

Comments on Bill 100, The Electricity Restructuring Act

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1. THE SIERRA CLUB OF CANADA

These comments are submitted on behalf of the Sierra Club of Canada, a national environmental organisation active in Canada since 1969. The Sierra Club of Canada's mission is to develop a diverse, well-trained grassroots networking working to protect the integrity of global ecosystems.

The national office of the Sierra Club of Canada works closely with its chapters and groups across Canada, including the Ontario Chapter. The Sierra Club of Canada also has a national youth arm, the Sierra Youth Coalition. The organisation is non-profit and is proud to be democratically governed, with national elections for the board.

2. INTRODUCTION

The Ontario government has proposed a template for changing the structure of Ontario's electricity sector with Bill 100, The Electricity Restructuring Act.

The Sierra Club of Canada (SCC) believes that Bill 100 is an opportunity for Ontario to make the transition to a more secure and sustainable electricity system.

The Sierra Club of Canada, however, is deeply concerned that government will miss this opportunity if Bill 100 is passed in its current form. As it stands, Bill 100 does not address the issues that created Ontario's current electricity problems – nuclear power's high-costs and declining performance, leading to an escalation of pollution from Ontario's coal stations.

To address these issues, the Sierra Club of Canada recommends that the Social Policy Committee incorporate the following into Bill 100:

- Coal-fired and nuclear generation must be specifically excluded from the definition of "alternative" energy.
- The Conservation Bureau must be an independent agency, managed by its own board. At present, Bill 100 would make the Conservation Bureau a subsidiary of the Ontario Power Authority.
- Bill 100 should ensure public transparency and a secure electricity supply by stipulating that utilities close their nuclear stations at the end of their operational life, approximately 25 years. Utilities should also be required to report annually to the Minister of Energy on expected operational life-span of their reactors.
- The government's commitment to phasing out the province's coal plants should be explicit in Bill 100.
- Conservation, efficiency and renewable energies must be made the top priorities of the Ontario Power Authority.
- As a member of the Green Energy Coalition, the Sierra Club of Canada also supports the clause by clause suggestions presented by Greenpeace.

3. CONTEXT – ONTARIO AT A CROSSROADS

Ontario's electricity system is at a crossroads. The current Ontario government has committed to phase out Ontario's coal-fired electricity generation stations by 2007, an essential step to lowering air pollution and protecting the health of Ontarians. Meanwhile, it has recently been admitted that all of Ontario's nuclear stations will be forced to shut down because of premature ageing between 2008 and 2018 without massive expenditures of money and resources to keep them operating.

Bill 100 is important, then, because it will help determine how Ontario will replace approximately 75% of the province's electricity generation capacity. Ensuring Bill 100 does not repeat historic policy mistakes is essential if Ontario is to protect the environment and ensure its electricity.

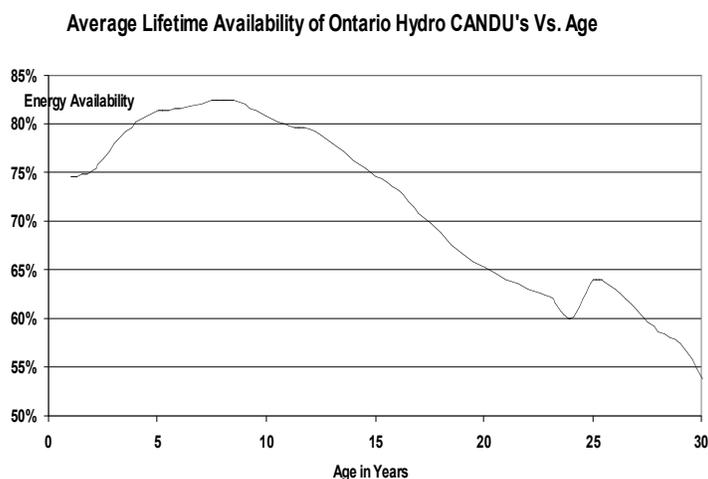
4. THE FAILED PROMISE OF NUCLEAR POWER

Like many countries in the 1960s, Ontario decided to buy into the post-war promise of 'clean, cheap and limitless' nuclear energy, investing heavily in the construction of Canadian-designed CANDU reactors. Forty years later, Ontario's experience shows that nuclear power has failed to deliver on its promises.

