
EXECUTIVE SUMMARY

We stand at a crossroads in North Dakota's and our nation's energy path. By further building our agriculture, energy and technology sectors, and with the right policies and tools in place, North Dakota can dominate the renewable and low-carbon energy economy of the future. In addition to being ranked first in the US in potential for wind energy and perennial grass biomass production, North Dakota's existing ethanol and biodiesel production, strong research capability within its universities, and potential in emerging renewable resources such as hydrogen and advanced geothermal places the state in a position of great advantage.

Strategic decisions are necessary:

- We face profound economic uncertainty;
- We continue to import almost two-thirds of our oil from foreign countries and experienced the recent shock of \$4 dollar gasoline;
- A new administration is coming to Washington with priorities to reduce greenhouse gas emissions, expand energy efficiency and renewables, and deploy advanced coal technologies; and
- North Dakota has a record state budget surplus.

In short, we have a once-in-a-generation opportunity to foster wealth and job creation in North Dakota, while helping the nation to become more energy independent and to steward the global environment. However, this will require assertive leadership and action. Neighboring states and the Midwest region are taking aggressive steps to develop renewable resources and increase energy efficiency. North Dakota needs to follow suit and capitalize on our many advantages, while overcoming our geographic isolation from major North American energy markets.

The North Dakota Alliance for Renewable Energy (NDARE) presents this report and policy recommendations as priorities for the 2009 legislative session and beyond and to invite broader dialogue about North Dakota's energy future. The recommendations reflect the consensus of NDARE members and are intended for anyone interested in energy policy, education, research and development. The report's chapters also include further background information for NDARE sector groups: energy efficiency, wind, ethanol, biodiesel, biomass and carbon.

NDARE is a membership organization dedicated to making North Dakota the preeminent state for the production and use of renewable energy and the practice of energy efficiency. NDARE comprises representatives from commodity groups, farm organizations, investor-owned utilities, rural electric cooperatives, state agencies, economic development groups, universities, banks, manufacturers, and conservation and environmental organizations. Partnerships among these stakeholders are central to NDARE's approach.

NDARE would like to thank the Energy Foundation for its generous support of this report and the Consensus Council for its assistance in facilitating meetings of NDARE members through which these recommendations were developed.

[NDARE Policy Background Document](#)



NDARE GOALS

- Secure and expand state funding for renewable energy and energy efficiency
- Enhance the production, availability, distribution and use of biofuels in North Dakota
- Achieve significant increases in energy efficiency in North Dakota
- Develop a state policy framework to manage CO2
- Invest a portion of the general fund surplus into commercial scale application of next generation energy technologies in which North Dakota has a comparative advantage and that benefit the state
- Protect the wind rights and other interests of landowners and the commercial rights of project developers and owners
- Foster development of enhanced geothermal energy in North Dakota.
- Maximize retention of wealth in communities created by and through renewable energy and efficiency projects

NDARE GOALS

Secure and expand state funding for renewable energy and energy efficiency by:

- Sustaining Governor Hoeven's recommendation of \$3 million in funding for the Renewable Energy Council and \$2 million for the Biomass Energy Grant Program through state general fund appropriations; and
- Dedicating \$8 million over the next biennium from the Resources Trust Fund (RTF) for renewable energy and efficiency projects and activities. The fund, approved by voters as a constitutional amendment in 1990, is formally dedicated to both water projects and energy conservation and efficiency. Yet, to date, no RTF dollars have been used for energy conservation, renewable energy, or waste products utilization projects. NDARE members appreciate the contribution of water projects to our state's well-being, but they also recognize the importance of energy efficiency and renewable energy to our state's economy and believe the RTF should serve both purposes. We recommend investment over the next biennium for a range of purposes, including:
 - ND Weatherization Assistance Program;
 - Renewable Energy Grant Program;
 - Public School Energy Efficiency Grants;
 - Energy Efficiency Education Program; and a new
 - Office of Renewable Power Export Marketing.

Note: All funds would be issued through the ND State Industrial Commission and administered by the ND Dept. of Commerce – Office of Renewable Energy & Energy Efficiency or other state agencies.

