

UNITED STATES SENATE  
ENERGY AND NATURAL RESOURCES COMMITTEE

SUBCOMMITTEE ON ENERGY

TESTIMONY OF

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EFFICIENCY, NORTH DAKOTA DEPARTMENT OF COMMERCE

AND ALSO ON BEHALF OF THE

NATIONAL ASSOCIATION OF STATE ENERGY OFFICIALS

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“ENERGY EFFICIENCY”

## **INTRODUCTION**

Good afternoon Senator Dorgan, and Subcommittee members. My name is Kim Christianson, I am the Manager of the Office of Renewable Energy & Energy Efficiency within the North Dakota Dept. of Commerce and the Chair of the Agriculture and Rural Development Task Force of the National Association of State Energy Officials (NASEO). I greatly appreciate the opportunity to appear before you today. My testimony today will serve a dual purpose: 1) to highlight energy efficiency activities and policy in North Dakota; and 2) to present NASEO policy positions on energy efficiency and to describe other state efforts.

## **NORTH DAKOTA ACTIVITIES**

These are exciting times for energy development and the energy industry in North Dakota, particularly in the areas of wind energy, ethanol, biodiesel and other renewable energy developments. In the past few years, ten wind energy projects have been installed or announced, including 383 utility-scale wind turbines with a total rated capacity of 578 MW. Five ethanol production plants and another four biodiesel production facilities are under construction or soon to begin construction. Various groups are exploring the potential for biomass energy development in the state, particularly the use of cellulosic feedstock for ethanol production.

North Dakota has abundant fossil fuel resources, including lignite coal, oil, and natural gas, and a significant electric generation industry that exports nearly 70 percent of the electricity produced to neighboring states, mainly to Minnesota. Governor John Hoeven has encouraged the existing fossil fuel industry and the developing renewable energy industry to work together when feasible. An excellent example of the synergy potential between the two energy sectors is the recently announced Spiritwood project, near my hometown of Jamestown, North Dakota. The project involves the existing Cargill malting plant outside of Spiritwood, a proposed 100 million gallons per year ethanol production plant, and a new coal-fired 40 MW generation facility to be built by Great River Energy. Steam heat from the power plant will be used at both the ethanol and malting facilities. Waste water from the malting plant will be utilized by the ethanol facility for their needs. The electricity generated by this project will be placed on the transmission grid and sent to Great River's customers in Minnesota. Because the Cargill malting plant can replace their expensive and often interrupted supply of natural gas with inexpensive steam from the power plant, they have recently expanded their operation, making it the largest of its kind in North America.

With all the attention on renewable energy development and the substantial economic activity generated, it is easy to overlook the good work and benefits of energy efficiency efforts. Our office has been actively involved with energy efficiency efforts in North Dakota since the late 1970's, and we continue to administer the Weatherization Assistance Program and the State Energy Program. My testimony will highlight three particularly successful energy efficiency activities in North Dakota – the Weatherization

program, the State Energy Program and our efforts to improve the energy efficiency of state-owned buildings.

As you know, the Weatherization Assistance Program provides low-income households with energy efficiency improvements to their homes. In North Dakota, our program assists approximately 1,300 households annually, benefiting over 2,700 low-income persons, 55 percent of whom are elderly or children. Weatherization services in North Dakota are delivered by seven regional Community Action Agencies.

Over the last couple of years, our state has implemented what we call a “Best Practices” initiative. This is a comprehensive effort involving all levels of the state’s Weatherization program – from state administrators, to Community Action Agency energy coordinators, to the weatherization crews themselves – to implement state-of-the-art approaches to residential energy efficiency from around the country and to develop an instructional manual that is applied consistently throughout the state. The “Best Practices” initiative includes intensive training and the use of sophisticated diagnostic equipment so that all crews are equipped to do the best job possible to help low-income households get a handle on energy consumption and costs. Continuing education is provided to Weatherization crew members to ensure early adoption of improved methodologies.

In addition to reducing energy costs and improving comfort, the Weatherization crews have expanded their efforts to include emergency repair and replacement of furnaces, which in a number of instances has resulted in the identification and elimination of life-threatening safety issues. For example, the Community Action Program Region VII, Inc., in Bismarck reported one particular case in which a woman had chronic headaches and complained of feeling ill whenever she was in her mobile home for any length of time. It turned out that the level of carbon monoxide in her home was elevated well beyond safe levels. She very easily could have died from carbon monoxide poisoning and was fortunate that the weatherization crew discovered and corrected the problem.

