

Research and Technology

Developing a comprehensive inventory of research currently underway is essential to establishing priorities and creating a cohesive plan for dealing with climate change. At the 2007 Summer Meeting, Premiers agreed to develop such an inventory.

Here's what some provinces and territories are doing in the field of research and technology:

- Alberta and Saskatchewan have made carbon capture and storage (CCS) the cornerstone of their approaches to dramatically reduce greenhouse gas emissions. Over \$80 million in cash and in-kind contributions have been invested in an international collaborative research and development project on carbon dioxide storage in Weyburn, Saskatchewan. Over the life of this project, it is estimated that over 26 million tonnes of CO₂ will be sequestered – the equivalent of removing 6 million cars from the road for a year. Alberta has created a \$2-billion fund to advance CCS projects. The fund will support the development of Alberta's first large-scale CCS projects that are expected to reduce emissions by up to five million tonnes annually.
- Québec launched a new strategy called the *Stratégie de développement de l'industrie québécoise de l'environnement et des technologies vertes*. The province will divide \$282 million over six years between five priorities: supporting the development of companies, supporting the development of new technologies, involving the local market, promoting internationalization, and supporting mobilization. Climate change mitigation is the major focus of this strategy.
- British Columbia supported the Pacific Institute for Climate Solutions with a \$90 million endowment. The Institute brings together top scientists and researchers in the public and private sector to develop innovative climate change solutions. B.C. also launched the \$25-million *Innovative Clean Energy (ICE) Fund*, designed to help make B.C. a leader in global alternative energy technologies.
- Yukon is focusing on partnerships in research and innovation by developing a Climate Change Centre of Excellence and focusing on cold climate studies and technology.



The Council of the Federation (COF) was created by Premiers because they believe it is important for provinces and territories to play a leadership role in revitalizing the Canadian federation and building a more constructive and cooperative federal system. The COF's objectives are to:

- Promote interprovincial-territorial cooperation and closer ties between members of the Council to ultimately strengthen Canada;
- Foster meaningful relations between government based on respect for the Constitution and recognition of the diversity within the federation;
- Show leadership on issues important to all Canadians.

www.councilofthefederation.ca

Climate Change Adaptation

The effects of climate change have already started to be observed and are expected to continue well into the future despite actions to reduce greenhouse gas emissions. Adaptation efforts are considered a critical response to climate change.

At their 2007 Summer Meeting, Premiers agreed to hold a conference on climate change adaptation in early 2008. The Council of the Federation-sponsored forum was held in Vancouver on January 29, 2008 and focused on adaptation issues related to water, forestry and Northern climates.

The Forum prompted follow-up work on a range of issues, including establishing a forest carbon management framework, conducting a tree species study, and completing a flood mitigation strategy.

The January Forum was followed by a Summit held in Ontario on March 31 and April 1 that focused on the transfer of knowledge between technical experts on climate change adaptation and public-policy practitioners who apply this expertise to government programming.

In addition, the Governments of the Northwest Territories, Nunavut, and Yukon are implementing climate change adaptation plans that address their unique climates.





Canada's Premiers: Taking Action on Climate Change

A Report on Progress Achieved Since August 2007

Implementing a National Biofuels and Hydrogen Distribution Network

Canada's vast size means that Canadians are dependent on a comprehensive transportation network to connect people and places. There are over one million kilometres of two-lane equivalent public roads and highways across Canada, which are travelled by Canadians every day. Exploring new and environmentally-friendly ways to fuel the vehicles that Canadians depend on for their livelihood is an essential step toward reducing greenhouse gas emissions.

Premiers have agreed to work together to develop strategies to implement a national biofuels and hydrogen distribution system to ensure that Canadians have access to alternative fuels.

Provinces and territories have begun collaborative work on assessing the opportunities and challenges presented by pursuing alternative fuels, including E85, biodiesel, hydrogen and plug-in electric vehicles, and intend to deliver a detailed strategy in 2009.

A Message from Canada's Premiers

At our 2007 Summer Meeting in Moncton, we agreed to implement energy conservation strategies and reduce greenhouse gas emissions within our own jurisdictions. Our commitments built on the efforts already being undertaken within our own jurisdictions, and recognized areas for possible collaboration.

