commitments are an excellent start, but a national RES is necessary to satisfy these goals for the entire country.

---

[1] For detailed information on state RPS programs and other state policies to promote renewable energy, see UCS website, http://www.ucsusa.org/clean_energy/renewable_energy/page.cfm?pageID=114.

[2] See UCS website, http://www.ucsusa.org/clean_energy/renewable_energy/page.cfm?pageID=1517.

WIND POWER OUTLOOK 2004

Stiff Challenges, Big Opportunities

The U.S. wind energy industry demonstrated once again in 2003 that it can quickly ramp up production to meet the nation's growing power demand. The industry chalked up a near-record year in new wind farm installations, and utility and policy decision-makers are clearly taking notice of this zero-emissions, domestic power source.

The wind industry's momentum was cut short, however, as the federal wind energy production tax credit (PTC) again expired at the end of the year, due to the inability of Congress to agree on comprehensive energy policy legislation. (The PTC provides a tax credit as an incentive to companies that own wind farms.) Unless the PTC is extended early on, the boom of 2003 is likely to be followed by a bust in 2004. This would be the third such boom-and-bust cycle inflicted on the U.S. wind energy industry in the past five years. The industry is calling on Congress to pass a long-term extension of the PTC to provide a stable market environment and unleash the technology's pent-up potential.

Large Potential Ready to Meet the Power Needs of the 21st Century

America's wind resources are vast, and may be even greater than previously estimated, according to a 2003 Stanford University study. Previously uncharted offshore potential along the southeastern and southern coasts makes wind power generation feasible in these areas, where little or none had been deemed possible before. Taller sizes and sophisticated electronic controls also allow modern turbines to wring ever more power from the wind.

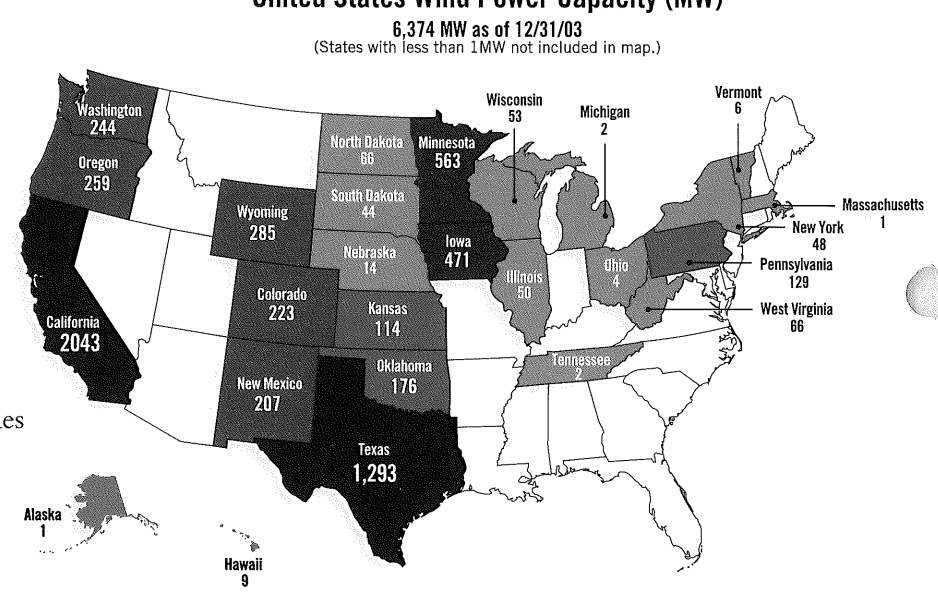
Tapping only a fraction of America's vast wind resources would easily yield much of the new power that the country will need in the years ahead: in order to generate 15 % of America's electricity (twice what hydropower generates today) only 0.6% of the land of the lower 48 states would have to be developed with wind power plants, according to a study by the Pacific Northwest Laboratory for the U.S. Department of Energy. Within that area, as little as 5% of the land would be taken up by equipment and access roads, and most existing land use, such as farming and ranching, would continue as it is now.

With its abundant, inexhaustible potential, its increasingly competitive cost, and environmental advantage, wind energy is one of the best technologies available today with which to meet the world's growing demand for power.

AMERICAN WIND ENERGY ASSOCIATION
30th Anniversary
1974-2004

U.S. Wind Energy Industry Sets Near-Record in 2003

2003 came very close to the best year ever in the U.S., with 1,687 megawatts (MW) of new wind power constructed -- only a few megawatts shy of the record 1,696 MW installed in 2001. Current installed capacity in the U.S. is 6,374 MW, with utility-scale wind turbines installed in 30 states. One megawatt of wind capacity generates enough to power the equivalent of 300 average American households.



The large buildup in capacity is a 36% increase over the installed wind power base in the U.S. at the beginning of the year. Over the last five years (1999-2003), U.S. wind generating capacity has expanded at an annual average rate of 28%.

The wind industry would only have to maintain an annual growth rate of about 18% to achieve the American Wind Energy Association's (AWEA) estimate that wind can provide 6% of the nation's electricity by the year 2020. The past year has shown that rate to be a readily achievable goal with consistent policy support from federal and state governments. More wind power in the nation's power portfolio means less reliance on fossil fuels and vulnerability to spikes in the cost of fuel, more economic development in rural areas, and more pollution-free power.

The wind farms completed in 2003 will generate approximately $5 million in payments to landowners annually and create skilled, long-term jobs in areas where such employment is scarce.

The wind farms completed in 2003 will generate approximately $5 million in payments to landowners annually and create skilled, long-term jobs in areas where such employment is scarce, as well as short-term construction jobs and associated economic activity.

Voluntary green power programs are helping bring new wind farms online throughout the country. Altogether, green power programs have facilitated over 1,200 MW of renewable energy—much of it wind power — since the concept was launched some ten years ago. Universities have been particularly strong first adopters of green power.

Oklahoma, Illinois, and Ohio saw their first installations of large-scale wind turbines.

Minnesota added the most new wind power (226 MW) of any state in 2003, moving back into third place in total capacity behind only California and Texas. Three other states topped the 200-MW mark in new installations in 2003: California, with 212 MW; New Mexico, with 205 MW; and Texas, with 204 MW.

Spanish turbine manufacturer Gamesa and Indian manufacturer Suzlon installed their first machines in the U.S. in 2003, both in Minnesota. More than half of the new capacity installed in the U.S. in 2003 consisted of GE Wind turbines.

In other wind turbine manufacturing news, Vestas and NEG Micon, two global market leaders, announced that they would merge, creating the world's largest single wind turbine manufacturing company. The wind energy industry is also producing ever larger, more powerful, and more sophisticated machines. Several companies introduced turbines in the 2-MW range for land-based commercial applications, and even larger turbines are being tested as prototypes. In 2003 GE Wind installed its first offshore 3.6-MW units, off the coast of Ireland -- the largest commercial wind turbines at the time.

