Q. Given the pending implementation of the Kyoto Treaty, are you aware of any new federal government incentive to promote the development of wind generation as a source of electricity and, if yes, please provide details of the incentive program(s)?

A. Two Federal Government incentives that Hydro is aware of that promote the development of wind generation as a source of electricity are:

(1) Wind Power Production Incentive (WPPI); and
(2) Green Power Purchase Initiative (GPPI)

Please see the information attached, which was obtained from the Federal, Natural Resources Canada Web Site, for details:

(1) **WPPI**

BACKGROUNDER

WIND POWER PRODUCTION INCENTIVE (WPPI): GENERATING 1,000 MEGAWATTS OVER FIVE YEARS

Wind Power in Canada

Interest in wind power as a promising source of electricity has grown significantly over the past few years and, in the past decade alone, Canada has installed about 200 megawatts of wind energy capacity. The Government of Canada's Wind Power Production Incentive (WPPI) encourages electric utilities, independent power producers and other stakeholders to gain experience in this emerging and promising electricity source.

WPPI provides financial support for the installation until 2007 of 1,000 megawatts of new capacity. The incentive represents about half of the current estimated cost premium for wind energy in Canada for facilities in good wind regimes compared to more conventional sources. This incentive is available to electricity producers for ten years based on the production of the wind farm.

Objectives and Benefits of the WPPI

The WPPI was established to help Canada obtain its climate change goals by achieving direct emissions reductions that will result from the installation of emissions-free wind energy. The incentive will also help establish wind energy as a full-fledged competitor in the electricity marketplace by the Kyoto Protocol commitment period of 2008–2012 and make this energy source a more competitive option for reducing greenhouse gas (GHG) emissions after this time frame.

WPPI is based on the principle of sustainable development of energy resources. It encourages participation from all regions and supports economic opportunity and innovation. The 1,000 megawatts of new capacity is expected to encourage approximately $1.5 billion in capital investments across Canada.

This initiative supports the Government of Canada's climate change priorities. Canada undertook to reduce its GHG emissions to six percent below 1990 levels during the period between 2008 and 2012. By displacing other electricity sources, the new wind capacity and continued momentum is projected to reduce GHG emissions by a further three megatonnes annually.

Program Operation

Natural Resources Canada (NRCan) operates the program and ensures that stakeholders in every province and territory have the opportunity to take advantage of wind opportunities across Canada.

To be entitled to the incentive, the prospective producer must negotiate and sign a contribution agreement with NRCan. The agreement will stipulate the intention of the producer to set up a wind farm, subject to the following criteria, among others:

1. the wind farm shall be commissioned between April 1, 2002, and March 31, 2007;
2. the wind farm shall have and maintain an independently metered inter-connection with the electric grid; and
3. the wind farm shall have a minimum nameplate capacity of 500 kilowatts. In northern and remote locations, the minimum size criteria will be 20 kilowatts.

In an effort to encourage regional participation, there is a minimum and maximum level of capacity for every province and territory, which will be reviewed on an ongoing basis.

Terms of the Incentive

The incentive is structured to encourage early participation in the program and to reflect the declining premiums for wind energy that are projected to occur over its tenure. The incentive can be claimed for every kilowatt-hour of net production during the first ten years of production as follows

Commissioning Date	**Amount of Financial Incentive for the Ten-Year Period**
April 1, 2002 – March 31, 2003, inclusive	1.2 cents per kilowatt-hour (¢/KWh)
April 1, 2003 – March 31, 2006, inclusive	1.0¢/KWh
April 1, 2006 – March 31, 2007, inclusive	0.8¢/KWh

Expressions of Interest

Since the introduction of the program in May 2002, industry has submitted 84 letters of interest for projects totalling more than 3,500 megawatts of new wind energy capacity. A letter of interest is the first step that a project proponent must take before becoming an eligible recipient of WPPI support.

Contributions to Date

To date, the Government of Canada has signed five contribution agreements totalling close to $40 million for 93 megawatts of new wind energy capacity. In addition to the Cypress Hill project in Saskatchewan, there are three projects in Alberta and one project in Ontario. These five projects, when completed, will represent more than 285 kilotonnes of GHG reductions annually.
For more information on the program, please contact:

Wind Power Production Incentive
Natural Resources Canada
1 Observatory Crescent, Building No. 2
Ottawa, Ontario K1A 0E4

Telephone: 877-722-6600 **(toll-free)**
Facsimile: (613) 947-0373
E-mail: wppi@nrcan.gc.ca

For more information on the Wind Power Production Incentive, please visit www.canren.gc.ca/wppi.

For more information on the Government of Canada's action on climate change, please visit www.climatechange.gc.ca.

(2) GPPI

Renewable and Electrical Energy Division

No.7 - November 27, 2000

Federal Purchases of Electricity from Emerging Renewable Sources Under Action Plan 2000

Natural Resources Canada (NRCan) publishes on an occasional basis the Renewable Energy Update, an information bulletin updating interested parties on renewable energy policy issues and programs. This issue provides information on recently announced renewable energy initiatives, particularly a commitment to purchase 20 percent of federal electricity requirements from emerging renewable energy sources.

Action Plan 2000
On October 6th, 2000, the federal government released the Government of Canada Action Plan 2000 on Climate Change which announced new measures to reduce greenhouse gas emissions in Canada. It is estimated that measures in the Plan will take Canada one-third the way to the Kyoto emission reduction target.