Specifically, we agreed to pursue a series of actions focused on the measurement of greenhouse gas emissions, developing sources of renewable energy, creating a biofuels and hydrogen distribution system, creating an inventory of research currently in progress, educating our citizens, encouraging energy efficiency and conservation, capturing methane gas, and adapting to climate change.

The work being done within our provinces and territories, and through the Council of the Federation, is focused on a common interest in, and commitment to, addressing climate change.

It is one year since our 2007 Summer Meeting and significant progress is being made. Each province and territory has committed time, resources, and effort toward making sure that the commitments made in Moncton are honoured.

Measuring Greenhouse Gas Emissions

In order to demonstrate that progress has been made to reduce emissions, provinces and territories need to be able to measure and verify the emissions that are occurring in their jurisdictions.

In 2007, Premiers agreed to develop consistent and verifiable measurement of greenhouse gas emissions by joining The Climate Registry. This non-profit organization, comprised of member states, provinces/territories and tribes

from across North America, is devoted to developing an accurate, complete, consistent and transparent greenhouse gas emissions measurement protocol. It will provide a verified set of greenhouse gas emissions data, giving governments the tool they need to assess greenhouse gas emissions. Already, ten provinces/territories have joined The Climate Registry.

Developing and Expanding Sources of Renewable Energy

The growing demand for, and the increasing cost of producing, traditional energy sources has led to an increase in energy prices. At the same time, growing awareness of the long-term impact on the environment from the intensive use of traditional fossil fuel energy sources is leading governments and consumers to turn to greener and renewable sources.

At their 2007 Summer Meeting, Premiers committed to collectively producing an additional 25,000 megawatts (MW) of renewable energy by 2020 through sources such as hydro, wind, solar and tidal.

Since 2007, there has been a great deal of progress towards achieving this goal.

Here are some highlights:

- In 2008, New Brunswick will open its first wind farm. The 96-MW Kent Hills project will be the largest wind farm in Atlantic Canada. A recent study has identified the potential to develop between 2,500-4,500 MW of wind energy generation capacity within New Brunswick by the year 2025.
- Saskatchewan's expanded Green Power Portfolio will result in an additional 170 MW in renewable energy over the next four years.
- Prince Edward Island is moving aggressively to exploit its favorable wind regime. Currently 18 per cent of the province's electrical energy is derived from wind. By 2013, the province expects development of 500 MW of wind for both domestic and export utilization.
- Ontario has contracted the development of five hydroelectric projects that will result in approximately 500 MW of new renewable energy capacity and plans to procure another 2000 MW of new renewable supply over the next four years.
- Nova Scotia Power announced 240 MW of new wind power contracts in early 2008. They also selected three technologies and a project developer for a world-class tidal power demonstration facility in the Bay of Fundy.
- Manitoba has opened its 99-MW St. Leon Wind Farm and is nearing completion of a request for proposals for another 300 MW as part of an overall target of 1,000 MW of wind generated power.
- Québec has announced 15 new wind power projects in 8 different regions that will produce over 2,000 MW combined. It has also given authorization for 250 MW of wind power to be produced by local and native communities.
- The Lower Churchill Project in Newfoundland and Labrador will provide access to clean, low-emissions electricity, potentially displacing 1.3 megatonnes (Mt) of greenhouse gas emissions each year. The potential energy to be generated from the proposed 2,824 MW development is enough electricity to power close to 1.5 million homes and could displace over 16 Mt of carbon dioxide emissions every year.



Education and Climate Change

Students, teachers, and school administrators take an active role in making their schools environmentally-friendly and their students environmentally-conscious. Governments must support their efforts by providing guidance and resources for climate change education.

At their 2007 Summer Meeting, Premiers committed to including climate change in all school curricula. Currently, all province and territories have climate change elements in their school curricula.

Here are some specific examples:

- The Northwest Territories is introducing a new experiential science curriculum and textbooks for Grades 9 through 12 that incorporate sections on climate change and climate change adaptation.
- British Columbia introduced an "Energy Detectives" program for all Grade 2 students to help children develop smart energy habits.
- In 2007, Ontario announced that students in all grades and all subjects would learn about the environment and climate change.