Uncertain Policy Environment

In spite of strong bipartisan support, the wind energy production tax credit (PTC) expired December 31, 2003. An extension of the PTC through December 31, 2006, is contained in wide-ranging energy policy legislation on which Congress has been unable to reach final agreement. The PTC, enacted in 1992, provides a 1.8 cent per kilowatt-hour credit (adjusted periodically for inflation) for electricity produced from a wind farm during the first 10 years of operation, and is important for financing wind projects. The delay in the PTC's renewal is inflicting a high cost on the industry— initial estimates by AWEA were that, with a timely extension, a record-busting 2,000 MW of new wind capacity would have been installed in the U.S. in 2004.

The comprehensive energy policy bill also contained a new investment tax credit for small wind turbines (rated at 75 kW and below) used to power an individual home or farm. The credit would help reduce the cost of a small wind system, making it more affordable for consumers.

Absent from the comprehensive energy bill was a "renewables portfolio standard" (RPS) requiring that a growing share of the nation's power supply come from renewable sources by 2020. The Senate had included an RPS in its energy bill in 2002, and in 2003, a majority of Senators urged Congressional leaders to include the RPS in the final energy bill. That effort did not succeed. By rejecting the RPS, Congress failed to provide the type of stable market signal that will stimulate U.S.-based manufacturing and large-scale deployment of renewable energy.

At the state level, implementation of a state-level RPS announced by New York Governor George Pataki in early 2003 is proceeding slowly. The California RPS, passed by the legislature in 2002, is also moving slowly at the Public Utilities Commission. In a more positive development, in early 2004, an RPS was under consideration in both Colorado and Illinois. In Colorado, advocates were preparing to take the RPS directly to voters in a referendum in case the effort failed in the legislature.

Small Wind Systems At Work in U.S. and Overseas

Small wind turbines allow homeowners, farmers, businesses, and public facilities to generate their own clean power and reduce their electricity bills. In 2003, for example, Hershey Park, an amusement park in Pennsylvania, installed a small wind energy system (right) to promote the benefits of clean energy to the park's 2.4 million annual visitors. The 10-kW Bergey Windpower wind turbine and 80-ft. tower were installed with support from the Pennsylvania Sustainable Energy Fund. The system also includes a small solar array. The amount of clean power generated from the wind turbine and the solar panels is displayed in real time. The environmental benefit is equal to not driving almost 30,000 miles each year or to planting over 2,000 trees.

Small wind energy systems also allow off-grid homes and remote communities to generate their own power. In 2003, for example, two 1-kW wind turbines and small solar arrays were installed for a CARE water treatment project in Afghanistan. By eliminating fuel requirements and generator maintenance, such systems greatly reduce the logistics burden for military or relief agencies. The small systems are easy to ship and install. A 1.2-kW hybrid (wind + solar) system can typically supply enough energy to power a school, a clinic, water pumps, or disinfection systems.

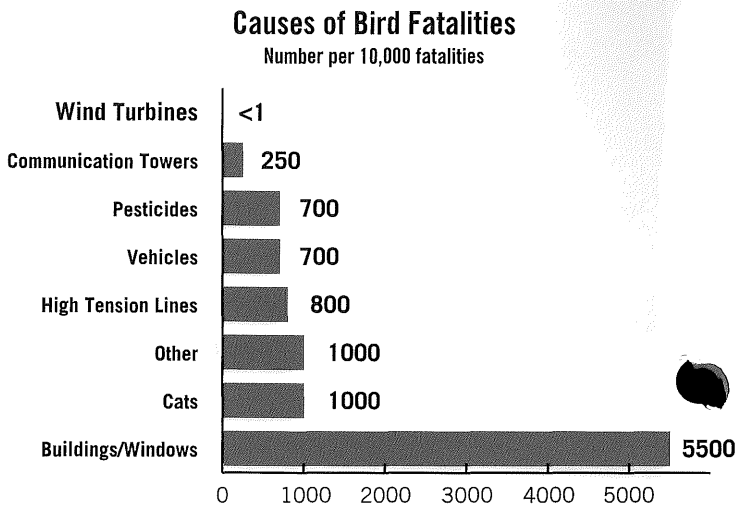
Transmission Reform and Planning: Gordian Knot

As wind energy expands, it faces the challenge of gaining fair access to the utility transmission system and non-discriminatory treatment on its wires. The stakes are high: for the country to tap its wind power potential in a big way and provide 6% or more of the nation's power supply, wind power generators need to get their product to market--for example, from wind-rich areas in the Great Plains and Interior West to urban centers with growing electricity demand.

Securing fair rules, and a planning process that includes wind alongside other power technologies in the design of transmission upgrades and new lines, are key to getting wind power to market across the country.

Over 200 different "tariffs" throughout the country govern the costs and conditions for access to, and use of, the grid. Many of these charge heavy, discriminatory penalties against new technologies like wind. Securing fair rules, and a planning process that includes wind alongside other power technologies in the design of transmission upgrades and new lines, are key to getting wind power to market across the country.

This challenge has been complicated by the sidelining of efforts by the Federal Energy Regulatory Commission (FERC) to overhaul and standardize transmission access rules. National rules proposed by FERC would have eliminated unfair penalties associated with variable output, streamlined interconnection procedures, and leveled the playing field for wind energy. Instead, such non-discriminatory rules will need to be secured on a piecemeal basis. A few jurisdictions, like the Electricity Reliability Council of Texas (ERCOT) and the PJM Interconnection in the mid-Atlantic states, have adopted non-discriminatory transmission pricing, and demonstrate how such reforms enhance competition and benefit consumers. Partial reforms are also in place in California and at the Bonneville Power Administration in the Pacific Northwest. The rules proposed by FERC and already at work in Texas and PJM provide a model for regional transmission organizations throughout the country.



Source: Erickson et al., 2002, Summary of Anthropogenic Causes of Bird Mortality.

Help Save Wildlife With More Wind Power

One of the recurring arguments used by skeptics or opponents of wind energy is that it kills birds. In fact, wind energy is one of the cleanest, most environmentally friendly energy sources available. Estimates run by wind power opponents themselves show that bird deaths due to wind development will never be more than a very small fraction of those caused by other human activities. See **www.yes2wind.com**, the joint Web site of WWF, Friends of the Earth and Greenpeace created to support wind power.

FACT: Even if wind were to generate 100% of U.S. electricity needs today, wind would account for only one of every human-related bird deaths. Leading direct threats to bi include buildings, vehicles, cats, pesticides.

FACT: Power plants are the largest industrial source of air pollutants (including sulfur dioxide, nitrogen oxide, particulate matter, and mercury) in the U.S. A report by the National Wildlife Federation finds that the common loon and other aquatic wildlife in the Great Lakes are at risk from high concentrations of mercury. "Protected" areas such as state and national parks offer no protection to wildlife from this and other forms of airborne pollution.

FACT: Power plants also account for about 34% of the carbon dioxide (CO2) emitted by the U.S., itself the largest emitter of CO2 worldwide. Carbon dioxide is the leading greenhouse gas associated with climate change.