North Dakota’s “Best Practices” initiative has been recognized around the country as an innovative, comprehensive, and cost-effective approach to providing energy efficiency assistance to low-income residents. I’m proud to tell you that my friend and colleague, Cal Steiner, who along with state manager Howard Sage administers the program for North Dakota, will be receiving the prestigious **James Gardner National Weatherization Award** from the National Association of State Community Services Programs; their top award for excellence.

In addition to North Dakota’s Weatherization program, I want to discuss our energy efficiency efforts for state-owned buildings. Over the years, we have provided technical and financial assistance for energy efficiency projects in 412 buildings, amounting to \$24 million in projects, resulting in over \$3 million in annual cost savings.

For many years, our office has had a close working partnership with the North Dakota Association of Physical Plant Administrators. They represent all the major state facilities, including the buildings owned by the state university system, and the group has now expanded to include major school district facility managers and others. Through the State Energy Program, we annually provide funds for training programs implementing a variety of energy efficiency measures. Recent examples include sessions on direct digital control systems and steam trap maintenance and replacement programs.

We've done much to encourage reduced energy consumption and costs in state and local buildings. As I mentioned, we have provided technical and financial assistance for detailed energy analyses, and for energy efficiency improvements. In recent years we have encouraged and assisted state facility managers with two mechanisms to implement efficiency improvements -- a state "bonding" program and energy performance contracting. Many of these activities are supported by the State Energy Program.

The state facility energy improvement program has provided bond funds for larger-scale efficiency improvements, based on detailed energy audits that indicate favorable returns on investment. The savings on utility costs are then used to pay back the state bonds. A current example is a \$2.3 million project at the University of North Dakota in Grand Forks, which includes upgrades to seventy-five buildings. This project is expected to result in energy cost savings of over \$330,000 per year.

A second mechanism for efficiency projects at state facilities is performance contracting. This allows a third-party vendor to work with the institution to identify potential energy-saving improvements and to arrange for the financing for those improvements. Under this program, the vendor guarantees that the facility will realize sufficient energy cost and operational savings to pay back the financing within a prescribed period; usually within ten-to-fifteen years. Our office includes a registered and certified energy engineer who works closely with state facility managers to review proposals and contractual documents to make sure projected utility savings are realistic and achievable.

Finally, we are more and more involved in the initial planning and design stages of proposed new facilities. Our agency is housed in a very modern and energy efficient office building called the Century Center, which is owned by the state's Workers Safety and Insurance agency. Our engineer worked with the building design team to suggest a geothermal (or ground-source) heating and cooling system and a number of other efficiency features. The Century Center, along with a nearby Job Service North Dakota office building, received the Energy Star designation from the Department of Energy/Environmental Protection Agency program. We are also working with the Bank of North Dakota (our state-owned bank) on their new building, currently under construction, to hopefully also achieve the Energy Star designation.

While we are proud of our energy efficiency efforts in North Dakota, we are a small agency with limited resources and know that we have only scratched the surface of what could be accomplished. I'm very impressed with the innovative programs and

tremendous successes that my colleagues in other state energy offices have achieved. On behalf of our agency and other state energy offices, I thank you, Senator Dorgan, and other committee members for your continuing support of the Weatherization Assistance Program and State Energy Program. In our case, and I'm sure with most other states, these two programs have served as the foundation of our energy efficiency efforts. We very much appreciate it.

## **STATE ENERGY EFFORTS/FEDERAL APPROPRIATIONS**

I also want to highlight the efficiency policy positions of our national organization, the National Association of State Energy Officials (NASEO).

On behalf of NASEO, I want to point out that the state energy offices have been working hard to implement energy efficiency programs throughout the United States. The state energy offices directly implement projects, work to develop projects and programs with the private sector and work with all levels of government to develop innovative solutions to our energy problems. State energy offices advise our Governors on energy policy and work cooperatively with the state public service commissions. We look forward to working with Andrew Karsner, the relatively new DOE Assistant Secretary for Energy Efficiency and Renewable Energy, as he attempts to refocus DOE efforts in creative ways.

