

Canadian Energy Strategy

Progress Report to the Council of the Federation

July 2013

Collaboration
Energy Stability

Energy Security
Transparency
Social Responsibility
Environmental Responsibility





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The Council of the Federation Canadian Energy Strategy Working Group was established in July 2012. The Working Group is led by Alberta Premier Alison Redford, Newfoundland and Labrador Premier Kathy Dunderdale and Manitoba Premier Greg Selinger, and composed of provincial and territorial Ministers responsible for Energy.

Introduction

Economic development that is environmentally responsible is fundamental to ensure the success of Canada's energy future.



At the Council of the Federation meeting in July, 2012, Premiers¹ agreed to renew the 2007 Strategy, "A Shared Vision for Energy in Canada", to ensure its continued relevance to Canada's energy landscape. While the 2007 commitments and shared vision continue to be relevant for provinces and territories, Canada is now facing new and urgent challenges as well as tremendous prospects. Provinces and territories have an opportunity to assess the country's current and emerging priorities and develop a renewed Canadian Energy Strategy that reflects the evolution of this complex sector.

Economic development that is environmentally responsible is fundamental to ensure the success of Canada's energy future. Domestic and global energy demand continues to increase. As energy demand grows, so does the need for additional energy production and the transmission and transportation infrastructure required to deliver more supply to consumers. Increased efforts in conservation and efficiency will help manage our demand for energy. In addition, the sustainable development of our resources will be critical to reducing the impact development may have on the environment. Through a renewed Canadian

Energy Strategy, provinces and territories will continue their commitment to ensuring a secure, sustainable, and reliable supply of energy that meets the domestic and economic needs of Canadians; maintaining high standards of environmental and social responsibility; conserving and using existing energy more efficiently; and enhancing Canada's energy sectors through the development and deployment of new technologies.

The Canadian Energy Strategy will reflect a renewed approach to energy cooperation in Canada. Provinces and territories in Canada have different energy sources and uses, unique energy needs and priorities, and offer valuable expertise. The Canadian Energy Strategy will be developed by provinces and territories as owners of the resources. Through agreement on common principles for energy conservation, development and use, provinces and territories are better positioned to build the energy infrastructure they require; improve sustainable energy use, development, and protection for the environment; and expand production to help meet global demand.

¹ In July 2012, British Columbia indicated that they will not participate in the process. In April 2013, Quebec indicated that it was open to work with jurisdictions in specific initiatives but did not intend to participate in the development of the Canadian Energy Strategy.

The Strategy will build on the 2007 *"A Shared Vision for Energy in Canada"* by focusing on provincial and territorial priorities, while advancing the common goals of ensuring Canada is a recognized leader in sustainable and secure energy production, conservation, supply and transportation. This report identifies the vision and principles for the Canadian Energy Strategy, highlights important work done by provinces and territories since the 2007 Strategy, and identifies challenges as well as potential opportunities facing Canada's energy sector.

Through continued collaborative work across Canada, the Canadian Energy Strategy will:

- Further develop and communicate provinces' and territories' shared objectives;
- Enhance citizens, stakeholders, and investors understanding of approaches to develop energy in an environmentally sustainable manner;
- Provide greater coherence to advocating and promoting Canada's interests internationally; and
- Continue to provide focus to initiatives that will help Canada achieve our collective vision as a responsible global energy power.

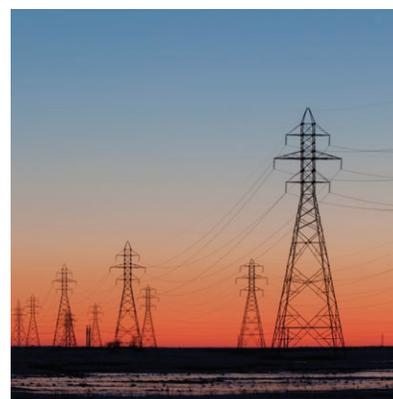
Canadian Energy Strategy

Vision and Principles

The Canadian Energy Strategy reflects an overarching vision and principles that form the foundation for energy development in Canada. The vision and principles are intended to strengthen the efforts of all governments to grow their economies, build on existing advantages and overcome challenges. They will guide future collaborative work under the Canadian Energy Strategy.