FACT: Climate change is predicted to result in countless bird deaths through large-scale alteration of habitat, according to a Defenders of Wildlife report. WWF reports that the gradual warming of the Arctic is already endangering the lives of birds in the polar region. A study published in *Nature* (January 2004) found that one million species--more than one-t of native species of plants and animals worldwide--cou disappear or approach extinction by 2050 if global warming continues.

FACT: The new wind capacity installed in the U.S. in 2003 will displace emissions of three million tons of carbon dioxide (the leading greenhouse gas) annually.

Lots More Wind Power = Cheaper Natural Gas

The cost of wind power, once a wind farm has been built, is steady over time, and not subject to fuel price volatility. This, along with its economic benefits for rural areas and its environmental advantage, makes wind an attractive technology with which to diversify the nation's power portfolio and help reduce the looming natural gas shortage predicted by many energy experts.

As part of a national energy program aimed at moving quickly to deal with the shortage and increase overall reliability of the national electricity transmission system, AWEA has launched a three-step "wind pipeline" proposal to collect wind-generated electricity from the windy, lightly-populated heartland and deliver it to urban centers in the Midwest and West.

Phase I: Transmission reform to more fully utilize existing power line capacity and ensure non-discriminatory access. Cost: $0. New wind capacity facilitated: ~4,000 MW (equivalent to ~0.4 billion cubic feet (Bcf)/day of natural gas, or electricity needs of 1 million homes).

Phase II: Addition of several new local transmission lines to remove existing system bottlenecks and bolster secondary-level reliability. Cost: ~$1 billion. New wind capacity facilitated: ~26,000 MW (equivalent to ~2.4 Bcf/day of natural gas, or electricity needs of 6.5 million homes).

Phase III: Construction of two major high-voltage lines from the northern Plains to the East (Trans-Prairie Wind Pipeline) and West (Interior West Wind Pipeline). Cost: $10 billion to $20 billion. New capacity facilitated: 30,000 MW to 60,000 MW (equivalent to ~2.8-5.5 Bcf/day, or electricity needs of 7.5 million to 15 million homes). Three Bcf/day is about as much natural gas as the states of Colorado and Alaska produce today. Neither Phase III nor any construction of new major transmission lines should occur unless non-discriminatory access and reliability standards are in place.

The AWEA proposal would improve reliability of the electric system, and provide a sturdy link between the Midwest and West. The large-scale investments in wind energy would not only relieve pressure on natural gas prices, but also revitalize rural communities in many parts of the Great Plains.

Wind/Natural Gas Compatibility

WIND		NATURAL GAS
Low Operating Cost	⟷	High Operating Costs
High Capital Cost	⟷	Low Capital Cost
Non-dispatchable	⟷	Dispatchable
No Fuel Supply/Cost Risk	⟷	Fuel Supply/Cost Risk
No Emissions	⟷	Smog, Greenhouse Gas Emissions

Wind and natural gas power plants are a winning combination on the grid and in a utility's power portfolio because of their complementary characteristics.

Wind Energy: A Popular Energy Source

As wind power expands, so has publicity about occasional, not-in-my-backyard (NIMBY) opposition to proposed wind farms. Could wind energy face a backlash of public opinion?

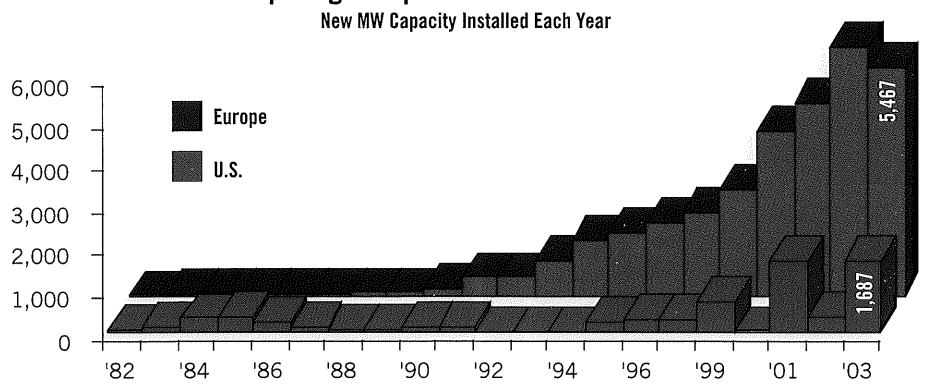
Public opinion surveys conducted over the years and in 2003 in fact reveal strong backing for wind power, and for renewable energy in general.

The Nebraska Public Power District in August, 2003, asked its customers whether it should go forward with a $200 million wind project if that meant that utility rates would increase by up to 2.5%. The response was stunning: 96% said yes, and 37% thought the wind project should be larger. A more traditional opinion poll of Colorado residents in March likewise found 82% supporting "wind and solar" even if rates would increase as a result.

Polling in Europe shows that support for wind energy tends to strengthen after a wind plant has been installed and operating for some time.

Polling in Europe shows that support for wind energy tends to strengthen after a wind plant has been installed and operating for some time.

In Scotland, according to a 2003 survey, people living close to the 10 largest wind farms in the region strongly support wind, 82% of the respondents want an increase in electricity generated from wind, and 54% support an increase in the number of turbines at their local wind farm. In Spain, studies surveying the Catalonian province of Tarragona showed that four out of five Catalonians favor wind energy, with the strongest support coming from people residing near a wind farm.



Smart Wind Turbines Can Enhance Grid Reliability

The massive blackout that affected much of the American Northeast in August, 2003, exposed long-standing weaknesses in the nation's transmission infrastructure and management. However, agreement on what needs to be done remains elusive.

Inefficient, "balkanized" markets and tariffs should be avoided, and development of "smart" transmission system controls should be aggressively pursued, according to AWEA. Sophisticated new communications and monitoring hardware and software should be installed to enable grid controllers to monitor and manage power flows more easily. The cost of such investments to expand capacity and efficiency of transmission is relatively small compared to the costs of a large blackout or to the savings that would be gained from increased efficiency in the much-larger electricity generation sector.

The wind energy industry is developing performance standards and interconnection requirements for its own technology that could enhance grid reliability. New designs make it possible for wind turbines to continue operating through a problem on the utility system such as a short circuit or a lightning strike instead of being required and designed to shut down. In fact, turbines have become so advanced that they can stay connected in such events and actually help maintain the stability of the system's power quality. The offshore Horns Rev wind farm in Denmark, a country that gets more than 20% of its power from wind, provides an example of such advances in the technology.

The challenge facing the U.S. wind energy industry is to ensure that officials at the North American Electric Reliability Council (NERC) and regional and state counterparts, backed by effective enforcement by the Federal Energy Regulatory Commission (FERC), not only recognize wind's technological capabilities, but also work with the wind energy industry to establish fair, non-exclusionary reliability standards.

World Market Expands Steadily

Global wind power generating capacity increased by over 8,000 MW in 2003, a 26% increase, with most of the market growth occurring in Europe. The near-record year in the U.S. offset a slight decline in new installations in the massive German market. Spain added the most wind power (1,377 MW) after Germany (2,645 MW) and the U.S. (1,687 MW). The world's total wind power generating capacity was over 39,000 MW at the end of 2003—up from just over 31,000 MW a year before. In 2002, some 6,868 MW of new capacity were installed worldwide.