The Energy Policy Act of 2005 (EPACT) is a good starting point for a number of positive programs. EPACT reauthorized the State Energy Program (SEP)(Section 123), the Weatherization Assistance Program (Section 122) and the Low-Income Home Energy Assistance Program (LIHEAP)(Section 121). The authorization levels for FY'07 in EPACT for these critical programs are: 1) SEP - \$100 million; 2) Weatherization - \$600 million; and 3) LIHEAP - \$5.1 billion. While we do not know what the ultimate appropriations will be for FY'07, the FY'08 Administration request is: 1) SEP - \$45.5 million, of which \$10.5 million would be for a new competitive program and \$35 million for the base grant, which is well below the \$49.5 million in the FY'07 budget request for the base program; 2) Weatherization - \$144 million, which is a cut of almost \$100 million from the FY'06 appropriated levels; and 3) LIHEAP - \$1.782 billion, of which \$1.5 billion would be the regular grant and \$278 million would be contingency funds, down from \$2.161 billion in FY'07, plus \$1 billion in emergency funds last year. These three programs are the existing core of the federal-state relationship in the energy area.

In addition to the base Weatherization funds, approximately 10% of the LIHEAP funds are transferred to Weatherization activities on a yearly basis. We also ask this Subcommittee to reauthorize these programs this year.

We urge the Congress to encourage the Administration to support federal funding in FY'07 of at least \$49.5 million for SEP, \$242 million for Weatherization and \$2.161 billion for LIHEAP, with supplemental funds equal to the \$1 billion level provided last year. For FY'08, we would encourage Congress to move towards the authorized levels

contained in EPACT, but, at a minimum, to provide \$80 million for SEP, \$300 million for Weatherization and the \$3.1 billion funding level for LIHEAP.

Numerous studies of the effectiveness of state energy programs have been prepared over the past few years by individual states that show the successes, enormous leverage of private and other public resources and dramatic delivered energy savings. In addition, a study prepared by Oak Ridge National Laboratory a few years ago (in an era of lower energy prices) showed that for every federal dollar invested in the State Energy Program over \$7 in energy savings was realized and over \$10 in leverage of other resources was achieved. This study did not even account for the critical efforts in energy emergency preparedness or promotion of alternative fuels and alternative-fueled vehicles.

We are also very concerned with under-funding of DOE's industrial energy efficiency program. This program received well over \$100 million five years ago and has dropped to \$55 million in FY'06, with a further proposed decrease to \$46 million in FY'08. The industrial sector requires more funding.

In addition to these core programs, a number of other critical programs were authorized in EPACT, that have not been funded or have not been sufficiently funded:

- 1) Energy Efficient Appliance Rebate Program (Section 124) - \$50 million authorization. This is a new program that was originally proposed by Senator Schumer based upon a successful model implemented by the New York State Energy Research and Development Authority (NYSERDA), which helped transform the market by getting individuals to purchase energy efficient products. No funds were requested in the FY'08 Budget.
- 2) Energy Star Program (Section 131) This joint EPA/DOE program is an essential component to many state energy efficiency activities. The Energy Star label is ubiquitous now and we utilize it to encourage homeowners and businesses to purchase energy efficient products. Large retailers are also helping to encourage the use of these products. The EPA program was proposed for a cut to \$43.5 million in FY'08 from \$50 million in FY'06. We would recommend that this program be doubled. NASEO members have developed a number of partnerships with EPA, and they have delivered real, measurable savings to help American consumers. The DOE Energy Star Program received a \$1 million increase from the FY'07 request to \$6.776 million. This is insufficient.
- 3) State Building Energy Efficiency Codes Incentives (Section 128) - \$34 million authorization. The Administration requested \$3.75 million in FY'08. The FY'06 funding was \$5.575 million. This program matches state and local efforts to both upgrade the energy efficiency of building codes and train local code officials to enforce such codes. This is a key component of any major energy efficiency effort in buildings in this country. Without training of local code officials, builders and architects, a higher building

energy code is inadequate.