Action Plan 2000 includes several measures that promote the use of electricity from emerging renewable sources, including through federal purchases. Specifically, on page 8, the Plan contains the following measures for electricity from emerging renewable sources:

Expand the use of low or non-emitting energy sources by four times current levels by:

- purchasing 20 percent of federal electricity requirements from emerging low or non-emitting sources. The Government of Canada will seek partnerships with provinces and large electricity users in industry to support larger scale projects that will lower the cost of these technologies and make these sources of electricity a more viable option for industrial and residential consumers.
- providing a financial incentive to emerging renewable energy distributors to stimulate sales in residential and small-business markets. This will encourage shifts in consumer behaviour that will expand the market for electricity from new non-emitting sources.
- installing emerging non-GHG emitting technologies at government facilities.
- installing emerging renewable technologies both in demonstration projects and to supplement diesel generation in remote and northern communities, which are not connected to the main electricity grid.

There are also several other measures that promote the use of renewable energy, either directly or indirectly. For instance, the federal government will work with interested jurisdictions to develop standards for the safe connection of low and non-emitting distributed generation to electricity grids. Common methods will be developed to help electricity retailers provide consumer information on sources and environmental attributes of electricity supply. The Renewable Energy Deployment Initiative will extend its activities in the industrial sector. Efforts will be made to increase the supply and use of ethanol produced from biomass. And, a target was set to reduce greenhouse gas emissions in federal operations by 31 percent by 2010.

Options Report of the Electricity Industry Issues Table
Action Plan 2000 complements measures announced in the February 2000 budget and constitutes the first formal federal response to the work of the issue tables that were set up by federal and provincial energy and environment ministers in 1998 to consult on the implementation of the Kyoto Protocol. Measures for the electricity sector take their origin in the report on options prepared by the Electricity Industry Issues Table. In its November 1999 report, this Table proposed a basket of measures to ensure the availability of emerging renewable energy technologies by the commitment period, namely:

- government procurement of this type of electricity;
- providing a consumer rebate to stimulate the development of voluntary markets;
- using site-based generation systems in government buildings;
- the adoption of net metering tariff regulations by electric utilities;
- providing a per kilowatt/hour production credit to producers; and,
- small generation quotas.

Action Plan 2000 provides concrete federal action on the first four above-mentioned measures.

Federal Purchases of Electricity from Emerging Renewable Sources
About 20 percent of electricity generation in Canada is from high-carbon sources such as coal and fuel oil. This generation contributes 17 percent of Canada's anthropogenic greenhouse gas emissions and is part of the climate change challenge. The rest of electricity generation in Canada is from non or low-emitting sources, mostly hydroelectricity.

Given that federal buildings have a national distribution, about 20 percent of the electricity purchased by the federal government for its operations is from high-carbon sources. Current estimates are that 400 to 500 gigawatt hours (GWh) of high-carbon electricity purchases could be displaced in favour of electricity from emerging renewable sources on an annual basis.

Surveys show that residential customers will consider paying a premium for environmentally-superior electricity. The early experience with 'green' power programs in Canada and the United States shows that actual take up, while lower than expressed in surveys, is still significant. Industrial, commercial and institutional customers are also expressing interest.

In 1997, the federal government began purchasing electricity from non-emitting sources in Alberta. Enmax, the electric utility in Calgary, is currently providing 10 GWh and 2 GWh annually of wind energy to NRCan and Environment Canada, respectively, for a ten-year period to meet the requirements of their facilities in Alberta. To date, these purchases have resulted in annual reductions of about 11,000 tonnes of greenhouse gas emissions. The success of these two agreements subsequently led Enmax to launch Greenmax, an offering of wind energy to its residential and commercial customers.

Building on the initial success in Alberta, the Government of Canada announced in the 2000 budget that it would expand its purchases to procure $15 million of renewable energy in Saskatchewan and Prince Edward Island. An agreement was announced with SaskPower, the electric utility in Saskatchewan, on October 12, 2000, under which over 25 GWh of wind energy would be provided annually to federal facilities during ten years, leading to annual greenhouse gas emission reductions of about 20,000 tonnes. Negotiations are well advanced in Prince Edward Island.

Overall, the agreements in these three provinces are expected to provide about 50 GWh a year of wind

energy. Pricing formulas vary from one agreement to another. The price premium is expected to average around 2 to 3 cents per kilowatt/hour.

So far, several general principles have framed NRCan activities with respect to these pilots, including:

- pilots aimed at jurisdictions with high-carbon electricity where electric utilities were interested in considering the development of voluntary markets;
- the electricity from emerging renewable sources must be from new or expanded generation sources;
- third party certification is required to ensure environmental-friendliness of the new power, for example EcoLogo certification;
- emission reductions of greenhouse gases and other air pollutants are accounted and reported to NRCan.

Under Action Plan 2000, it is expected that the federal government will purchase an additional 400 GWh or so of emerging non-emitting sources of electricity. Assuming a continued focus on the displacement of high-carbon electricity, this 400 GWh would come from several jurisdictions, particularly Nova Scotia, Ontario and New Brunswick. Purchases in Alberta would also be substantially increased.

Additional Information
Action Plan 2000, the options report of the Electricity Industry Issues Table, as well as other information on federal climate change initiatives can be downloaded from the web site http://www.climatechange.gc.ca/.

It is expected that details on the actual implementation of the new federal measures under the Action Plan 2000 will be available in the spring of 2001. With respect to the implementation of the commitment to purchase electricity from emerging renewable sources, the federal government will build on the current pilots and expand its activities with the view of reaching the 20 percent target by March 31, 2006.

Information on NRCan's renewable energy market development activities can be found on the web site including the Renewable Energy Deployment Initiative (REDI) 1999/2000 Year-End Report. A copy of this report, as well as copies of various publications on renewable energy can also be ordered through the NRCan energy publication toll free line at 1-800-387-2000.

For further information on the Renewable Energy Update, please contact:

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