European installations grew by 5,467 MW in 2003, according to the European Wind Energy Association (EWEA), bringing total capacity in the European region to 28,706 MW. Europe– and within Europe, Germany, Spain, and Denmark– remains the world's largest wind power market.

American Wind Energy Association

122 C Street, NW, Suite 380 • Washington, DC 20001 • 202.383.2500 voice • 202.383.2505 fax • www.awea.org • windmail@awea.org

E

Dennis Haubenschild: Haubenschild Dairy
Testimony on S.F. 1687 - RES

Members of the committee, I thank you for the opportunity to speak before you this morning.

My name is Dennis Haubenschild; I am a dairy operator and board member of Minnesota Milk Producers. The Haubenschild Dairy has been providing electric power for its dairy and about 80 homes using the anaerobic digester technology for six years. I'm giving this testimony in favor of S.F. No 1687, Public utilities renewable energy standards.
This Bill would build on and enhance the investment already made in sustainable energy. I'm finding that environmental and other benefits are not recognized in the cost of power. This bill would add some teeth to the commodity of renewable energy credit not just a good faith effort.

Thanks to the LCMR funding, Dept of Ag, and the U of M, the state of Minnesota can say they were first to make hydrogen from bio-gas. Hopefully with more help (funding) and research we can start using Minnesota's rural agriculture to move to the Hydrogen economy. Minnesota agriculture will not only be supplying food but also part of the Energy and Electricity. But it takes bills like this to make it happen.
Biogas produced from one day's manure from 100 cows has about the same energy content as 1 barrel of oil. I guess what I'm trying to say is that we have not even begun to use all the renewables that Mother Nature has given us.

I want to thank Senator Ellen Anderson for introducing this bill. It will help keep Minnesota a leader in renewable energy. That way we are not only talking the talk, WE will be also walking the walk.

Thank You
Dennis Haubenschild
7201 349th Ave NW
Princeton, Minnesota 55371

F

Minnesota's Leadership in Renewable Energy

MINNESOTA
DEPARTMENT OF
COMMERCE

December, 2004

The guiding principles of Minnesota's energy policy are:

- Reliability
- Low cost
- Environmentally superior

Renewable energy, especially from wind, has been, is and will become an increasingly important and valued Minnesota energy resource.

- Currently, 11% of electricity Minnesotans use comes from renewable energy.
- At least 20% of Minnesota's electricity will come from renewable energy in 2015.
- This makes Minnesota one of the nation's renewable energy leaders.

Renewable energy provides:

- Significant environmental benefits
  - Currently avoiding over 5 million tons greenhouse gases
  - Currently avoiding over 160 pounds of mercury
  - These environmental benefits will at least double in the next decade
- Community-Based Energy Development (C-BED) that benefits our rural economies
  - Landowners receiving valuable income
  - Local governments getting tax revenue
  - Development of local industries and jobs

While Minnesota's programs and policies of financial support, mandates, renewable objectives, and R&D have been very successful, to expand the state's renewable electricity success and ensure renewable energy's place in the 21st century energy marketplace, the state must address:

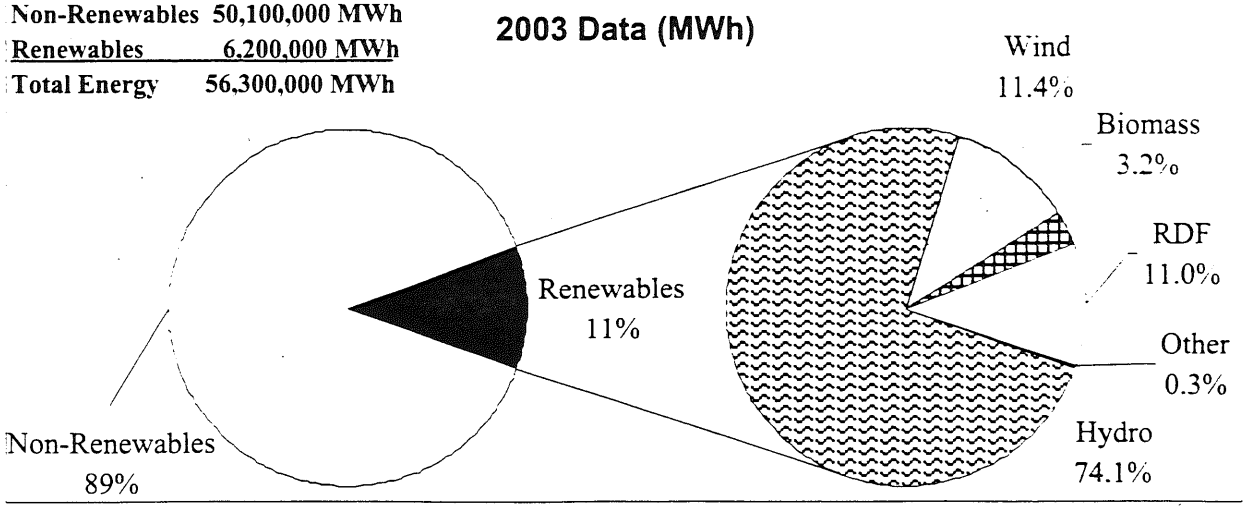
1. Inadequate transmission infrastructure, and
2. Barriers to community-based energy development.

Minnesota can tackle inadequate transmission infrastructure by promoting investment, reducing regulatory barriers and establishing better regional planning.

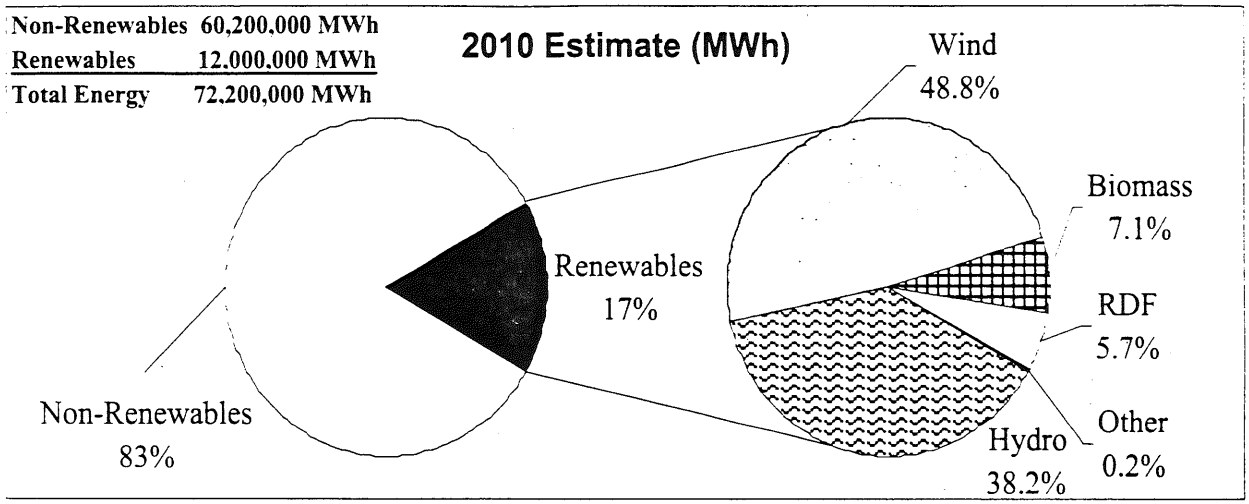
Minnesota can deal with barriers to community-based energy development by supporting transmission access for renewable resources and addressing the high front-end capital costs for community wind developers.