Methane Capture

Sending waste to landfills results in the large release of gas to the atmosphere. Between 25 and 45 per cent of this gas is methane – a gas 21 times more potent than carbon dioxide in terms of trapping heat.

When captured, methane can be used for power generation or can be flared

to reduce emissions. At their 2007 Summer Meeting, Premiers committed to recapturing methane gas from large landfills.

Several jurisdictions have already enacted legislation. Here are some specific examples:

- Newfoundland and Labrador announced \$1.6 million in funding to construct a methane gas recovery unit at the Robin Hood Bay landfill.

The Landfill Gas Collecting and Flaring System can potentially reduce greenhouse gas emissions by 50,000-60,000 tonnes per year.

- Alberta has greenhouse gas regulations in place to manage emissions from landfills 100 kilotonnes (kt) or greater. A system has been developed to grant credit to landfills emitting less than 100 kt.



Energy Efficiency and Conservation

Becoming more energy efficient is one of the easiest and most effective ways to reduce greenhouse gas emissions and consumer energy bills. In recognition of the importance of energy conservation, *A Shared Vision for Energy in Canada* (released at the 2007 Summer Meeting) contains a 7-point action plan for Canada's energy sector that includes the promotion of energy efficiency and conservation as its first element.

Premiers have also agreed to pursue initiatives in their home jurisdictions aimed at improving energy efficiency in buildings and promoting the use of energy efficient products.

Here are some specific examples of what's being done:

- British Columbia has provided \$60 million over three years to the *LiveSmart BC: Efficiency Incentive Program* to help British Columbians reduce their carbon footprint and energy costs. By 2012, B.C. Hydro will replace 1.7 million hydro meters in homes and businesses with smart meters. The B.C. Energy plan sets a target for the province to acquire 50 per cent of its incremental electricity needs through conservation by 2020.
- Efficiency NB's industrial program convinced ten of the province's largest industrial energy consumers to sign agreements committing to decreasing energy use. Efficiency NB's *Bright Ideas Commercial*

Lighting Program received an award in September 2007 as part of an initiative to honour leading energy efficiency programs in North America.

- The Government of Nunavut is retrofitting government owned buildings in Iqaluit to make them more energy efficient. A private sector company is investing \$10 million and will be repaid through the energy savings of the project.
- Prince Edward Island has created the Office of Energy Efficiency. The initial priority for the Office is to assist homeowners in reducing their energy consumption through the implementation of energy efficiency and renewable energy technologies.
- Saskatchewan announced *Go Green on the Road* – a four-year program that provides drivers of hybrid and fuel-efficient vehicles with a 20 per cent rebate off their insurance and registration fees.
- Manitoba passed its *Climate Change and Emissions Reduction Act* which includes 60 specific actions to reduce greenhouse gases, including a requirement that minimum energy efficiency and water efficiency standards will be integrated into Manitoba's building and plumbing codes by 2010.
- Ontario has exceeded its target of installing 800,000 smart meters by the end of 2007. To date, approximately 1.4 million smart

meters have been installed in Ontario. In addition, Ontario is banning restrictions on the use of clotheslines on residential properties and has launched a \$20 million *Municipal Eco Challenge Fund* for municipal infrastructure projects that reduce greenhouse gas emissions and energy consumption.

- Conserve NS partnered with lighting distributors to cover the difference of cost between high-performance fluorescent lights and standard products. The consumer gets a premium, energy-efficient product at no extra cost. In only a few months, the program transformed the lighting market in Nova Scotia to a much more energy-efficient entity.
- One of the three key themes of Alberta's 2008 Climate Change Strategy is conserving and using energy efficiently. Under the energy efficiency theme, Alberta has committed to a variety of specific actions including: developing an Energy Efficiency Act, establishing an incentive program to promote the use of energy efficient appliances and home improvements; and, implementing strategies to enable reductions of greenhouse gas emissions in the agriculture and forestry sectors and facilitate development of offset and sequestration opportunities.