

Backgrounder

First Report on Renewable Energy Development and Conservation in Saskatchewan

Executive Summary

In May 2006 I was asked by the Premier to undertake an assignment as Legislative Secretary for Energy Conservation and Renewable Energy Development. Saskatchewan seeks to become a North American leader in safe renewable energy sources and conservation, with a vision set out in the 2005 Speech from the Throne. My task then is to provide government with a blueprint for achieving this vision.

The recommendations contained in this first report build on Saskatchewan's current strengths in the areas of wind power, ethanol production (and an ethanol mandate), CO₂ sequestration, adoption of high energy efficiency standards for public buildings and its Energy Share residential energy conservation program. In addition, the recommendations propose major policy changes that would make Saskatchewan a national leader in the field of energy conservation and set the stage for significant advancements in the development and adoption of renewable energy.

Summary of Priority Recommendations

This first report focuses primarily on the electricity sector and the buildings sector. The recommendations fall within four core areas: transition to renewable energy in the electrical sector; incentives to promote conservation and renewable energy; advancing conservation and renewables in the buildings sector; and, policy measures to promote conservation and renewable energy.

The summary below highlights the priority recommendations.

Making the Transition to Conservation and Renewable Energy in the Electrical Sector

- Introduce legislation to establish a Renewable Energy and Conservation Portfolio Standard for electricity production in Saskatchewan. The Portfolio Standard would require that a minimum of 50 per cent of Saskatchewan's electricity will come from renewable energy sources and electricity conservation by 2025.
- Undertake a major investment in Demand Side Management targeting electricity savings of 300 megawatts by 2025.
- Make large scale wind power an important part of future electrical generation with a target of 500 megawatts of wind power by 2015.
- Encourage net metering for small scale producers of green, low impact electricity with a rate structure that enables customers to sell low impact renewable electricity to the grid at the retail price.

Financial Assistance to Promote Conservation and Renewable Energy

- Introduce a Business Energy Efficiency and Renewable Energy Tax Credit to help offset some of the costs incurred by businesses or co-operatives that install renewable energy systems and invest in conservation measures.
- Strengthen and expand the Saskatchewan Energy Share residential conservation program.
- Establish a Renewable Energy Grant Program to assist homeowners and landlords with the installation of safe, renewable energy technology in new and existing homes.
- Introduce a New Home Grant Program to assist homeowners with the incremental costs of constructing R-2000 and Energy Star Homes.
- Provide financial incentives to assist municipalities and non-profit organizations to upgrade energy efficiency and install renewable energy systems in existing buildings, build new buildings to Leadership in Energy and Environmental Design (LEED) energy efficiency standards, incorporate renewable energy systems in new buildings, and build net zero energy buildings.
- Establish a Low Interest Energy Loan Program for larger conservation and renewable energy projects. The program would be available to individuals, businesses, co-operatives, farms, school divisions, municipalities, First Nations and non-profit organizations.

Advancing Conservation and Renewables in the Commercial and Institutional Buildings Sector

- Implement a common sense energy efficiency building code standard for new commercial buildings.
- Promote the construction of net zero energy buildings with particular emphasis on commercial and institutional buildings.
- Promote the adoption of solar energy with the introduction of solar rights legislation and undertake extensive consultation with municipalities to encourage proper orientation of new homes to facilitate solar access.

Policy Measures to Promote Conservation and Renewable Energy Development

- Expand the role of the Office of Energy Conservation with a mandate to make Saskatchewan a North American leader in energy conservation and renewable energy development.
- Establish an Energy Conservation and Renewable Energy Fund to ensure a stable, multi-year public funding base for conservation and renewable energy initiatives and investments.

These recommendations represent policy components that can be used to build on strong beginnings to make Saskatchewan a North American leader in energy conservation and to achieve the target set by the government for renewable energy development in Saskatchewan – 33 per cent renewable energy by the third decade of this century.

Recommendations

Making the Transition to Conservation and Renewable Energy in the Electrical Sector

1. Introduce legislation to establish a Renewable Energy and Conservation Portfolio Standard for electricity production in Saskatchewan. The Portfolio Standard would require that a minimum of 50 per cent of Saskatchewan's electricity will come from renewable energy sources and electricity conservation by 2025.
2. Undertake a major investment in Demand Side Management (DSM) targeting electricity savings of 300 megawatts by 2025.