Minnesota's growing use of renewable electricity

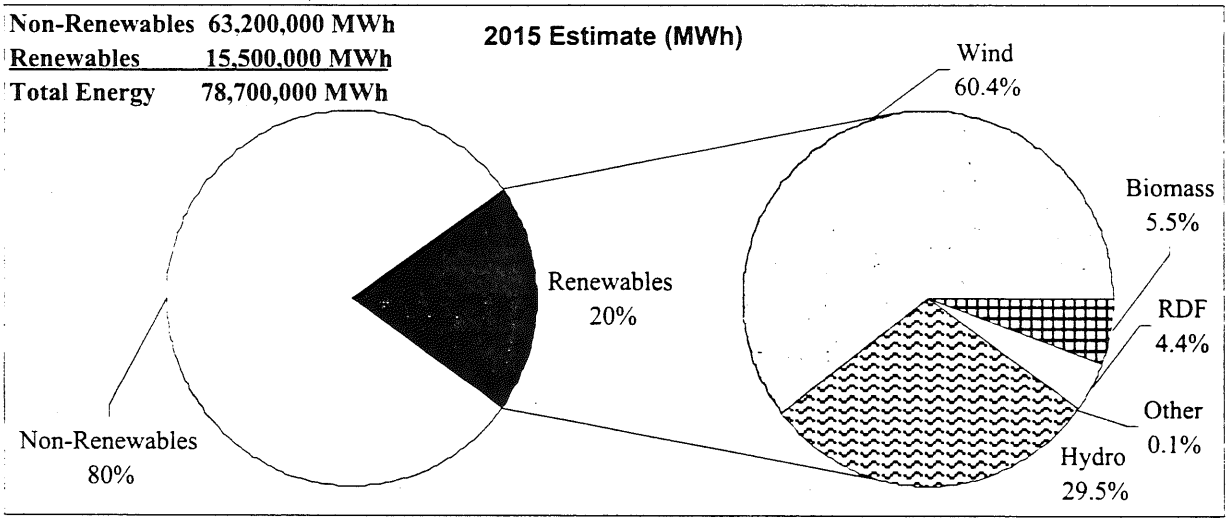
Non-Renewables	50,100,000 MWh
Renewables	6,200,000 MWh
Total Energy	56,300,000 MWh



Non-Renewables	60,200,000 MWh
Renewables	12,000,000 MWh
Total Energy	72,200,000 MWh



Non-Renewables	63,200,000 MWh
Renewables	15,500,000 MWh
Total Energy	78,700,000 MWh



Upgrade the state's transmission system

Sufficient transmission lines are not located in the growing wind-resource areas and what lines exist are being used to full capacity. If the electricity from a renewable generator is prevented from getting to the user, the benefits are lost. Thus, to continue Minnesota's renewable energy leadership we need to upgrade the state's transmission system to address:

- Expansion of transmission capacity and availability
- Delays in interconnection studies & study queues
- Wind energy's integration into the system along with traditional and better understood energy sources.
- Variability studies of wind turbine power output and its impact on grid operation

Ways Minnesota can promote the upgrading of its transmission system are:

- Exempt transmission facilities from a certificate of need as long as those facilities will assist in the development and delivery of electricity from renewable generating facilities.
- Modify the certificate of need requirements for new transmission lines so that grid system benefits and needs are considered and become a priority.
- Permit the Public Utility Commission to give transmission owners and operators cost recovery certainty for investment in new transmission infrastructure that accommodates renewable energy generation.

Strengthen our community-based energy development policies.

Promoting renewable energy development, especially at the local community level, has significant benefits for Minnesota. Unfortunately, there are a number of structural problems that prevent the development of community-based renewable energy facilities. They include:

- Access to the transmission grid;
- Time and expense of the regulatory review process and interconnection studies;
- Availability of accurate wind data; and, perhaps most importantly,
- The high front-end capital costs for small operators;

Ways Minnesota can promote the development of community-based renewable energy facilities include:

- Authorize and direct the Public Utility Commission to develop a cost-neutral tariff that all utilities must provide for small wind developers which provides greater return during the project finance period and lower return after the project is fully paid.
- Create a regional renewable energy tradable credits program. Minnesota is currently leading the development of such a program for the region, with an eye toward potentially linking our regional program with others around the U.S. The creation of a trading program should lead to expanding the market for Minnesota's renewable energy to the region and the rest of the nation.
- Revise the integrated resource planning statutes to further encourage renewable energy generation sources in electric utility long-term planning processes.
- Work with the Midwest Independent System Operator (MISO) to streamline the study processes at MISO to limit study queues and mitigate project delays.
- Work with Minnesota's Congressional delegation and like-minded States to ensure that the federal wind production tax credit is funded on a continuous basis so that wind developers can assume its existence in their financial planning.
- Conduct further studies on:
    - How to accommodate and incorporate wind energy's variability into overall grid energy stability, and
    - Wind availability in more areas of the state at greater heights.

Questions and Background on Renewable Electricity Data

How is renewable energy defined?

The general definition of renewable energy is a source that can replenish itself within one human generation – on the order of 25 years. There is general consistency across states to include wind, solar, hydro and biomass. Some fuels that are considered renewable are waste fuel sources, such as mixed municipal solid waste. Qualifying renewable energy sources vary by state. For example, California and Hawaii include tidal energy and wave energy in their definition, while Pennsylvania includes coal-mine methane and coal waste.

The Department's renewable electricity calculations include all sources deemed renewable under Minnesota law: hydro facilities (including power from Manitoba Hydro), projects developed under Xcel's mandates, green pricing, and other renewable energy in production. As shown at the end of this section, Minnesota Law defines "renewable energy" in various ways (e.g. in the statutes for certificate of need, integrated resource planning, renewable energy objective, distributed generation, and Legislative Electric Energy Task Force). The data in the tables is intended to reflect the broadest definition of "renewable energy." (See page 12 for MN statutes 216B.1691,Subd.1; 216B.2411,Subd.1&2; 216B.2422,Subd.1; 216B.243,Subd.3a; 216C.051,Subd.7)

Where does the data come from?

The data for the 2003 table comes from actual amounts. The data for the 2010 and 2015 tables is derived from estimated amounts of renewable electricity produced in the region dedicated for use by Minnesota consumers. The estimate of future renewable energy is based on a forecast of future sales. The sales forecast comes from a linear trend-line based on historical (1970-2002) aggregate (all utility) data from the regional energy information system (REIS). The estimate is also based on expectations that utilities will fully meet the mandates and objectives currently set out in law.