- 4) Energy Efficiency Pilot Program (Section 140) - \$5 million authorization. This new program would help encourage best practices in states. The state energy officials are committed to working with their brethren in the other states to implement programs that are road-tested in other jurisdictions. No funding was requested in FY'08 for this program.
- 5) Energy Efficient Public Buildings Program (Section 125) - \$30 million authorization. This new initiative was based upon legislation introduced by Representative Mark Udall (D-CO) and former Representative Sherwood Boehlert (D-NY), focused on upgrades to school buildings. In negotiations on a bi-partisan basis, this program was expanded to all public buildings. No funds have been requested in FY'08 for this program. Energy efficiency in public buildings could be greatly improved throughout the United States. This program would leverage significant state and local resources, and would leave more funds for high priority activities such as education and health care.
- 6) Appliance Energy Efficiency Standards (Sections 135 and 136) – NASEO supports funding for an accelerated and expanded appliance standards program. This is an extremely successful program which requires increased attention by DOE.

In the tax area, we strongly urge Congress to go beyond last year's tax extenders bill and to extend the energy efficient commercial buildings deduction, credit for construction of new energy efficient homes, credit for certain non-business energy property, credit for energy efficient appliances and the credit for residential energy efficient property. The proposed tax benefits for combined heat and power should be included in any new energy tax provision. We support extension of the production tax credit for wind and other technologies, as well as the solar investment tax credit, credit for qualified fuel cells and microturbines and the Clean Renewable Energy Bonds.

In the alternative fuels and transportation area, we support the recommendations of the Governors Ethanol Coalition and the 25 x 25 group, as well as efforts to encourage the further expansion of hybrid electric and plug-in hybrid vehicles. The proposals advanced during the Senate Energy and Natural Resources Committee's recent hearing to encourage the use of biofuels, ethanol with existing feed stocks and the expanded use of cellulosic ethanol are all strongly supported by the state energy offices.

Title IX of the 2002 Farm Bill is a good starting point for more aggressive action in the energy area for the agriculture sector. Section 9006, providing for energy efficiency and renewable energy for farmers, ranchers and rural small businesses, has been especially effective, though under-funded. Mister Chairman, your proposals, Senator Harkin's "REAP" legislation and the President's recent suggestions are a good starting point for this expansion.

A few issues and trends are worth bringing to the Subcommittee's attention as you deliberate on new energy legislation and responses to environmental challenges. First of all, we are seeing the states working together on a regional basis to a far greater extent than previously. The resolution and reports prepared by the Western Governors Association in the summer of 2006, known as the Clean and Diversified Energy Initiative, is a balanced approach to addressing our energy needs. The northeast and mid-Atlantic states are moving forward with their Regional Greenhouse Gas Initiative (RGGI). California and the west coast states are joining together on comparable programs. New York and California have established a number of innovative energy efficiency and renewable energy programs. The state energy offices are working closely with all these efforts.

A wide variety of states have instituted new statewide energy plans and programs. A number of jurisdictions are pushing for and implementing renewable portfolio standards. The Governor of Oregon has just announced a planned 25% RPS by 2025, expanded use of biodiesel and ethanol, as well as certain climate change proposals. Georgia issued a new energy plan in late 2006. The Governor of Connecticut has just announced a new, expanded energy agency. The Governor of Wisconsin has also called for a new energy agency. A number of states are expanding public benefit programs and energy efficiency and renewable energy programs.

There is broad national recognition among energy professionals that energy security is an ever-increasing problem. Our state energy offices are responsible for energy emergency preparedness, but we recognize that emergency preparedness and response is not sufficient. One of the critical issues that we are facing is the increasing volatility of energy supplies. This impacts the electric utility sector, consumers of all types and especially the agricultural and industrial/manufacturing sectors of the economy. Our energy efficiency programs must refocus on reducing peak demands for natural gas in order to moderate this volatility. The National Action Plan for Energy Efficiency, developed with state energy office input, through a joint EPA/DOE task force, is a very positive step. We are working in the individual states and on a regional basis to implement many of the recommendations of that effort. It builds on successful "best practices" that we have initiated in each state.

In addition, as you consider both energy policy and funding decisions, we urge you to consider the key role for both energy R&D and deployment programs. R&D, without the use of the technology developed, is a waste.

In addition to our efforts in North Dakota, there are a myriad of examples of successful state energy programs throughout the United States. I will be supplying a state-by-state set of examples for the record.