Achieving this level of electricity savings will require SaskPower to increase DSM spending to at least \$30 million by 2009. Demand side management must be viewed as a supply side option and all related expenditures should be treated as capital costs rather than operating expenses.

Based on the experience of other utilities, a cost effective DSM program could include the following components:

- Major, sustained advertising campaign aimed at saving electricity;
 - Mass distribution of compact fluorescent light bulbs;
 - Incentives for other wise lighting initiatives;
 - Incentives to encourage energy efficiency on farms and in businesses;
 - Incentives to encourage municipalities to save electricity in municipal facilities, ice rinks, traffic lights and street lighting;
 - Energy performance contracting services for municipal, farm and small business customers;
 - Installation of advanced metering;
 - Special audit and consulting services for large industrial customers;
 - Engaging outside expertise to assess opportunities for DSM and conservation investments;
 - High performance building program for large electricity intense facilities;
 - Energy Efficiency Leaders in the Workplace Program.
3. Make large scale wind an important part of future electrical generation with a target of 500 megawatts of wind power by 2015.

Medium term planning should focus on overcoming wind power integration challenges and SaskPower should establish a wind power integration unit that would enable Saskatchewan to become a world leader in wind power development and integration.

4. Encourage net metering for small scale producers of green, low impact electricity with a rate structure that enables customers to sell low impact renewable energy to the grid at the retail price. Until such time as a two way single meter is approved for use by Measurement Canada, SaskPower should install a second meter at no cost for customers who install small scale, zero emission, green electricity generation systems.
5. Contract with environmental organizations and other non-profit organizations to market green power and promote public education and awareness.
6. Expand the Environmentally Preferred Power program targeting another 200 megawatts of environmentally preferred power over the next six years.

Financial Incentives to Promote Conservation and Renewable Energy

1. Introduce a Business Energy Efficiency and Renewable Energy Tax Credit to help offset some of the costs incurred by businesses or co-operatives that install renewable energy systems and invest in conservation measures.
2. Strengthen and expand the Saskatchewan Energy Share residential conservation program.
 - Expand the program to include electrical energy and domestic hot water conservation measures.
 - Increase the maximum grant available and enable residents to access the program for a second round of eligible improvements.
 - Broaden the eligibility to include renters for a prescribed list of highly cost effective expenditures including the purchase by the tenant of energy efficient lighting, Energy Star appliances, low flow showerheads and hot water heater blankets.
 - Distribute through the EnerGuide audit process free conservation kits including very low cost conservation products such as compact fluorescent lights.
 - Re-establish the low interest loan program to help finance the purchase of high efficiency furnaces.
 - Ensure measurability of program outcomes and results.
3. Establish a Renewable Energy Grant Program to assist homeowners and landlords with the installation of safe, renewable energy technology in new and existing homes.
4. Introduce a New Home Grant Program to assist homeowners with the incremental costs of constructing R-2000 and Energy Star Homes. The target should be to construct 50 per cent of new homes to meet either R-2000 or Energy Star standards by 2010.

5. Provide financial incentives to assist municipalities and non-profit organizations to upgrade energy efficiency and install renewable energy systems in existing buildings, build new facilities to LEED (Leadership in Energy and Environmental Design) standards, install renewable energy systems in new buildings, and build net zero energy buildings.
6. Establish a Low Interest Energy Loan Program for larger conservation and renewable energy projects. The low interest loan program would be available to individuals, businesses, co-operatives, farms, school divisions, municipalities, First Nations and non-profit organizations for projects ranging from \$10,000 to \$2 million.

The Program would have two components:

- Revolving Energy Conservation Fund for conservation and energy efficiency projects that could be repaid within 8 years through energy savings.
- Renewable Energy Innovation Fund geared to assist with the construction of renewable energy projects where energy savings alone are not expected to enable full repayment of the loan in the medium term.

Advancing Conservation and Renewables in the Commercial and Institutional Buildings Sector

1. Implement a common sense energy efficiency building code standard for new commercial buildings.

Adopt the Model National Energy Code for Buildings as a regulation and prepare a separate amendment (in co-operation with Manitoba) with higher energy performance requirements.