Vision

Canada is a global leader in providing a secure, sustainable and reliable supply of energy that is delivered with a high standard of environmental and social responsibility while contributing to continued economic growth and prosperity for all Canadians.



Principles

→ Collaboration and Transparency

- Seek intergovernmental collaboration on areas of mutual interest involving energy resources, energy conservation and technologies to optimize the opportunities and strengths of each province and territory.
- Collaborate and encourage co-operation, participation and partnership with other governments and key stakeholders.
- Respect the Aboriginal and treaty rights that are recognized and affirmed by section 35 of the Constitution Act, 1982.

→ Social and Environmental Responsibility

- Recognize the importance of environmentally and socially responsible energy development, transportation systems and enabling technologies to support conservation, efficiency and effectiveness in the use of energy resources.
- Transition to a lower-carbon economy while meeting current and future energy needs.

→ Energy Security and Stability

- Ensure a secure supply of energy for all Canadians by recognizing the need for open, non-discriminatory transportation and transmission of energy resources.
- Maintain an effective, efficient and transparent regulatory system that supports responsible energy development and maintains robust environmental management.



Working Groups

Ten cross-Canada teams were formed in February 2013 for each of the areas of focus.



In conjunction with provincial and territorial Energy Ministers, the three Co-Chair Premiers have taken the lead in assessing the new challenges and opportunities facing the energy sector. This work has been informed by the Canadian Energy Strategy vision and principles. Three Working Groups, encompassing the ten areas of focus, have been formed and are led by a Co-Chair province. Ten cross-Canada teams were formed in February 2013 for each of the areas of focus. The work undertaken by the teams has informed the identification of gaps which assisted in identifying the opportunities and challenges outlined in this Progress Report.

Sustainability and Conservation – Led by Manitoba

1. Promote energy efficiency and conservation.
2. Transition to a lower carbon economy.
3. Enhance energy information and awareness.

Technology and Innovation – Led by Newfoundland and Labrador

4. Accelerate the development and deployment of energy research and technologies that advance more efficient production, transmission and use of clean and conventional energy sources.
5. Develop and implement strategies to meet energy-sector human resource needs now and well into the 21st century.
6. Facilitate the development of renewable, green, and/or cleaner energy sources to meet future demand and contribute to environmental goals and priorities.

Delivering Energy to People – Led by Alberta

7. Develop and enhance a modern, reliable, environmentally safe, and efficient series of transmission and transportation networks for domestic and export/import sources of energy.
8. Improve the timeliness and certainty of regulatory approval decision-making processes while maintaining rigorous protection of the environment and public interest.
9. Promote market diversification.
10. Pursue formalized participation of provinces and territories in international discussions and negotiations on energy.

Progress Highlights – 2007 *A Shared Vision For Energy In Canada*

Subsequent to the release of the 2007 “*A Shared Vision for Energy in Canada*,” provinces and territories have been advancing activities that are in accordance with the Seven Point Action Plan. Provided below is a sample of initiatives taking place across the country in these seven areas and the three new priorities for the Canadian Energy Strategy. For the purposes of this report, they are grouped in the three Working Groups. This list is not meant to be inclusive of all activities.

Sustainability and Conservation

Several provinces and territories have built on current practices in their respective jurisdictions in relation to promoting energy efficiency, transitioning to a lower carbon economy and enhancing energy information and awareness. These efforts include activities such as: developing rebate and incentive programs, delivering climate change strategies and programs, addressing greenhouse emissions, increasing awareness of the benefits of energy efficiency and conservation, addressing demand side management approaches, and delivering sector specific programs and standards.

Provincial and Territorial examples:

- Alberta established the Climate Change Emissions Management Corporation, an arms-length body, to distribute funds to projects in energy efficiency, greening energy production, technology, and adaptation. To date, \$398 million has been collected into the Fund and the Corporation has distributed \$182 million to 48 clean technology projects.
- By 2014, Saskatchewan will be home to the world’s first commercial scale, integrated carbon capture and storage project at Boundary Dam Unit Three, a \$1.24 billion investment. Boundary Dam is the province’s largest coal-fired generating station.
- In Manitoba, *The Energy Savings Act* established the “On-Meter Efficiency Improvements Program”, which enables Manitoba Hydro to offer an on-meter financing program for electricity, geothermal and water retrofits. This “bill neutral” program is tied to the building’s account for power instead of the individual customer, can be paid back within the useful lifespan of the equipment through bill savings, and allows for the transfer of the agreement to a new utility account upon a change in ownership/tenancy.

