

CANADIAN RENEWABLE ENERGY POLICIES

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The following offers an overview of Canadian federal and provincial policies that promote renewable energy. It is excerpted and summarized from a larger project prepared for the International Energy Agency.

Renewable Energy Policy: Electricity and Heat

The recent overall change in the composition of the renewable energy supply in Canada has been driven by a set of federal and provincial policy measures. The federal focus on renewable energy began in 1996-1997 with the publication of a blueprint for cooperative action with other stakeholders to accelerate the development and the commercialization of renewable energy technologies. Concern about climate change was the primary driver behind this initial blueprint. Following shortly after this blueprint the federal government held a series of consultations and in 1999 issued a set of Issue Tables that detailed ways to reduce greenhouse gas emissions. These Issue Tables described many of the incentives that were adopted in 2000-2001. This initial set of government policies lasted through 2006-2007, at which point a second generation of federal government policies took effect. Provincial governments began to adopt new renewable energy policies beginning in approximately 2004. The following section describes the first and second generation of federal renewable energy policies, as well as the provincial policies.

Federal Renewable Policies: 1998-2007

The federal government focused on developing policies that would stimulate the renewable energy industry during this first phase of renewable energy policy. One program, the Renewable Energy Development Initiative (REDI), focused on smaller scale and renewable heat programs. Another, the Wind Power Production Incentive (WPPI) focused on stimulating production of wind power from large facilities. Tax incentives were meant to further stimulate renewable energy capacity and a renewable energy capital fund was put in place to fund private sector research and development activities. Finally, a government procurement program focused on developing a stable market for renewable energy producers. This procurement program committed the government to meeting 20 percent of its electricity needs from emerging and renewable energy technologies. It was projected to result in 150 MW of new wind generation capacity through a purchase of 400,000 MWh each year. The following bullets describe the major initiatives begun in this period. Some are still in effect; others have been terminated.

- The federal government created the Renewable Energy Deployment Initiative (REDI) in 1998. REDI was a 9-year, \$51 million program designed to stimulate the demand for renewable energy systems for water heating, space heating and industrial process heating. Under REDI, Natural Resources Canada (NRCan)

undertook market development activities and provided an incentive to encourage the private sector, federal departments and public institutions to gain experience with active solar and efficient biomass combustion systems. Corporations were eligible for a refund of 25 percent of the purchase, installation and certain other costs of a qualifying system, to a maximum refund of \$80,000 per installation and a maximum of \$250,000 per corporate entity. In remote communities, business, institutions and other organisations were eligible for a refund of 40 percent of the purchase and installation of a qualifying system, up to a maximum refund of \$80,000 (CAN). REDI ceased operation in March of 2007.

- Through its Wind Power Production Incentive (WPPI) program, the Government of Canada aimed to provide financial support for the installation of 1000 MW of new wind energy capacity in Canada over five years. Participating wind energy producers initially received a financial incentive of 1.2 cents for every kilowatt-hour produced during the first 10 years of activity of their new wind farms. The incentive payment dropped to CAN\$ 0.010 per kWh for projects commissioned between 1 April 2003 and 31 March 2006, and then to CAN\$ 0.008 per kWh for wind farms that began operation during the last year of the program, which ends 31 March 2007. The program set aside a minimum capacity of 10 MW for each province and 1 MW for each of Canada's three northern territories. To avoid the possibility that rapid take-up in a few provinces would reduce opportunities in others, a maximum of 300 MW of qualifying capacity per province has also been set. The minimum size for projects was 500 kw unless the project was located in Northern Communities, in which case the minimum project size was 20 kw. The program ended up supporting 924 MW of wind energy. Although WPPI closed as of March 31, 2007 all existing projects will continue to receive their payments for the remainder of their 10 year incentive period.
- The Income Tax Act allows taxpayers an accelerated write-off (at up to 30% of the cost per year compared to typical rates of 4 or 20 %) of certain equipment designed to produce energy in a more efficient way or to produce energy from alternative renewable energy sources. The Canadian Renewable and Conservation Expenses is another category of fully tax deductible expenses associated with the start-up of renewable energy and energy conservation projects. Examples of the start up costs would be feasibility studies or resource assessments. These tax incentives are still in effect as of 2007.
- Sustainable Development Technology Canada (SDTC) is a not-for-profit foundation that finances and supports the development and demonstration of clean technologies which provide solutions to issues of climate change, clean air, water quality and soil, and which deliver economic, environmental and health benefits to Canadians. SDTC manages a \$550-million fund to stimulate the development and demonstration of new environmental technologies, particularly those aimed at reducing GHG emissions. This initiative depends upon the formation of creative and economically sound partnerships from the private sector, academia, not-for-profit organizations and federal and provincial/territorial governments. On