What geographic areas are included?

Besides being produced in Minnesota, electricity used by Minnesotans is produced throughout the upper Midwest, including North and South Dakota, Iowa, Wisconsin and Manitoba, Canada. The data in the tables identify renewable energy that is known to be used by people in Minnesota; there is likely more renewable energy used in Minnesota that stems from wholesale transactions in the region. A regional trading system, as currently being developed, could help identify those transactions readily.

Why is the data calculated on a MWh basis?

Renewable electricity resources are reported as sales to ultimate consumers for 2003 in MWh as provided by the utilities. This means the Department's electricity figures are based on renewable energy actually being produced. Using figures for energy production rather than energy capacity provides a more appropriate representation of renewable energy since energy production figures:

- show how much renewable energy is actually being produced, rather than a planning number pertaining to the potential to produce energy;
- are consistent with how the Minnesota laws require the state's 10% Renewable Energy Objective be calculated;
- require fewer assumptions about how the facilities will be used in practice, and
- are easier to understand.

Is there a downside to calculating data on a MWh basis?

Basing the figures on energy production rather than capacity of renewable facilities does have some drawbacks. This approach may make comparing Minnesota's renewable electricity numbers to other states awkward, particularly when other states report their data based on the amount or capacity of renewable electricity that could be generated. Using production instead of capacity data may somewhat understate Minnesota's capacity to produce renewable energy since the amount of electricity a facility may actually produce could be lower than its maximum capacity. In addition, production varies over time because of the nature of wind levels or water flows. The best way to address this difference is to be aware of this fact when comparing the numbers.

How are wholesale purchasers handled?

There may be additional wholesale purchases from facilities using renewable fuel that are not explicitly identified. As such, the amount of renewable energy that is consumed by Minnesotans may be slightly understated in the figures.

What is the REO?

The Renewable Energy Objective, passed in 2001 and modified by the legislature in 2003, requires utilities to make a good faith effort to ensure that 10% of their generation mix is renewable by 2015. (See MN statute 216B.1691)

What kinds of renewable energy are Minnesotans expected to use in the future?

By 2015, it is expected that most renewable energy will come from wind resources. Hydro and other resources are also expected to be used.

Why is so much of the future renewable energy assumed to come from wind?

A significant component of wind energy development in Minnesota is the requirement for Xcel energy to develop 1,125 MW of wind by 2010. Moreover, wind energy has emerged as a cost competitive resource.

What effect does the REO have on the expected use of renewable energy in the future?

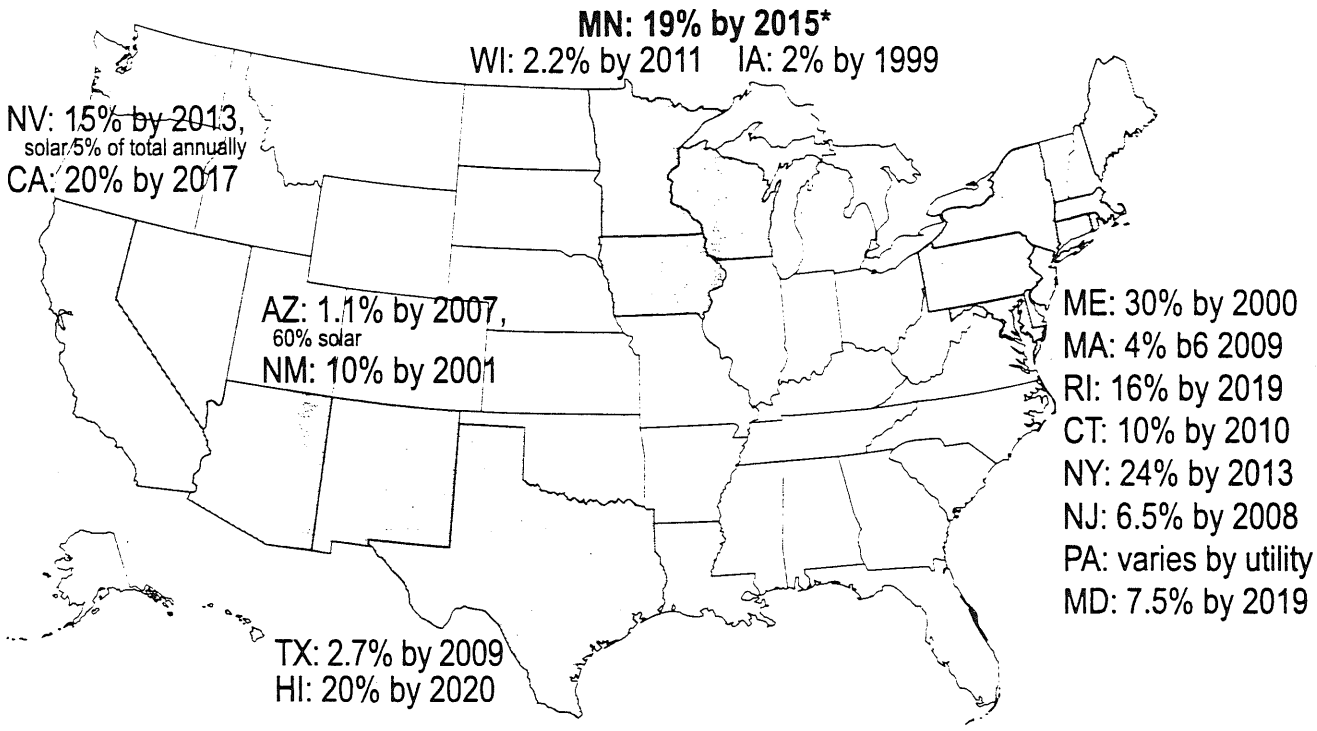
The REO is expected to approximately double the current amount of MWh produced by renewable energy.

Since the Renewable Energy Objective is not a mandate (except for Xcel Energy), why does the Department expect that the levels set in the REO will be fully met?

There are three primary reasons:

1. Commercial-scale wind generation has proven to be a competitively priced energy source. In addition, measures are being taken to make small-scale, community-based wind generation more competitive in the energy marketplace.
2. Resources are currently being devoted to studying the impact of intermittent and variable wind generation on the operation of the electric grid. These studies are focused on finding ways to mitigate or compensate for this variability in order to integrate much larger amounts of wind energy successfully into the system without jeopardizing grid reliability.
3. The REO statute was firmed up during the 2003 Legislative session to allow the creation and development of a renewable energy tracking and trading program which further expands the potential market for renewable energy. Provisions were also put into the REO statute requiring vigorous and active policy compliance oversight, standards for testing compliance and reporting to the legislature on compliance.

Minnesota is among the leading states in electricity generated from renewable *fuels*



*MN has a minimum requirement for one utility, Xcel.

According to the Union of Concerned Scientists: http://www.ucsusa.org/clean_energy/renewable_energy_page.cfm?pageID=47

Minnesota's renewable electricity leadership has significant environmental benefits!