- By the end of 2014, Ontario will eliminate coal as a source of electricity production. Replacing coal-fired electricity generation is the single largest climate change initiative being undertaken in North America. In 2010, a comprehensive set of electricity conservation initiatives was implemented under the saveONenergy banner, aimed at savings of up to 1,300 MW by 2014.
- The development of the Muskrat Falls Hydroelectric Development will result in Newfoundland and Labrador's electricity system being 98% emission-free, and the associated development of the Maritime Link connecting the Island of Newfoundland to Nova Scotia will enable the delivery of clean, stable, renewable energy from Newfoundland and Labrador to markets in Nova Scotia, other Maritime Provinces, and beyond. These projects, which will assist in building a modern and efficient regional electricity grid that is built upon clean, renewable sources of energy, are an example of what can be accomplished when provinces and territories work together on energy issues.
- New Brunswick released an Energy Blueprint in 2011, which sets out a 10-year vision based on low and stable energy prices, energy security, reliability of the electrical system, environmental responsibility and effective regulation.
- In 2011 the Efficiency Nova Scotia Corporation (ENSC) was created to provide innovation and the delivery of electric and non-electric conservation and energy efficiency programming.



- Prince Edward Island's Office of Energy Efficiency Programs provides financial incentives and other services to implement energy efficiency measures in homes and buildings.
- Yukon's Good Energy Rebate Program works with local retailers and consumers using education and incentives to encourage the purchase of energy efficient products.
- The Government of Nunavut has undertaken an energy efficiency retrofit of government owned buildings in Iqaluit, financed by private sector investments, totaling \$12 million, whereby private sector investments are repaid through guaranteed utility savings. A second phase will address the remaining government buildings outside of Iqaluit, anticipated 2013/2014.
- The Northwest Territories has developed a suite of energy efficiency and conservation funding programs designed to support residents, business, and the communities' effort to reduce energy costs and greenhouse gas emissions. These include the Energy Efficiency Incentive Program that provides rebates to residents for the purchase of ENERGY STAR appliances and energy efficiency upgrades for homeowners.

Technology and Innovation

Several jurisdictions have developed financial incentives and tax credits and provided funding to support renewable energy research, development and use. Some provinces and territories have established research centers or institutes to pursue further innovation and have shared best practices and opportunities with regional partners or other jurisdictions. Moreover, provinces and territories are using a number of different mechanisms to support the labour market and human resources needs of the energy sector in their jurisdictions and across Canada. These programs include increasing participation for under-represented groups, and collaborative partnerships that support areas such as immigration, labour mobility and skills recognition.



Provincial and Territorial examples:

- Recent amendments to the Co-Management Agreement between the Government of Alberta and the Métis Settlements will enhance employment and business opportunities for Settlements and their members, and enable them to participate more effectively in Alberta's economy. This will include management, training and resource development opportunities. The amendments allow for Settlement-owned companies to participate in oil and gas development on Settlement lands.
- Saskatchewan is undertaking the Aquistore Project, a \$27 million collaborative research venture involving a 3.4 kilometer deep well that will inject carbon dioxide into a highly saline formation.
- Manitoba is working to reduce or eliminate the use of diesel fuel and home heating oil for electricity generation and heating needs in Manitoba's off-grid communities by employing renewable energy technology solutions that offer the advantage of reducing greenhouse gas emissions reducing the costs for heating and electricity over time, and improving the local environment.
- Ontario's Smart Grid Fund has launched nine collaborative projects to commercialize smart grid technologies such as the Green Button Initiative, which provides customers standardized, secure access to their energy data.

