

## SECTION C: NEED FOR FACILITY

1. An analysis of the need for the proposed facility based on present and projected demand for the product or products to be produced by the proposed facility, including the most recent system studies supporting the analysis of the need.
  - a. Wind energy contributes to your energy security: an inexhaustible, domestic resource, it helps reduce our dependence on imports of natural gas (for electricity generation and residential use), oil and other fuels, often from unstable countries like Nigeria and Russia. The US currently burns about 13 billion cubic feet per day (Bcf/day) of natural gas for electricity generation. During 2007, wind power will be reducing natural gas use for power generation by approximately 5%. Wind energy offsets other, more polluting sourced of energy. This is important because electricity generation is the largest industrial source of air pollution in the U.S. When Wind projects generate electricity, fuel at other power plants is not consumed. Wind energy's most important environmental benefit is its lack of emissions of both air pollutants and greenhouse gases when compared with alternative methods of generating electricity.
    - To generate the same amount of electricity as today's U.S. wind turbine fleet (16,818 MW) would require burning 23 million tons of coal ( a line of 10-ton trucks over 9,000 miles long) or 75 million barrels of oil each year.
    - Wind Power requires no mining, drilling, transportation of fuel, or water usage, and does not generate radioactive or other hazardous or polluting waste.
    - A study by the Midwest Independent System Operator (ISO) showed that 16,000 MW of additional wind capacity would avoid 43 million tons of CO<sub>2</sub> or approximately 1,300 pounds of CO<sub>2</sub> for every megawatt-hour of wind generation.<sup>4</sup>
    - In 2007, an analysis from global energy consulting firm Wood Mackenzie found that providing 15% electricity from renewable energy resources by 2020 (although a Federal renewable electric standard) could lower consumer expenditures by nearly \$100 billion, reducing both natural gas prices and electricity prices. <sup>2</sup>

2. The impact of a Federal Renewable Portfolio Standard, Wood Mackenzie (Feb 2007)

4. Transmission Expansion Plan, Vision Exploratory Study, Midwest ISO (2006) <http://www.midwestiso.org/page/Expansion+Planning>



## REPOWERING THE MIDWEST:

### THE CLEAN ENERGY DEVELOPMENT PLAN FOR THE HEARTLAND

#### THE 21<sup>ST</sup> CENTURY OPPORTUNITIES FOR CLEAN ENERGY

North Dakota needs a strategic clean energy development plan that implements smart policies and practices to capture readily achievable environmental, public health and economic development benefits. This sustainable development strategy is good for the environment and the economy. The Clean Energy Development Plan proposes policies to implement underutilized energy efficiency technologies and to aggressively develop renewable energy resources. By diversifying its power supply, North Dakota will reduce pollution, improve electricity reliability, create new "green" manufacturing and installation jobs, and provide renewable energy "cash crops" for farmers. The Clean Energy Development Plan provides the strategies to achieve these goals.

#### THE CLEAN ENERGY DEVELOPMENT PLAN

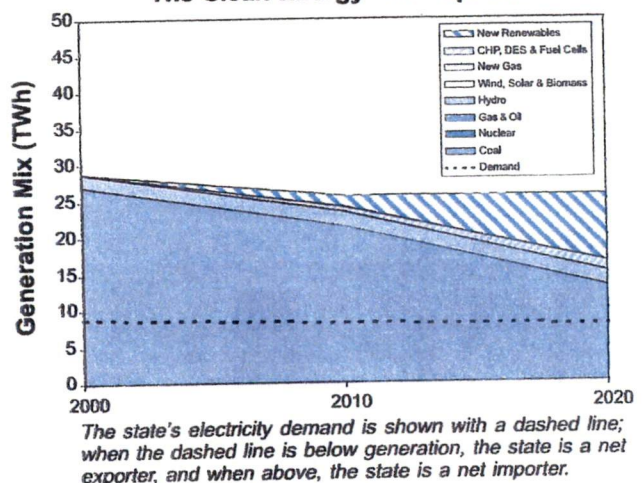
North Dakota should seize the opportunity to develop its clean energy resources: modern energy efficiency technologies and wind, biomass and solar power. The Clean Energy Development Plan achieves large environmental, public health and economic development benefits with only modest increases in cost. Moreover, investing in energy efficiency and renewable energy will diversify the region's electricity portfolio, thereby improving reliability. The Clean Energy Development Plan:

1. Aggressively implements the newest, as well as "tried and true," energy efficiency technologies.
2. Develops and implements renewable energy technologies – wind, biomass and solar power – so that they provide eight percent of the region's electricity generation by 2010 and 22 percent by 2020.
3. Develops and implements efficient natural gas uses in appropriate locations, especially combined heat and power (CHP), district energy systems and fuel cells, so that they provide 10 percent of the region's electricity generation by 2010 and 25 percent by 2020.
4. Retires selected older, less efficient and highly polluting coal plants.
5. Applies sustainable development strategies to aggressively link environmental improvement policies to economic development.

As Figure 1 shows, implementing the Clean Energy Development Plan in North Dakota means:

1. Energy efficiency measures reduce electricity demand, and therefore the need for generation.
2. Generation from renewable resources and efficient natural gas increases.
3. Generation from older, less efficient and highly polluting coal plants decreases.

Figure 1. Sources of Electricity Generation: The Clean Energy Development Plan



#### IMPLEMENTING THE CLEAN ENERGY DEVELOPMENT PLAN IN NORTH DAKOTA WILL ALSO PRODUCE:

1. Dramatic improvements in environmental quality by 2020, compared to business-as-usual practices, by reducing: sulfur dioxide (SO<sub>2</sub>) pollution, which causes acid rain, by 53 percent; nitrogen oxides (NO<sub>x</sub>) pollution, which causes smog, by 53 percent; and carbon dioxide (CO<sub>2</sub>) pollution, which causes global warming, by 48 percent.
2. Improved electricity reliability thanks to a diversified power portfolio.
3. Economic development and job growth through wind power "cash crops" for farmers and clean energy exports, increased business for energy efficiency and renewable energy manufacturers, and new skilled jobs in installation and maintenance of this equipment.

#### REAPING ENERGY EFFICIENCY OPPORTUNITIES

North Dakota has an opportunity to use energy in smarter, more efficient ways, thereby reducing pollution, saving money and creating jobs. This will produce the benefits summarized on the following page.

Harnessing clean energy improves the environment and spurs economic growth.

## HELP REPOWER NORTH DAKOTA!

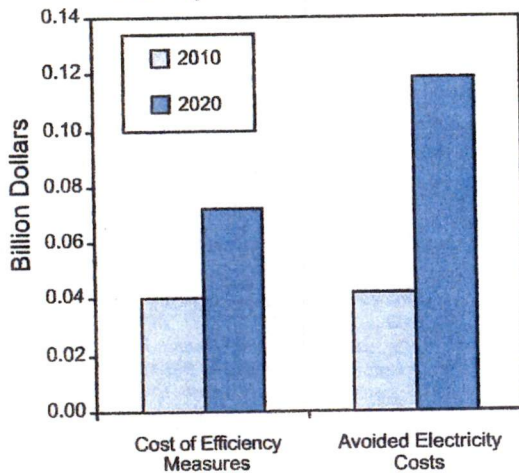
For more information and resources to develop North Dakota's clean energy options, visit [www.repowermidwest.org](http://www.repowermidwest.org) or contact Environmental Law & Policy Center of the Midwest, 35 East Wacker Drive, Suite 1300, Chicago, IL 60601, tel: 312-673-6500.

1. Reduces net electricity costs by \$46 million by 2020.
2. Saves 3,064 GWh of electricity – equal to about one large power plant – by 2020.
3. Reduces electricity demand 17 percent by 2010 and 28 percent by 2020.
4. Costs less – at an average cost of 2.4¢/kWh – than generating, transmitting and distributing electricity.

renewable resources face. The key policy actions for achieving the Clean Energy Development Plan in North Dakota are to:

1. Establish an Energy Efficiency Investment Fund to support energy efficiency initiatives with a non-bypassable charge of 0.3¢/kWh.
2. Manage the Energy Efficiency Investment Fund by an independent third-party administrator overseen by a board composed of regulators, state energy offices, and consumer, efficiency and environmental advocates.
3. Evaluate and update North Dakota's efficiency standards and building codes. Establish or reinforce monitoring and enforcement practices.
4. Establish a North Dakota Renewables Portfolio Standard requiring all retail electricity sellers to provide eight percent of their electricity from renewable resources by 2010 and 20 percent by 2020.
5. Establish a Renewable Energy Investment Fund to support emerging renewable technologies with a non-bypassable charge of at least 0.1¢/kWh.
6. Ensure that transmission pricing policies and power pooling practices treat renewable resources fairly and account for their intermittent nature, remote locations, or smaller scale.
7. Remove the barriers to clean distributed generation by: (1) applying net metering policies to all wind and photovoltaics; (2) establishing standard business and interconnection terms; (3) establishing uniform safety and power quality standards to facilitate safe and economic interconnection to the electricity system; and (4) applying clean air standards to small distributed generation sources, thereby promoting clean power technologies and discouraging highly polluting diesel generators.

**Figure 2. Benefits from Energy Efficiency Investments: The Clean Energy Development Plan**



## DEPLOYING RENEWABLE RESOURCES AND EFFICIENT GENERATION

North Dakota has a tremendous opportunity to harness its abundant wind resources, which offer environmental benefits, improved reliability, and economic development in the growing renewable energy business sector. North Dakota can also develop efficient generators, such as CHP and district energy systems. Together, the opportunities shown in Figure 3 could supply 14 percent of North Dakota's generation capacity by 2010 and 35 percent by 2020.

The Clean Energy Development Plan's benefits can be achieved at a modest cost, as energy efficiency savings offset the cost of new generation. In North Dakota, it would increase overall electricity costs by only 1.5 percent in 2010 and 3.4 percent in 2020.

## 21<sup>ST</sup> CENTURY POLICIES FOR MODERN TECHNOLOGIES

Smart policies can overcome the many market and regulatory barriers that energy efficiency and

**Figure 3: New Generation Resources in the Clean Energy Development Plan**

Generator Type	2010 New Capacity (MW)	2020 Cumulative New Capacity (MW)
Wind Turbines	750	2,550
CHP – Biomass	0	4
Biomass - Co-Firing	0	0
Photovoltaics	1	4
Biomass Gasification	0	0
Eff. Natural Gas Gen.*	79	180
<b>Total</b>	<b>830</b>	<b>2,738</b>

\*Includes CHP (natural gas), district energy systems, and fuel cells.





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## **NEWS FROM WESTERN AREA POWER ADMINISTRATION**

### **CUSTOMERS OFFER ADDED POWER TO OFFSET DROUGHT IMPACT**

LAKEWOOD, Colo.—While the drought continues to draw down hydropower resources in the West, Omaha Public Power District is stepping up by supplying Western an additional 50 megawatts to the grid for the next five years beginning October 1, 2008. Western also negotiated a short term contract for 25 MW from April 1, 2008 to September 30, 2008.

Western Area Power Administration, a Federal agency under the Department of Energy, received 15 proposals—including OPPD's—in response to a request for 200 megawatts of additional power to help offset the shortage of hydropower from dams on the Missouri River.

"Due to the extended drought, Western has been purchasing a considerable amount of power in order to meet its commitments to firm power customers," explained Jody Sundsted, Western's Upper Great Plains Power Marketing manager.

Additionally, Western selected two wind developer proposals for further negotiation, including:

- **Just Wind**—which plans to have its Napoleon, N.D., wind farm in service in 2009
- **Iberdrola Renewables (formerly PPM Energy)**—which plans to have a South Dakota wind farm in service by 2010 and a second one in service by 2010.

"The mid-term purchase of power from OPPD, and potential purchases from Just Wind and PPM Energy, will help mitigate the impact of purchase power costs on our firm power rate," said Sundsted. "The power purchased through this process makes economic sense for our ratepayers."

Both Just Wind's and PPM Energy's proposals include Renewable Energy Certificates—or "green tags"—the intangible environmental benefits associated with generating one megawatt-hour of electric energy by a renewable resource. Renewable energy producers can sell the credits, as well as the power itself, to offset the difference between the cost of the renewable power and power from fossil energy sources.

"We were pleased to receive competitive proposals from renewable energy developers as part of the process," said Sundsted.

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Western Area Power Administration annually markets and transmits more than 10,000 megawatts of power from hydroelectric powerplants owned and operated by the Bureau of Reclamation and the U.S. Army Corps of Engineers in 15 western and central states. It is part of the Department of Energy.

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*Serving the West with Federal hydropower*