Enhance the production, availability, distribution and use of biofuels in North Dakota by:

- Fostering the development of next generation biofuels, including the agricultural and native feedstocks needed to produce cellulosic fuels;
- Creating counter-cyclical production incentives for biodiesel;
- Continuing the counter-cyclical production incentives for ethanol;
- Strategically building and locating renewable fuel infrastructure throughout the state, including blender pumps;
- Supporting a 10 percent ethanol and 5 percent biodiesel blend requirement for all fuels at retail; and
- Identifying and acting upon local and regional economic development opportunities to grow North Dakota's economic base, while working to stabilize production agriculture and our rural communities.

RESOURCES TRUST FUND PROJECTS

ND Weatherization Assistance Program

With fluctuation in federal funding levels, significant and continuing contribution to the program would result in a greater efficiency level for the low-income homes served and possibly broaden participation.

Renewable Energy Grant Program

Providing matching grant dollars for renewable energy demonstration and deployment projects and energy efficiency initiatives throughout the state.

Public School Energy Efficiency Grants

Providing matching dollars to fund school energy analyses/audits and for energy efficiency measures having payback periods of twelve years or less.

Energy Efficiency Education Program

Development and maintenance of a program to assist the public with current information on energy efficiency issues related to residential and commercial buildings, farm and ranch operations, and transportation.

Office of Renewable Power Export Marketing

To aggressively market North Dakota's renewable energy resources and explore large-scale export opportunities, including the potential for game-changing transmission and technology.

Achieve significant increases in energy efficiency in North Dakota, through:

- Supporting the “30 percent solution” proposal for a 30 percent increase in energy efficiency requirements over the International Energy Conservation Code (IECC) of 2006;
- Requiring minimum certification of Leadership in Energy and Environmental Design (LEED) Silver or an equivalent standard for new or remodeled public buildings in North Dakota. A certain threshold of remodeling would be necessary to trigger the requirement;
- Adopting Energy Star or equivalent programs for appliances, equipment and non-building items to be accomplished by:
 - Ensuring that the State of North Dakota, through its procurement activities, purchases Energy Star conforming appliances and equipment; and
 - Launching an Energy Star Challenge, with cities competing for the title of “Energy Star City.”
- Ensuring utility rate recovery for expanded energy efficiency programs and investments;
- Changing the North Dakota tax code, with regard to depreciation schedules and use of the short form for tax credits for renewable energy and efficiency development. Currently, there is discussion in the legislature to go to a single form in ND; and
- Programs that encourage consumers to change their energy consumption behavior in order to use less energy.

Develop a state policy framework to manage CO₂ by:

- Establishing a state Agricultural Sequestration Advisory Council to foster increased participation by agriculture producers in the growing market for providing agricultural carbon offsets such as no-till agriculture, conservation tillage, rotational grazing, etc.;
- North Dakota joining over 40 other U.S. states as a member of The Climate Registry, a voluntary, third-party registry to track and account for greenhouse gas emissions and reduction activities. This will help industry in the state to receive credit for early action in a future federal CO₂ regulatory program;
- North Dakota becoming an “observer” to the Midwestern Greenhouse Gas Reduction Accord, meaning that North Dakota would have official input into the design elements of a regional emissions cap and trading program, but not be bound by the program or its commitments; and
- North Dakota participating in the implementation of a low-carbon fuel standard that is currently under development through the Midwestern Governors Association and the North Central Bioeconomy Consortium.



A 20 percent increase in efficiency by 2020 would yield \$53 billion in net economic benefits for consumers and businesses while accounting for approximately 1.8 trillion gallons of water savings from 2005-2020.

Source: Western Governors Association

North Dakota farmers received \$2 million in carbon payments in 2007 and \$4 million in 2008.

Source: North Dakota Farmers Union Carbon Credit Program

Invest a portion of our state's general fund surplus into a commercial scale application of next generation energy technologies in which we have a comparative advantage and that benefit will benefit North Dakota, such as:

- In-place applications of wind energy that do not require the development of new transmission capacity;
- Wind-energy storage technologies, including the use of hydrogen;
- Cellulosic biomass conversion, including perennial grass and agricultural residue feedstocks; and
- Lignite coal-based energy production with CO2 capture and storage.

North Dakota's universities lead in the research and development of innovative technologies that offer alternative energy options for the nation and the world. The development of these technologies is the first step in creating a new energy future, but progress cannot stop there. Stimulation of commercial-scale, ready-for-market alternative energy development is the next step toward energy independence. However, too often, research and development efforts demonstrate the viability of important new energy technologies, but then public policy stops short of ensuring commercial-scale application and deployment of those technologies. North Dakota is in a prime position to maximize our world class potential in several energy resources by assisting with technologies that have been developed but have yet to become full-fledged industries unto themselves.