- The Ramea Wind-Hydrogen-Diesel Project, being conducted in Newfoundland and Labrador, is a research and development initiative which integrates wind, hydrogen and diesel to develop an environmentally-friendly energy project for use in small, isolated electrical distribution systems. All equipment was successfully installed and commissioned by the end of 2012. The demonstration phase of the project has begun, which involves optimizing the operation of the facility, analyzing project data, increasing efficiencies of the equipment and determining the market potential of the system.
- New Brunswick has provided leadership in launching the PowerShift Atlantic initiative and has been a strong adopter of smart grid technology and applications, including a recent partnership between NB Power and Siemens.
- Released in 2012, Nova Scotia's Marine Renewable Energy Strategy establishes the research, development, and research plans the Province is implementing to achieve its vision to be a global leader in the tidal energy industry. Nova Scotia's Strategy articulates strategic actions that will encourage industry activity, offering significant economic and environmental benefits to Nova Scotians and Canadians.



- The Wind Energy Institute of Canada's demonstration project, the Wind R&D Park in Prince Edward Island, features 5-2 MW DeWind wind turbines, a 1MW-2MWh electricity storage system composed of a 1MW Power Conversion System, and a 2MWh battery supplied by General Electric, which will allow the examination of grid integration technologies to increase the economic viability of intermittent electricity generation.
- Yukon provides a Wind Prospecting Service for off-grid residents to help them determine whether the wind resource at their location is sufficient to justify the significant investment required to install a wind generation system.
- The Northwest Territories Biomass Strategy has supported the shift to wood based heating, reducing energy expenditures, and GHG emissions. The Territory now leads the country in the installation of commercial wood pellet boilers.
- Nunavut is building the Arctic's first smart grid system in Iqaluit which will assist in improving efficiency of diesel generation, enabling automated meter reading, and supporting future integration of alternative energy sources.

Delivering Energy to People

Provinces and territories are working on electricity transmission strategies to enhance capability and reliability, along with internal transportation and corridor planning. Additionally, the work of the Energy and Mines Ministers' Conference (EMMC) Regulatory Reform Working Group and the Canadian Council of Ministers of the Environment (CCME) have improved collaboration and communication between federal and provincial ministries to advance "one-project, one-review" for environmental assessments. Furthermore, provinces and territories are taking actions to enhance their own respective regulatory systems within or between jurisdictions. In addition to domestic improvements to deliver energy to people, at the August 2010 Council of the Federation meeting, Premiers agreed that provinces and territories and the federal government should move forward to develop a framework on the role of provinces and territories in international negotiations, agreements, and forums.



Provincial and Territorial examples:

- Alberta is supporting, through information sharing, collaboration, and research, responsible delivery of oil to all Canadian internal markets and to Canadian ports.
- Saskatchewan is supporting Husky Energy to evaluate the use of carbon dioxide to enhance the recovery of heavy oil while simultaneously storing carbon dioxide.
- Manitoba Hydro's transmission work includes developing a 1,364 km north-south high voltage direct current transmission facility (Bipole III) to address reliability concerns and is proposing to develop new transmission interconnections to the United States. Enhanced transmission infrastructure will also support the development of a more closely integrated Canadian east-west power grid.
- Ontario's Bruce to Milton transmission expansion project will connect more than 3,000 MW of clean, renewable energy to Ontario's grid, while the additional Niagara Tunnel, commissioned in early 2013, will increase the capacity for renewable generation at Niagara Falls by approximately 200 MW.

- Newfoundland and Labrador is participating in the Atlantic Energy Gateway initiative that was announced in 2009 in collaboration with other Atlantic Provinces and the Federal Government. This has funded a series of studies and workshops that were complementary to existing and planned utility and regional collaboration efforts within the region's electricity sector.
- New Brunswick continues to work collaboratively with Alberta, Québec and other Provinces on the Energy East crude oil pipeline project.
- Nova Scotia has developed a new regime for offshore oil and gas occupational and operational safety, which mirrors changes introduced federally and in Newfoundland and Labrador. The federal government and two provinces have been working to adopt a common approach to offshore energy safety to fill a gap in legislation.
- Pursuing its goal to meet 30% of its electrical energy requirements from renewable energy by 2013, the Province of Prince Edward Island is developing another 30 MW of wind power at Hermanville/Clearspring, which will consist of ten (10) Acciona AW 3000-116 turbines and produce an expected 114 GWH/year or approximately 10% of the Island annual electricity consumption.