The high-cost and poor performance of Ontario's nuclear programme is at the heart of the province's electricity crisis. The \$ 38.1 billion in debt and liabilities that effectively bankrupted Ontario Hydro can largely be attributed to the high cost of the utility's nuclear programme.

Poor Performance has also plagued Ontario's nuclear reactors. **Figure 1** shows the cumulative "energy availability" of Ontario's nuclear stations. The Energy Availability factor measures the amount of energy that a plant produced as a percentage of its rated power output. The graph, which was developed by energy analyst Ralph Torrie, estimates the future output of the province's reactors by assuming that they will operate at the historic average of CANDUs of the same age.¹ The graph illustrates how CANDU performance peaks at about 10 years of age and then begins a steep decline.

Figure 1:



¹ For more information on this graph and details of declining CANDU performance, please see: *Phasing Out Nuclear Power in Canada: Toward Sustainable Electricity Futures*, Ralph Torrie et Parfette, the Campaign for Nuclear Phaseout, July 2003

Because of the declining performance of Ontario's reactor, the province has been forced to increase production – and pollution – at Ontario's coal stations. Greenhouse gas emissions from Ontario's coal stations increased by 120 per cent between 1995 and 2001 as a result.²

Aside from the air pollution created by nuclear power's poor performance, the problem of how to manage the 40,000 tonnes of radioactive at reactor sites remains unresolved. Ontario's Minister of Northern Development and Mines, Rick Bartolucci, recently said that he will "raise hell" if the federal government tries to put bury Canada's nuclear waste in Northern Ontario.³

5. CANDU'S LATEST FAILURE – PREMATURE AGEING

The principal cause of Ontario's looming electricity crunch is just the latest failure of the CANDU reactor to perform as advertised. Despite being predicted to run for 40 years at the time of their construction⁴, Canada's CANDU reactors have aged prematurely and will be forced to shut down after 25 years without massive and risky expenditures similar to that of Pickering.

Because of premature ageing Ontario will lose approximately 40% of its electricity generation between 2008 and 2018, creating Ontario's much talked about electricity crisis.

Ironically, Canada's nuclear industry is attempting to turn this crisis CANDU technology created on its head, calling for the province to rebuild old reactors and even build new ones.⁵ Given Ontario's heavy dependence on nuclear power, however, the province must plan for the closure of its nuclear reactors if it is to assure the province's energy security.

Ontario's nuclear operators should be obligated to report publicly on estimates of reactor life-span. In 2002, Ontario Power Generation responded to a request regarding the estimated refurbishment dates of its reactors, stating that such information was "...commercially sensitive information."⁶

Considering nuclear power's dismal history in Ontario, Bill 100 should stipulate that Ontario's reactors be phased out at the end of their operational lives. To plan for this phaseout, however, the province needs to ensure the province's nuclear utilities provide trustworthy information on the operational lives of their reactors.