The production of electricity using renewable fuels has and will continue to have significant environmental benefits by replacing coal, the dominant electricity generating fuel. Annually, Minnesota's current 11% renewable electricity generation avoids over 5 million tons of carbon dioxide and 160 pounds of mercury emissions. In 2015, when at least 20% of the state's electricity is from renewable fuels, 12.7 million tons of carbon dioxide and 418 pounds of mercury will be avoided.

	2003 Renewables	Added Renewables	2015 Renewables
MWh	6,195,395	9,337,890	15,533,285
Avoided CO2 tons	5,080,224	7,657,070	12,737,294
Avoided SOx tons	12,391	18,676	31,067
Avoided NOx tons	10,445	17,058	27,503
Avoided Hg lbs	163	255	418

Assumptions:

carbon dioxide: 1640 lbs/MWh
sulfur oxides: 5.98 lbs/MWh
nitrogen oxides: 3.93 lbs/MWh
mercury: 0.0000283 lbs/MWh

Minnesota's renewable electricity leadership has significant economic benefits!

Supplemental Income for Farmers

- Estimated cost per turbine is $1-2 million, depending on size, with a typical life expectancy of 20 - 30 years. Once the turbines are fully paid for, profits to farmers who own and operate one or two turbines can reach $100,000 per year or more, depending on the electricity contract and level of electricity production. Some farmers have contracts with Xcel for 25 years.
- According to the trade organization Windustry, farmers in Southern Minnesota who choose only to lease their land to wind developers receive annually between $2,500 to $5,000 per turbine.
- A 2003 study by the National Wind Coordinating Committee estimated that land owners in Lincoln County, Minnesota, receive total net annual revenue of more than $500,000 from land leased and purchased by wind energy developers.

Job Creation:

- The wind power plant near Lake Benton, Minnesota, is the second largest employer in the town after the school district, according to Windustry. During its construction, Lake Benton I employed approximately 200 people, with 50 full time jobs.
- In Minnesota, a company in the small town of Porter (SMI & Hydraulics) has been building wind turbine towers for the last few years. This is one of the most important segments of the company and it is expected to grow.
- Several hundred people are employed in the wind energy component manufacturing sector just across the Minnesota border at LM Glasfiber (a wind turbine blade manufacturer in Grand Forks) and DMI Industries (a tower manufacturer in West Fargo). As the wind industry continues to grow it is anticipated that wind energy companies will seek to bring additional manufacturing facilities to the Midwest. In addition, existing companies will develop new products to serve the wind industry.

Business Development

- Several companies have been created in Minnesota to support the wind power industry. Among them, a company called Minwind, initially formed by a group of nearly 70 farmers who have built four wind turbines. Minwind is in the process of building seven more large wind turbines. There are now more than 200 farmers involved.
- Following President Bush's signing of the PTC bill in September of 2004, Great River Energy, Minnesota's second largest utility, announced plans to purchase the output of a 100-megawatt wind project in southwestern Minnesota. The project is scheduled to deliver energy to Great River Energy in 2005 to meet a portion of the energy needs of 29,000 cooperative members and fulfill part of Great River Energy's Renewable Energy Objective.

Increased Tax Revenues

- According to Windustry, property payments from wind power projects generally range from one to three percent of the project's value.
- Lincoln and Pipestone counties have received substantial tax revenues from the wind power projects in Buffalo Ridge. The counties received approximately $1.2 million in tax revenues in 2000.
- An article by Windustry indicated that laws passed in 2002 make it possible for a 100-megawatt wind plant to generate approximately $370,000 in annual tax revenue for the duration of the project.

Minnesota policies and programs promote the generation of electricity from renewable fuels

Minnesota's renewable electricity leadership stems from three types of very successful programs and policies designed to promote the generation of electricity from renewable fuels:

1. Financial support
2. Mandates, Requirements and Objectives
3. Research and Development of renewable technologies.

Financial Support

- State wind production incentive payment of $0.015/kWh - limited to projects with less than 2MW of nameplate capacity with a program limit of 200 MW.
- Federal Production Tax Incentive $0.015/kWh tax incentive adjusted for inflation (currently $0.018/kWh).
- Accelerated depreciation
- LCMR Community wind rebates (2 active @ $150,000; 2 anticipated @ $200,000)
- Net metering (retail & average retail rates) for sub 40 kW systems
- Low-interest loan programs available to farmers developing renewable energy projects through the MN Department of Agriculture's Rural Finance Authority
- State sales tax exemption (Wind & Photovoltaics)
- State property tax exemption
- State production tax exemption for projects sited in Job Opportunity Building Zones (JOBZ).
- Xcel Renewable Development Fund
- MN Public utilities that have met their renewable energy objectives may spend 5 percent of CIP funds to construct renewable energy electric generation facilities.
- Green Power Premiums
- Federal Renewable Energy Production Incentive (REPI) - annually appropriated payment program (versus tax incentive) that mirrors federal PTC for non-taxable entities (Note: currently unavailable for new projects)
- USDA 9006 funding (competitive) - $23 million FY04; MN has been successful at receiving significant portion in both years offered
- USDA Value Added Grant Program - $13.2 million FY04

Mandates, Requirements and Objectives

- **Wind**: Xcel is required to acquire 1,125 MW of wind capacity (425, 400, 300 MW increments). At least 100 MW must consist of projects with nameplate capacities 2 MW or less.
- **Biomass:** Xcel energy is required to acquire 110 MW of biomass capacity
- **Renewable Energy Objective:** Utilities (IOU, G&T Cooperatives, and municipal power agencies) must make a "good faith effort" to generate or purchase electricity from renewable resources to account for 1 percent of total sales in 2005, and 10 percent by 2015. Xcel energy is required to meet this objective.
- **Integrated Resource Planning:** The Public Utilities Commission is prohibited from approving a new or refurbished nonrenewable energy facility unless the utility has demonstrated that a renewable energy facility is not in the public interest.

Minnesota policies and programs continued:

Research

- Approximately $20 million for the establishment of the Initiative for Renewable Energy and the Environment (IREE) to develop bio-based and other renewable resources and processes.
- Xcel Energy must contribute $16 million annually to fund renewable energy research and development through the Renewable Development Fund.
- The Department of Commerce Wind Resource Assessment Project has collected data from monitoring towers and existing wind turbines since 1982. This data is provided to potential wind energy developers and used to develop GIS-based maps of the state's wind resource.

Statutory Definitions of Renewable Energy

216B.1691 Renewable energy objectives.

Subdivision 1. **Definitions.** (a) Unless otherwise specified in law, "eligible energy technology" means an energy technology that: (1) generates electricity from the following **renewable** energy sources: solar; wind; hydroelectric with a capacity of less than 60 megawatts; hydrogen, provided that after January 1, 2010, the hydrogen must be generated from the resources listed in this clause; or biomass, which includes an energy recovery facility used to capture the heat value of mixed municipal solid waste or refuse-derived fuel from mixed municipal solid waste as a primary fuel;

216B.2411 Distributed energy resources.