Provide required training for municipal building inspectors on new building code provisions and financial assistance to municipalities to ensure appropriate enforcement.

2. Promote the construction of net zero energy buildings in all sectors, with particular emphasis on commercial and institutional buildings.
 - Provide financial assistance to cover a portion of the incremental costs of building net zero energy buildings for businesses, homeowners, farms, municipalities or First Nations.
 - Work with private sector building owners to demonstrate net zero energy buildings in different commercial settings.

- Work with municipalities to construct several high profile net zero energy community facilities.
 - Saskatchewan Property Management and the Crown sector should plan to construct at least one net zero energy building each over the next two years.
3. Promote the adoption of solar energy with the introduction of solar rights legislation to protect the rights of residents who have installed solar systems on their property.
 4. Undertake extensive consultations with municipalities to encourage proper orientation of new homes to facilitate solar access and prepare a model municipal bylaw that can be adopted by municipalities to guide the layout of subdivisions, streets and buildings to protect solar rights.
 5. Encourage builders to design homes that are 'solar ready' even if they do not immediately deploy solar technology.
 6. Consult with school divisions, health districts, universities, and others with a view to updating the energy efficiency policy and standards for public buildings with the objective of building new public facilities to a Leadership Energy & Environmental Design (LEED) standard. Consideration should be given to a LEED Silver designation for all newly constructed provincially funded buildings.
 7. Work to promote and encourage building construction to levels that achieve Commercial Building Incentive Program standards and R-2000 standards.
 8. All new buildings constructed to the Commercial Building Incentive Program Standards or better should be commissioned to make certain the buildings operate at the designed efficiency levels.

Policy Measures to Promote Conservation and Renewable Energy

1. Expand the role of the Office of Energy Conservation with a mandate to include responsibility for making Saskatchewan a North American leader in energy conservation and renewable energy development.
2. Establish an Energy Conservation and Renewable Energy Fund to ensure a stable, multi-year public funding base for conservation and renewable energy initiatives and investments.

3. Work with SIAST, the regional colleges and our other educational partners and institutions to provide training and education in all areas of energy efficiency including residential and commercial retrofitting, training for building inspectors to ensure appropriate enforcement of new building codes and standards, training for solar and wind installations, for biomass applications and other renewable energy technologies.
4. Begin preparation and consultations on a farm energy audit program. Such a program would involve a full audit of farm energy use, the potential for cost effective conservation investments and a comprehensive assessment of the opportunities for renewable energy development on the farm.
5. Establish a Premier's Awards Program for outstanding leadership in conservation and renewable energy development.
6. Expand the role for Saskatchewan Property Management as a bulk buyer of energy efficient and renewable energy products to save money for municipalities and non-profit organizations.
7. Assign a staff person to work with municipalities on applications for the Canadian Federation of Municipalities Green Municipal Fund and other federal programs that provide financial assistance in advancing conservation, renewable energy and environmental sustainability.
8. Participate with other provinces in working groups to revise building codes and standards.
9. Undertake an Energy Resource Planning Framework Study to provide a detailed renewable energy resource inventory and an analysis of how the resource locations compare to the points of energy consumption.
10. Carefully document and maintain all records related to the actions and initiatives taken to reduce green house gas emissions, save energy and introduce renewable energy. These records will be extremely useful in future negotiations with the federal government.

11. Launch several high profile, practical demonstration projects that advance renewable energy development and conservation measures. Projects should be geared to proving and widely applying conservation and renewable energy applications. Examples of potential projects for consideration include:
 - Construction of several net zero energy homes
 - Major energy conservation retrofit program on a First Nation reserve
 - Construction of renewable energy subdivisions in Saskatoon, Regina, Prince Albert and Moose Jaw
 - Installation of smart meters in a smaller Saskatchewan city
 - Development of a district heating system in a commercial urban setting
 - Demonstration wind/hydrogen project in Saskatoon and Regina at or near the SOCO Research Parks
 - Development of a commercial ethanol production facility using wood residue
 - Demonstration project using wood waste to generate electricity
 - Construction of a northern biomass project that generates waste heat and uses the waste heat for district heating
 - Demonstration project using plug-in hybrid vehicles combined with small scale wind and solar photovoltaic systems

12. Accelerate the implementation of the recommendations in light of the urgency associated with the consequences of climate change.