



Sustainable Energy Solutions

Renewing Canada's Commitment to Clean Power

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Summary

The Pembina Institute recommends that the Government of Canada renews and expands the ecoENERGY for Renewable Power Program in Budget 2009 to fund at least 12,000 MW of renewable power systems by the end of the 2013-14 fiscal year, including a specific set-aside for renewable energy technologies in northern and remote communities. In total, this would require an investment of \$200 million over 14 years. The extension should be applied to all low-impact renewables, including biomass, geothermal power, low-impact hydro, tidal, wave and wind energy. This is an important short-term step towards a much broader and longer-term scale-up of sustainable energy nationwide that needs to go beyond 2014 and beyond renewable electricity to include renewable heat and transportation and a massive scale-up in energy efficiency.

Rationale

In order to reduce emissions resulting from current electricity generation, Canada needs to rapidly increase the deployment of renewable energy systems. Realistic minimum national renewable energy goals are 12,000 MW by 2014 and 30,000 by 2020. Expanding the ecoENERGY Renewable Power Program (eERP) is crucial to achieve the former goal, while additional steps will need to be taken to achieve the 2020 goal, en route to a totally renewable power grid.

The eERP was originally announced in January 2007 with the goal of supporting close to 4,000 MW of new renewable electricity projects by the end of the 2010-11 fiscal year. However, more than 12,000 MW projects have already registered for the program¹ and, according to NRCan, the program's 4,000 MW will be fully allocated before the end of the 2009-10 fiscal year. The success of this program has meant that it will effectively expire one year prior to its scheduled completion date. Without renewal, at least 8,000 MW of renewable energy systems will effectively be stranded.

The eERP and its predecessor have been instrumental in the rapid growth of renewable energy in Canada. For example, wind power grew almost nine-fold, from just over 211 MW in 2002 to over 1,870 MW,² in only six years. This vaulted Canada into the world's top ten wind power producing countries³.

In addition to their important environmental benefits, renewable energy technologies are some of the fastest-growing global industries. Countries that have been most successful in deploying renewable energy systems — and creating jobs in doing so — have ensured that long-term and stable support is in place. As the current eERP will be fully allocated by the end of the 2009-2010 fiscal year, renewing and expanding this program immediately is crucial to create a *stable Canadian market* and thereby fostering long-term industrial growth.

¹ As of August 2008, source: NRCan.

² Source: Canadian Wind Energy Association

³ Source: World Wind Energy Association

Market stability is also key to reducing costs and risks while encouraging investment in local manufacturing. Delays in implementing support programs can lead to funding gaps, which create market uncertainty and may drive investment elsewhere. It is notable that the United States offers a Production Tax Credit set at more than twice the level of support that Canada's eERP provides. In 2007, the United States installed more wind energy than any other country in the world, and without a long-term commitment to renewable energy in Canada it is likely that investment will thus be lured across the border.

Based on the experience of Canada's past renewable energy production incentive programs, the recommended \$2.8 billion (over 14 years) expansion of the eERP is expected to spur over \$6 billion dollars of investment in Canada. The investment is also expected to create over 8,000 jobs by 2014 in one of the world's fastest growing industries.

Broad Use of Current Support

The eERP and its predecessor each operated under the principle of incenting clean power production by ensuring that all of the funds invested are directly linked to generated clean power. The program's 1 ¢/ kWh incentive over the first 10 years of the project's life has been critical in stimulating renewable energy development in Canada and can take credit for developments in every province⁴. This federal initiative has also encouraged numerous utilities and provincial governments to implement complementary renewable energy programs, goals, and portfolio standards of their own.

The program started in 2002 with incentives of 1 ¢/ kWh, and the eERP extension recommended here would result in payments until the year 2024, 10 years after 2014. Over this period of time, the absolute value of the support will have remained constant at 1 ¢/ kWh. **Adjusting for an average inflation rate of 2%, the 'real' level of support will have therefore declined by approximately 33% since the first incentives were awarded⁵ as technological and local capacity improvements have helped reduce the costs of renewable energy projects.**

The long-term cost of power generated by renewable sources is very stable and predictable relative to other energy investments. While continued global investment in renewable technologies has lowered installation costs, renewable energy systems remain capital intensive. In most cases, renewable energy systems are still not fully competitive with traditional energy sources, which have often received the economic benefits of traditional government investments, electrical transmission access and the right to emit CO₂ pollution at no cost. The 1 ¢/ kWh incentive helps to narrow this gap, and the exponential growth of renewable energy projects in Canada since the inception of a production incentive is evidence of its appropriateness.

In remote and Northern communities, however, a higher cost of construction, transportation and a lack of economies of scale has meant that a 1 ¢/ kWh incentive is not significant in tipping the balance to renewable energy systems. Remote communities have the highest energy costs in Canada, leaving them the most vulnerable to price fluctuations in conventional energy costs. In addition, these communities often have low financial capacity to respond to increased energy costs. A specific set-aside tailored to diesel-based communities will not only help reduce remote communities' dependence on non-renewable resources, but will also help increase local self-

⁴ Note: No projects have been implemented in any of the Territories due to higher relative costs

⁵ 1 ¢ in 2024 dollars is worth approximately 0.65 ¢ in 2002 at 2% inflation.

sufficiency. **Diesel generated electricity can be as much as three to fifteen times more expensive than electricity in Southern Canada, and a small portion of the renewable power incentive needs to be set aside to reflect these differences in costs in the North.**

Benefits of Renewable Power

Renewable energy technologies have many social, environmental, and economic benefits, including:

- minimal or no negative environmental or social impact;
- they do not deplete natural resources;
- help to protect air, land and water;
- have little or no net carbon or other greenhouse gas emissions;
- are safe today and not burden future generations with unnecessary risk;
- can be deployed rapidly. In contrast, nuclear plants and carbon capture and sequestration systems are likely to take at least a decade before they can be deployed, while renewable energy systems can be developed from start to finish commissioned in as little as 2 years from when a project is initiated.