Subdivision 1. **Generation projects.** (a) Any municipality or rural electric association providing electric service and subject to section 216B.241 that is meeting the objectives under section 216B.1691 may, and each public utility may, use five percent of the total amount to be spent on energy conservation improvements under section 216B.241, on: (1) projects in Minnesota to construct an electric generating facility that utilizes eligible **renewable** energy sources as defined in subdivision 2, such as methane or other combustible gases derived from the processing of plant or animal wastes, biomass fuels such as short-rotation woody or fibrous agricultural crops, or other **renewable** fuel, as its primary fuel source...

Subd. 2. **Definitions.** (a) For the purposes of this section, the terms defined in this subdivision and section 216B.241, subdivision 1, have the meanings given them. (b) "Eligible **renewable** energy sources" means fuels and technologies to generate electricity through the use of any of the resources listed in section 216B.1691, subdivision 1, paragraph (a), clause (1), except that the term "biomass" has the meaning provided under paragraph (c). (c) "Biomass" includes: (1) methane or other combustible gases derived from the processing of plant or animal material; (2) alternative fuels derived from soybean and other agricultural plant oils or animal fats; (3) combustion of barley hulls, corn, soy-based products, or other agricultural products; (4) wood residue from the wood products industry in Minnesota or other wood products such as short-rotation woody or fibrous agricultural crops; and (5) landfill gas, mixed municipal solid waste, and refuse-derived fuel from mixed municipal solid waste.

216B.2422 Resource planning; renewable energy.

Subdivision 1. **Definitions.** (a) For purposes of this section, the terms defined in this subdivision have the meanings given them.

(c) "**Renewable** energy" means electricity generated through use of any of the following resources:
(1) wind;
(2) solar;
(3) geothermal;
(4) hydro;
(5) trees or other vegetation; or
(6) landfill gas.

216B.243 Certificate of need for large energy facility.

Subd. 3a. **Use of renewable resource.** The commission may not issue a certificate of need under this section for a large energy facility that generates electric power by means of a nonrenewable energy source, or that transmits electric power generated by means of a nonrenewable energy source, unless the applicant for the certificate has demonstrated to the commission's satisfaction that it has explored the possibility of generating power by means of renewable energy sources and has demonstrated that the alternative selected is less expensive (including environmental costs) than power generated by a renewable energy source. For purposes of this subdivision, "**renewable** energy source" includes hydro, wind, solar, and geothermal energy and the use of trees or other vegetation as fuel.

216C.051 Legislative Electric Energy Task Force.

Subd. 7. Guidelines; preferred electric generation sources; definitions.

(c) The following energy sources for generating electric power distributed in the state, listed in their descending order of preference, based on minimizing long-term negative environmental, social, and economic burdens imposed by the specific energy sources, are: (1) wind and solar; (2) biomass and low-head or refurbished hydropower; (3) decomposition gases produced by solid waste management facilities, natural gas-fired cogeneration, and waste materials or byproducts combined with natural gas;

(f) For the purposes of this section, "preferred" or "**renewable**" energy sources are those described in paragraph (c), clauses (1) to (3), and "subordinate" or "traditional" energy sources are those described in paragraph (c), clauses (4) and (5).

MINNESOTA CHAMBER
of Commerce
THE VOICE OF BUSINESS℠

March 21, 2005

Energy Policy Priorities
2005 Legislative Session

The Minnesota Chamber's energy policy priority for the 2005 session is to pass legislation that will lead to improvements in our transmission system. We say this with some reluctance. On one hand we understand the need to make these improvements, but we are also painfully aware of the rising cost of electricity to our members and to customers in general. Consider the following:

- Recent legislative changes have added costs to the system, including the Metro Emissions Reduction Program (MERP) settlement and 2003 Prairie Island legislation. More specifically, re-powering three metro-area coal plants will trigger rate increases for all Xcel customers starting in 2006 and peaking in 2009 at 5.5%;
- In 2010, accommodating 15% wind generation on the Xcel system is estimated to add $2,000 to the annual energy bill for an average grocery store, $21,000 for a midsized manufacturer and more than $200,000 for a large industrial customer.
- Every utility is required to make a "good faith effort" to generate at least 10% of its electricity using renewable technologies. This will result in higher customer costs, even as utilities do their best to minimize financial impact.
- Xcel Energy and other utilities are expected to file for a general rate increase in the next 12-24 months; and,
- Through Minnesota's "fuel adjustment clause," utilities are passing the rising cost of natural gas along to customers.

Each item has increased or will increase the cost of electricity in Minnesota. One result is that our energy rates, on average, are less competitive than they were in 1990. For example, in 1990, Minnesota ranked 15thth overall in residential rates. Today we are 20th. Our U.S. ranking in the industrial sector was 14th overall in 1990. Today we are ranked 22nd.

Transmission System Improvements

This session, two specific proposals are in front of the Legislature that address the need for Minnesota to expand and improve its aging electric transmission system.

The CapX 2020 ("Capital Expenditures by the Year 2020") proposal, HF 1347 (Gunther, R-Fairmont) and SF 1332 (Anderson, DFL-St. Paul), is designed to create incentives to expand and upgrade the state's transmission system. This bill allows electric utilities that invest in transmission infrastructure to ask the Public Utilities Commission (PUC) for permission—outside of a rate case—to earn on their investment.

Another bill, the "Wind on the Wires" proposal (HF 1517 – Gunther, R-Fairmont, SF 1502 – Anderson, DFL-St. Paul), attempts to require new transmission infrastructure to carry electricity generated "primarily from renewable sources of energy to Minnesota retail customers." The

(over)

Chamber is concerned about the impracticality of dedicating new transmission infrastructure to electrons generated from a specific source.

Representing business customers, the Minnesota Chamber wants to make sure that any process for recovering the cost of building transmission infrastructure gives customers the full opportunity to comment on and negotiate all aspects of a utility's proposal. We want the PUC to have the ability to accept, reject or modify any or all aspects of any proposal. One potential model for this process is the MERP statute (Minn. Stat. 216B.1692.)

Renewable Energy

The Minnesota Chamber of Commerce supports the promotion and development of more renewable energy in Minnesota, under three conditions:

- Any increase in the use of renewable energy technology must not compromise reliability;
- Any use of renewable technology must not increase electricity rates more than they would using any other technology; and,
- There should be no additional mandates regarding the use of renewable energy technology.

Current law requires utilities to make a "good faith effort" to reach 10% renewable energy by 2015. The PUC has defined "good faith effort" and utilities are already working to meet this objective. The Minnesota Chamber believes this approach is superior to a mandate (SF 1687 – Anderson, DFL-St. Paul/HF 1798 – Peterson, DFL-Madison) because it adds flexibility to the system statewide, giving us our best opportunity to increase renewable energy without compromising reliability and at the lowest cost to consumers.

Minnesota's situation is very different from the vast majority of states that have implemented renewable mandates. Of the 17 states (plus Washington, DC) that currently have renewable energy mandates, 13 also allow customers to buy their electricity in a competitive market. In the context of a competitive market, customers have the ability to shop among competitors, helping to minimize the cost of renewable energy. There does not seem to be any inclination to move toward a competitive market structure in Minnesota; therefore, a mandate would almost certainly raise customers' costs.