average, SDTC will fund up to 33 percent of eligible projects. SDTC was established by the Government of Canada in 2001 and commenced operation in November of that year, with the first round of funding announced in August of 2002. About 20 percent of SDTC's activities are related to energy production. SDTC continues operation as of 2007.

Federal Renewable Policies in 2007

The second generation of federal incentives for renewable energy began in 2007. Many of these replaced and expanded upon the original set of policies such as the wind production incentive and the Renewable Energy Deployment Initiative. The following bullets describe some of these programs.

- The ecoEnergy for Renewable Power program will provide an incentive of one cent per kilowatt hour for up to 10 years to eligible projects constructed over the next four years that generate clean electricity from renewable sources. These sources can include wind, small hydro, biomass, solar photovoltaic, geothermal, tidal and wave technologies. This program replaces the WPPI, but expands the set of technologies eligible for incentive payments.
- ecoENERGY for Renewable Heat, will provide \$36 million over four years to increase the adoption of clean renewable thermal technologies for water heating and space heating and cooling. The funds are provided for three program activities: (1) a rebate for the installation of solar thermal technologies in the industrial, commercial and institutional sectors; (2) support for pilot projects with utilities and community energy providers to test approaches to deploy solar thermal in the residential sector; and (3) work with industry to create new initiatives in the solar thermal and geexchange (ground-source heat pump) industries.
- The ecoTrust Program The Trust fund was established at the beginning of 2007 with surplus from the 2006 budget. Through this program, the national government grants funding to the provinces based on proposals and negotiations between the national government and the provinces. The funding covers a wide variety of project, including energy efficiency and renewable energy projects. All are designed to reduce emissions of greenhouse gases. This program provides a wide degree of latitude to the provinces to determine program details.

Federal Biofuels Policy

- In 2003, the federal government announced the Ethanol Expansion Program with the aim of expanding fuel ethanol production and use in Canada and reducing transportation-related greenhouse gas emissions. First round program allocations amounted to \$78 million and were directed to commercial projects planned in Quebec, Saskatchewan, British Columbia and Ontario. New production plants

now under construction will triple supplies over the next few years, according to Natural Resources Canada's CANMET Energy Technology Centre (CETC).

- Announced in 2007, the ecoEnergy Technology Initiative will fund research, development and demonstration (RD&D) to support the development of next-generation energy technologies needed to break through to emissions-free fossil fuel production, as well as for producing energy from other clean sources, such as renewables and bio-energy. It will also support the use and integration of clean energy in end-use sectors such as buildings and community systems. Because the program is so new, no project funding has yet been released.
- The primary financial incentive that the federal government provides to ethanol is an excise tax exemption of 10 cents CAN/liter for ethanol and 4 cents per liter for biodiesel.

Regulations that would create a nation-wide 5 percent renewable fuels standard are under development but not yet in effect. Under the proposed regulations, five percent of gasoline must be renewable fuel, such as ethanol, by 2010. The government also intends to develop a regulation for diesel fuel and heating oil to contain 2 percent average renewable content, such as biodiesel, by 2012. The biodiesel requirement is contingent upon verification that the fuel is safe and effective for the Canadian climate and conditions. Over two billion liters of renewable fuels will be required to meet these regulations – close to ten times the current ethanol production in Canada.

Provincial Renewable Energy Policies

Because renewable energy policy in Canada emanates from a mix of provincial and federal action, the provinces have also taken a leading role in the development of new policies. Policies tend to be either a renewable portfolio standard, a renewable energy fund or in one case, a mechanism that is similar to a feed-in tariff. The following describes some provincial policies.