Some selected examples:

Alabama – The state energy office has implemented projects in energy efficient buildings (saving \$5 million per year), rural water leak prevention programs (savings of \$1.7

million per year in energy costs), biomass energy projects (36 projects saving over \$10 million annually so far) and a recycling program (saving \$5 million in energy costs, and recycling 9 million gallons of oil and diverting 1,000 tons of materials from landfills).

Florida – The energy office has focused on energy efficiency in schools. The state is also promoting solar technology, ethanol, biodiesel and solar water heating for low-income homeowners.

Hawaii – The Governor proposed, and the legislature enacted, four new major energy bills in 2006. This effort will expand energy efficiency in buildings (including promotion of Energy Star products), expanded biofuels, a 20% RPS by 2020, expansion of energy performance contracting, and promulgation of a tropical energy efficiency building code.

Idaho – The state has been focusing on getting homeowners to purchase and construct energy efficient manufactured and modular homes (with a certification program) and new Energy Star high performance site-built homes. The energy office has also funded alternative energy demonstration projects, promotion of geothermal projects and a variety of agricultural energy programs.

Kentucky – This state has been in the forefront of promoting Energy Star products. The energy office is focusing on schools and energy service performance contracts, as well as biofuels.

Louisiana – The state has been focused on Hurricane Katrina response and reconstruction. The energy building code was upgraded last year. The state is educating consumers and building construction professionals in energy efficient design.

Montana -- The state has focused on improving statewide building codes and training of local code officials and builders to actually implement improvements. In addition, the state has issued bonds to improve energy efficiency in buildings, with 67 projects completed and 21 additional projects in the pipeline. The state is also addressing the residential sector with a state tax credit of \$500 for new and existing homes. In 2005 alone, \$5.6 million was provided to homeowners for this energy efficiency credit with homes built to Energy Star standards.

New Jersey – The Clean Energy Program has expended \$124 million for a variety of energy efficiency and renewable energy projects. In addition to project implementation, the state has developed a new wireless energy management demonstration project, a bioheat rebate program and an alternative fuel vehicle rebate program.

New Mexico – Expanded programs for energy efficiency utilizing advanced motors, appliances and new energy codes has been a major new effort in New Mexico. In the renewable energy area, there has been an expanded focus on clean fuels, geothermal resources, wind resources and new incentives for photovoltaic systems and solar water heating.

North Carolina – In the industrial energy efficiency area, the state has promoted energy savings improvements that have led to more than \$170 million in projects. In the residential energy efficiency area, the state is implementing a “Healthy Built Homes” program, focusing on furnaces and energy efficient heat pumps. A utility savings program for state facilities has saved \$30 million since 2002. In addition the state energy office manages an energy service performance contracting program that has \$40 million in projects underway.

Oregon – In Oregon, as noted above, the Governor has been promoting a range of new energy efficiency and renewable energy initiatives. The 35% business energy tax credit for energy efficiency, renewable energy, recycling and transportation programs, the residential energy tax credit and the statewide energy loan program have produced \$2.1 billion in energy efficiency project investment and have saved 53.1 trillion Btu’s through 2005. Significant initiatives to promote energy efficiency in schools and for manufactured homes are key.

South Carolina – The schools and government buildings energy efficiency program has provided 29 loans, generating \$30 million in energy savings over the lifetime of the projects. The state has also certified energy efficient manufactured homes. A unique truck stop electrification program has been implemented in conjunction with Georgia and North Carolina. This program has displaced over 220,000 gallons of diesel fuel each year. The energy office has also focused on developing landfill gas projects.

South Dakota – The state implemented an energy efficiency grant program requiring a 50% match. The recent focus has been on heating and controls upgrades, lighting and energy recovery systems. The energy office also operates an energy loan program, which recently developed a \$3.3 million project on steam tunnel improvements, as well as construction of biomass and wood-chip boilers

Tennessee – The state’s small business energy efficiency loan program has provided \$10 million for a variety of energy projects. The local government energy efficiency loan program has provided over \$17 million in loans, producing savings of over \$4 million.

Washington – The state has been focusing on improving building energy efficiency techniques. The state has focused on net metering, tax credits and biofuels development. The state energy office has been working with the Northwest Energy Efficiency Alliance to implement \$20 million per year for market transformation efforts and resource acquisition programs for energy efficiency.

## **CONCLUSION**

Thank you for the opportunity to testify. I would be happy to answer any questions.