Renewable energy sources also help ensure stable energy prices, as their fuel costs are not subject to global market pressures once the equipment is purchased and installed. Smaller distributed energy sources also increase the security of our energy supply. Increased use of renewable energy will also help boost local economies through job creation. According to the World Watch Institute's report *Renewables 2005*, more than 1.7 million direct jobs were created worldwide in renewable energy manufacturing, operations and maintenance in 2004. In 2008, Germany alone employs over 215,000 in its renewable energy industry, according to the German Federal Ministry of Economics and Technology⁶.

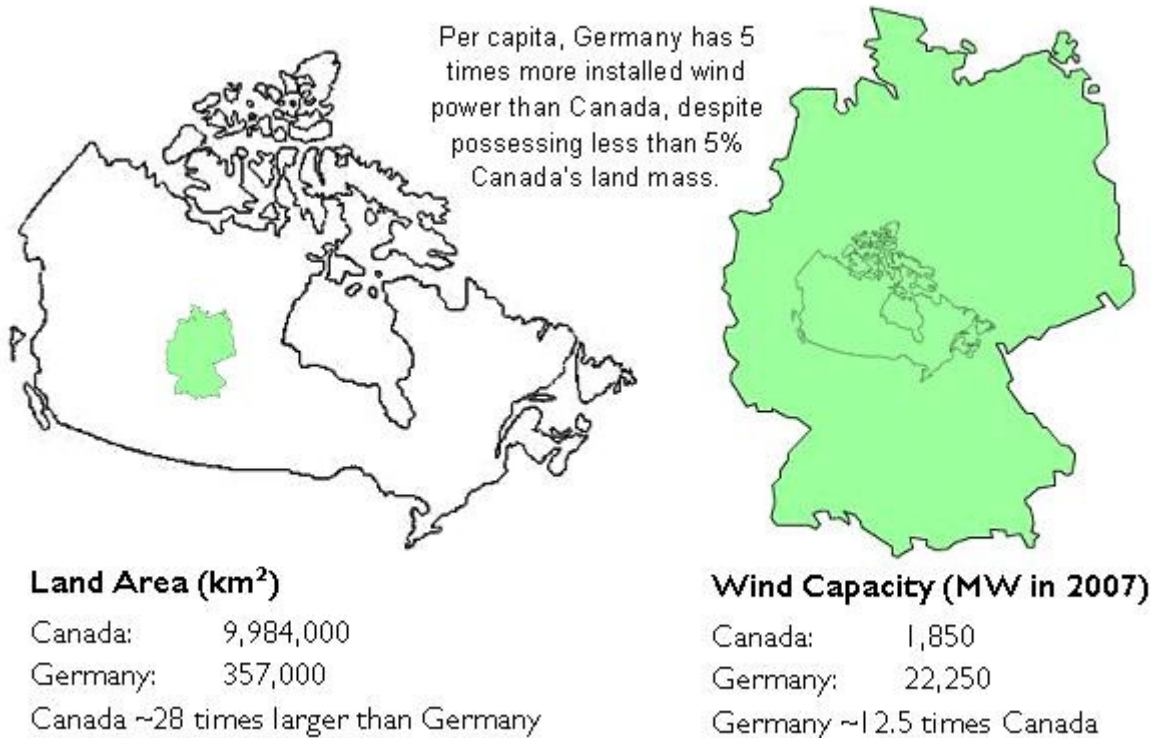
Analysis by the Pembina Institute indicates that the “employment created from low-impact renewable electricity would be comparable to or greater than that created by an equivalent capacity of fossil-fuel based generation.” Pembina’s analysis found that every 10 MW of low-impact renewable energy systems creates 10–30 person-years of employment in construction and operations, and results in \$20–\$35 million of domestic investment. Increasing Canada’s renewable electricity supply to 15% low-impact renewables by the year 2020 would result in at least 12,000 and up to 27,000 jobs.

Long-Term Context

Given its abundant renewable energy resources, Canada has the potential to become a global leader in renewable energy. While the eERP has been successful in assisting the development of renewable power to date, Canada has the ability and the need to go much further. Germany, for example, the world leader in wind power, with a land mass less than that of Newfoundland and Labrador already has more than 20 times the amount of installed wind power than Canada, as is illustrated below.

⁶ www.german-renewableenergy.com

Continued federal support for renewable power is crucial to ensure Canada becomes a leading player in the rapidly expanding global marketplace for clean, renewable power. Renewing and expanding the eERP is **an important near-term step in a longer-term strategy for Canada**. A renewed eERP will guard against the loss of current momentum and investment, and a set aside for remote communities will ensure that this support is truly pan-Canadian. However, additional important investments are urgently needed, some of which are outlined in the 2009-10 *Green Budget Coalition* submission⁷.



Additional steps that federal and provincial governments will need to take begin with the development of a comprehensive National Renewable Energy Strategy and the development of a Canadian Renewable Energy Act. A strategy would set out a vision and action plan for the long term transformation of Canada's economy to renewable sources of energy for electric power, heat and fuels. A renewable energy Act would enable the federal government to set targets for renewable energy in Canada, support provincial renewable energy policies, and provide long-term funding for supporting programs to realize Canada's potential in renewable power, heat and fuels. An expanded eERP needs to be in place while these additional, larger goals are pursued.

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⁷ www.greenbudget.ca