- Yukon has worked with its utilities to conduct a conservation potential review. The utilities have developed a 5-year Demand-Side Management Plan (under review by the Yukon Utilities Board) to reduce residential and commercial electricity consumption by 2.5%.
- On June 25, 2013 the Government of the Northwest Territories (GNWT), the Government of Canada and Aboriginal governments signed a devolution agreement that provides the GNWT with responsibilities for land, water and resource management. Moving decision-making closer to those most impacted by development is expected to result in more efficient and effective regulatory processes.

Challenges and Opportunities

The Canadian Energy Strategy is intended to contribute to growth and prosperity for all Canadians while assisting provinces and territories in continuing to meet their environmental and social goals.

The following identifies the potential challenges and opportunities involved in achieving the intent of the Strategy and the Premiers' vision for energy development in Canada.

Infrastructure

The development of larger energy infrastructure projects often occurs in short periods of rapid expansion followed by long stable periods of little or no growth. These cyclical developments occur at varying rates in different sectors and geographic regions, and are often limited to provincial jurisdictions. Common infrastructure challenges in the electricity sector include transmission capability between jurisdictions, east-west transmission capacity to support large regional transfers of electricity, and long distances between power generation potential resources and markets, particularly in the North. Planned investments to replace and renew aging generation transmission and distribution assets provide a window of opportunity to introduce cleaner sources of generation and other improvements to mitigate the impacts of climate change.

Similarly, existing oil pipelines were not designed to handle the increasing level of demand. There are opportunities to improve energy transportation, including enhancing east-west infrastructure.

A Canadian Energy Strategy can help address these challenges by providing an opportunity for discussion and collaboration on the importance of energy infrastructure. Through coordinated efforts, barriers to energy trade can be identified and addressed and Canada's existing energy infrastructure could be further improved and expanded.

Economics and Innovation

Canadian jurisdictions possess a wide variety of energy resources and technologies, and each faces different production challenges, market prices, and the need for system upgrades and modernization. Specifically, non-renewable energy resources benefit from established production technologies and a dominant position in the market, but must contend with pricing volatility and other market forces. Emerging renewable and clean energy technologies are challenged by asymmetrical incentives and costs to commercialize.

The Canadian Energy Strategy can reflect the opportunities of established clean, renewable, and non-renewable energy sources as well as emerging enabling technologies. Through inter-jurisdictional collaboration, provinces and territories can explore ways to maximize the development of their respective resources in a socially and environmentally responsible way while advancing energy development across the country. There are also opportunities to partner with other stakeholders, including post-secondary institutions, to advance renewable and clean energy growth.

Human Resource Needs

Provinces and territories are using a number of different mechanisms to support the labour market and human resources needs of the energy sector in their jurisdictions. However, worker shortages for current and future energy projects remains a challenge in many regions.

The Canadian Energy Strategy can aim to develop and implement solutions for energy sector human resource requirements and address increasing needs for a variety of workers, including skilled trades, engineering, and supply and service workers. Particular areas to build on include: sharing accurate and timely projections of labour needs and skill requirements for major projects; supporting existing and future skills and labour market initiatives around credential recognition and labour mobility; and increasing employment opportunities for under-represented groups in Canada's energy development.

Access to Markets

Canada is fortunate to have one of the largest and most diverse natural resource endowments in the world which will help to accommodate growing international demand for energy. The United States is one of the world's largest energy consumers and producers and currently receives about 97% of Canada's total energy exports. While it is important to recognize the important role the US will continue to play as an export market, new markets for Canadian energy resources will be needed to fully realize Canada's potential as a global energy superpower. In addition, there are challenges associated with domestic market diversification and the ability for provinces and territories to access new markets within Canada.

Under the Canadian Energy Strategy, provinces and territories can work together to identify new opportunities as well as define barriers to energy market and energy product development and diversification. There are economic opportunities to add value to Canada's energy exports through cooperation. Domestic market opportunities within Canada can be realized through collaborating on rules and practices that ensure non-discriminatory, open access to transmission service across provinces and territories.