Renewable Portfolio Standards

Renewable portfolio standards are one important element of Canadian provinces approach to encouraging renewable energy. As of 2007, six out of Canada's ten provinces had a renewable portfolio standard in place. Two others, Alberta and Saskatchewan, had either a non-binding target or an RPS under discussion. Following are examples that describe the standard in two Nova Scotia, Ontario and Quebec.

Nova Scotia

Renewable energy regulations call for renewable energy increases of five per cent to the total supply of electric energy by 2010, and 10 per cent by 2013, on top of renewables already in the system as of 2001. To meet the 2010 target, only independent power

producers will be able to bid on new renewable projects. Electric utilities pay a penalty up to \$500,000 a day for failing to meet these standards.

Ontario

The government set a goal of five per cent of all generating capacity in the province to come from renewable sources by 2007 and 10 per cent by 2010. In June 2004, the Ministry of Energy issued a Request for Proposals (RFP) for approximately 300 megawatts (MW) of new, renewable electricity capacity for Ontario. The 10 winning projects, totaling 395 MW, were announced in November 2004. In April 2005, the government announced two more renewables RFPs. The first called for up to 1,000 MW of new renewable energy supply from generation facilities between 20 MW and 200 MW. The other RFP sought up to 200 MW of new renewable energy supply from generation facilities with contract capacities less than 20 MW.

Quebec

Hydro Quebec has signed contracts for 1200 of wind and will phase in an additional 2,000 MW of wind through 2013, and additional wind as the hydro system develops.

Ontario Standard Offer Program

Ontario is the only province to have adopted a mechanism that is similar to the feed-in tariff that is common in Europe. In order to encourage investment in smaller projects, The Minister of Energy directed the Ontario Power Authority (OPA) and the Ontario Energy Board (OEB) to develop a standard offer program for small generators that use clean, renewable energy. Ontario's Standard Offer Program will make it more cost-effective for businesses and entrepreneurs to sell renewable power to the grid by setting a fixed price for small generation projects that use renewable energy. Under the plan, the Ontario Power Authority will purchase electricity produced by wind, biomass or small hydroelectric at a price of 11 cents per kilowatt-hour. The price for solar energy will be 42 cents per kilowatt-hour. Each individual project can produce up to a maximum of 10 megawatts. The project can be located anywhere in Ontario; however, projects must take into account distribution and transmission considerations. All new projects must connect directly to the distribution system.

Provincial Renewable Energy Policy: Biofuels

Some provinces provide even larger financial assistance for ethanol production. British Columbia provides an 11 and 15 cent per litre excise tax incentive for ethanol and biodiesel respectively. Manitoba provides a 25 and 11.5 cent per liter tax credit for ethanol and biodiesel fuel blends and Saskatchewan offers a 15 cent per litre tax exemption. Alberta and Ontario offers a set of financial capital and operating grants to new ethanol plants built in the province.

On June 17, 2005, the Ontario Government announced the Ontario Ethanol Growth Fund to support the production of ethanol fuel in Ontario. The Ontario Ethanol Growth Fund (OEGF) provides: capital assistance to help meet financial challenges (Capital assistance will not exceed 10 cents per litre of plant capacity); operating assistance to address changing market prices paid over a period of up to ten years based on a formula reflecting fluctuating market prices of corn, ethanol and crude oil. No operating grant will exceed 11 cents per litre of ethanol produced in a particular year; support for independent retailers selling ethanol blends; a research and development fund to pursue opportunities for research and innovation.

Since January 1, 2007 a Renewable Fuel Standard has been in place in Ontario, requiring 5% renewable content in gasoline. This is expected to add 600 million liters of ethanol to the Ontario fuel supply. Renewable Fuels Standards also are in Saskatchewan (7.5% as of October 2006) and Manitoba (10% ethanol content in 85% of the province's fuel) with no date yet specified. Quebec has set a goal of 5% ethanol by 2012 and expects that target to be met by cellulosic ethanol. The combination of these policies is projected to result in use of about 900 million liters of ethanol by 2010, or about 2.5% of the Canadian gasoline pool.