² Ontario Power Generation, Towards Sustainable Development: 2002 Progress Report

³ James Wallace, "Not in our backyard, Bartolucci warns" *Osprey News Network*, June 10, 2004

⁴ For an illustration of the past assumptions on CANDU I operational lives, please see: *Ontario Hydro, Providing the Balance of Power*, Demand/Supply Plan Report, 1989, Figure 6-2, p. 6-5

⁵ John Spears, "Energy policy needed before lights go out - Nuclear plants will be worn out by 2018" *The Toronto Star*, Nov. 27, 2003

⁶ Personal Communication, John Earl to S.-P. Stensil, July 22, 2002

6. LEADING THE WAY – NUCLEAR PHASEOUT COUNTRIES

Following Three Mile Island, Chernobyl and pervasive cost over-runs in the 1980s, the Western world, more or less, stopped building nuclear power stations. Because no one is building new reactors, it is now expected that eighty per cent of the world's current installed nuclear power capacity will shut down by 2030 as ageing reactors close.⁷

A number of forward-looking countries have decided to get out in front of global trends and phase out their nuclear reactors by phasing in renewable energies and energy efficiency programmes. Germany, Sweden, Austria, Belgium, Spain and Italy have all decided to go non-nuclear.

Germany, which currently produces around 30% of its electricity from nuclear stations, adopted its nuclear phaseout policy in 2000, dictating that each of the country's reactors must close at the end of its 32-year operational life. Notably, Germany's decision to phase out nuclear power was made in conjunction with the country's decision to move to a more sustainable energy system.

In the words of German Environment Minister Juergen Trittin, "We want to start an energy policy for the future. We want to make it a seamless policy. Renewable energy sources, more energy efficiency, saving energy and phasing out nuclear energy are all elements of a responsible and sustainable energy policy."⁸

Similar to Ontario, Germany was anticipating the need to undertake expensive reconstruction projects to keep its ageing reactors operable in the coming years when it decided to phase out its nuclear reactors.⁹

Since 2000, Germany has installed over 14,000 MW of wind power and over 100,000 solar panels on residential homes across Germany. As part of its nuclear phaseout plan, Germany shut down its oldest nuclear reactor, the Stade nuclear station, in November 2003.

7. FROM CRISIS TO OPPORTUNITY – TOWARD A SUSTAINABLE ELECTRICITY SYSTEM

Ontario can turn its electricity crisis into an opportunity by, for the first time, developing meaningful policies to develop the province's energy efficiency and green energy potential. We must also avoid repeating past mistakes, such as spending billions to keep the province's reactors running.

Energy efficiency and conservation must come first. A recent study by the Pembina Institute showed that Ontario could reduce electricity demand by 40%.¹⁰

⁷ Peter Beck and Malcolm Grimston, *Double or Quits? The Global Future of Civil Nuclear Energy*,

⁸ BMU, *Last Hurdle Taken for Act on Phasing Out Nuclear Power*, news release, (Berlin: BMU, February 1, 2002)

⁹ Lutz Metz and Annette Piening, "Phasing-out Nuclear Power Generation in Germany: Policies, Actors, Issues and Non-issues," *Energy and Environment* 13(2): 161-162.

Bill 100's proposal for a Conservation Bureau is an excellent proposition. However, the Conservation Bureau must be an independent agency and not a subsidiary of the Ontario Power Authority. Similarly, Ontario should set *minimum* goals for conservation.

We also need to take renewable energy seriously. The Pembina Institute's report estimates that renewable energy could provide 30% of Ontario's supply by 2020. Again, the province should set *minimum* goals for the deployment of renewables. To ensure deployment, we should also not be afraid of copying policy that works. Germany's 'feed law' or 'renewable tariff' has worked extremely well and should be used here in Ontario.

Ontario should learn from Germany's example by declaring an official phaseout of nuclear power as well as the province's coal stations. Because of premature ageing, Ontario has a de-facto nuclear phaseout schedule. We should ensure stable supply by stating our intention to let our reactors shut down and get on with developing efficiency and renewables.

Notably, Germany is also one of the international community's biggest supporters of Kyoto. Ontario should examine how it can work with the federal government how to both meet the province's energy needs and assist Canada meet its Kyoto Protocol obligations.

¹⁰ Winfield, Horne, McClenaghan & Peters, *Power for the Future: Towards a Sustainable Electricity System for Ontario*, Pembina Institute and the Canadian Environmental Law Association, May 2004