Intergovernmental Collaboration

Energy is critical for economic and social development. The security of supply is a growing concern for governments and industry affecting both geopolitical and global trade patterns. Canada's success in the international energy arena requires meaningful provincial and territorial engagement, as international negotiations directly impact the ability of each jurisdiction to manage the development of its natural resources.

Under the Canadian Energy Strategy, provinces and territories can identify approaches to ensure their interests are considered. While energy remains the responsibility of individual provinces and territories, jurisdictions can explore opportunities to collaborate to improve efficiencies, optimize infrastructure, and recognize synergies between environmental gains and economic benefits.

Regulatory Reform

The regulatory framework related to energy development in Canada has changed significantly since 2007, particularly with respect to environmental assessment and review. Significant advances have been made to improve the regulatory system, at both the federal and provincial/territorial level since 2007; however, increasing levels of energy development continue to add pressure on the regulatory system.

As a result, while some of the challenges first identified in 2007 may see improvements due to recent federal process changes, more progress is possible in areas such as: duplication and overlap in regulatory reviews between or within federal and provincial/territorial jurisdictions; the discretionary nature of federal decisions on scope of project and review process; uncertainty around process steps; and the capacity of regulators to engage in meaningful consultation with affected Aboriginal communities and local community groups to effectively process a rapidly growing number of project applications. By considering these challenges within their new context and recent federal regulatory reforms, the Canadian Energy Strategy can explore how to overcome the remaining hurdles to increase the efficiency and effectiveness of the regulatory systems, while ensuring our regulatory systems maintain the highest of environmental standards.

Information, Awareness and Education

Improving access to information about energy systems helps to increase knowledge and collective understanding about how Canadians and others use energy resources. Energy literacy and technologies enable consumers to make informed choices about the energy they use, while industry can utilize information when making investments.

Opportunities exist for Canadians to engage in a meaningful dialogue with their government on the future of energy in their respective jurisdictions. Ensuring credible energy information is available for all Canadians, as well as international audiences, may further contribute to enhanced understanding between jurisdictions.



Reducing Emissions and Improving Efficiency

The sustainable development of Canada's energy sector can help to address increasing concerns with greenhouse gas emissions and climate change. Efforts made in the energy sector to reduce carbon emissions will help to lead a transition to a lower carbon economy. Energy efficiency and conservation measures not only help reduce our impact on the environment, they also constitute a means of improving our energy security as well as helping control energy costs, improving profitability and spurring economic growth.

Through the Canadian Energy Strategy, there are opportunities for governments to reduce carbon emissions, mitigate climate change, and maximize energy efficiency. Through the strong leadership of provinces and territories in public policy, and encouraging greater adoption of initiatives, such as smart grid technologies and low carbon and energy efficient products and practices, opportunities can be optimized in this area.

Next Steps

As owners of the resources, provinces and territories have an essential role to play in developing Canada as a global leader in energy development, knowledge and technology.

The Progress Report and the collaborative work underway demonstrate the commitment of provinces and territories to the Canadian Energy Strategy vision and principles for energy development in Canada. It is important that provinces and territories maintain this momentum and continue their work and leadership in developing energy resources responsibly. As owners of the resources, provinces and territories have an essential role to play in developing Canada as a global leader in energy development, knowledge and technology.

The final Canadian Energy Strategy is targeted for release in the summer of 2014, and will build on the vision and principles by identifying actions that are pan Canadian in scope as well as examples of potential bilateral or multilateral opportunities. To achieve this, the ten teams will continue to advance their collaborative work by considering the input of stakeholders, and working across jurisdictions to identify actions and recommendations for inclusion in the Canadian Energy Strategy.

Co-lead Premiers have also indicated that stakeholder engagement will be critical to the development of the Canadian Energy Strategy. A stakeholder engagement workshop took place on June 24 - 25, 2013 to obtain input from a range of stakeholders on the strategy and to identify areas to be considered in developing the recommendations. The information resulting from the workshop has been provided to provinces and territories for consideration in further developing the recommendations. Additional stakeholder engagement approaches are also being explored. Through collaborative efforts across jurisdictions, the intent of the Canadian Energy Strategy will be realized.







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