North Dakota is poised to be a model for America in the development of innovative, long-term resources to meet our nation's growing demand for energy in a clean, environmentally friendly, and sustainable way.

Source: EMPOWER Commission report, 2008

Wind Energy to Hydrogen to Anhydrous Ammonia Pilot Project

Hydrogen produced from wind energy is touted as the energy carrier of the future and is the main future transportation fuel emphasis of the US Department of Energy. The State of Minnesota is also home to several major companies that are developing hydrogen related technologies and core capacities in fuel cell manufacturing.

One of the most profound uses of wind energy and perhaps the ideal bridge technology to a hydrogen economy in Minnesota could be the production of anhydrous ammonia. Anhydrous ammonia has many applications but the most important use is as nitrogen fertilizer. Over \$300 million of anhydrous ammonia is used as nitrogen fertilizer in Minnesota agriculture and the accompanying infrastructure is already in place. In the proposed pilot project, local resources of wind energy, water, and air would replace natural gas as the core ingredients in the local production of nitrogen fertilizer. This pilot project could provide the following benefits:

1. Open a new market for an estimated 2,000 megawatts of nameplate wind capacity within the state, stimulating wind energy development in Minnesota.
2. Diminish the need for additional transmission capacity to accommodate wind energy.
3. Enable utility companies to manage the variable nature of wind energy and electrical demand.
4. Provide substantial economic development opportunities for farmers and rural communities.
5. Firmly establish Minnesota as the world leader in renewable hydrogen production and wind energy.
6. Create a solid foundation from which to grow Minnesota manufacturing companies and attract complementary hydrogen related industry.¹

Protect the wind rights and interests of landowners and the commercial rights of wind energy project developers and owners by:

- Providing state information about wind lease/easement contract terms to promote transparency and disclosure and support greater public education relative to such contracts;
- The Public Service Commission developing a contracting “code of conduct” for wind energy developers who would then be required to notify landowners whether or not they have agreed to adhere to the code of conduct; and
- Requiring the Public Service Commission (PSC) to develop rules governing the siting of wind turbines relative to wind rights and property boundaries. Legislation should not define specific requirements for rules, but rather task the PSC to develop them according to a normal rule-making process that provides for public input from all affected parties to ensure that rules have the needed flexibility to accommodate a range of circumstances.

Although the wind industry is growing quickly in North Dakota, the state has yet to establish an adequate regulatory framework for companies and landowners to operate under that safeguards the rights and needs of both parties. This being the case, North Dakota faces a number of challenges in developing the industry in a manner that maximizes economic benefits, preserves property and commercial rights, and addresses other public concerns. Sustaining landowner and public support for wind energy and projects is essential to developing a healthy wind industry in North Dakota.

Foster the development of enhanced geothermal energy in North Dakota by:

- Commissioning a feasibility study through the Industrial Commission or an appropriate state agency.
- Undertaking a legislative study through an interim committee to enable a public hearing process on the development of enhanced geothermal.
- The Great Plains Energy Corridor hosting an energy summit related specifically to enhanced geothermal.
- Engaging experts and policy-makers from Australia in the above activities in order to learn from their experience.

Maximize retention of wealth in communities created by and through renewable energy and efficiency projects.

- North Dakota should strive to capture greater local economic benefit of renewable energy projects through facilitating community ownership by offering production incentives, guaranteed markets, standardized legal agreements, capital support and other assistance to fill the federal policy gaps.



In North Dakota oil and gas development, there are policies to ensure a fair deal for neighboring landowners who share the resource. Such policies have yet to be put in place for wind.

Local Ownership Models Create Local Wealth

A study of wind developments by the U.S. Government Accountability Office found local income for 40 MW installed from the outside investor model to be \$1.3 million compared to \$4 million in the local investor model.²

Despite these local economic advantages, of the 18,281 MW of wind installed in the US as of July 2008, only 736 is community owned.³

The factor that accounts for the greatest disparity regarding incentives between community owned projects and those of large absentee investors is the inability of many community wind investors to use the prime wind policy support tools in the U.S.: the Production Tax Credit, which can only be applied to passive income, and accelerated depreciation, which allows assets to be written off in five years, rather than 20.