

“Dirty Coal and Grid Reliability Challenges”

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For

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It is great to have the opportunity to speak to you this morning about dirty coal and Ontario's grid reliability challenges.

Ontario's electricity system is at a crossroads. It is Government policy that we are going to phase out our dirty coal plants "in the earliest practical time frame that ensures adequate generating capacity and electricity system reliability." In addition, virtually all of our nuclear plants will come to the end of their economic lives over the next 20 years. Therefore we have an unprecedented opportunity to re-build our electricity system from the ground up.

There are two competing visions about how Ontario should meet its electricity needs in the twenty-first century.

The first vision is the status quo vision consisting of more nuclear mega-projects, more high-voltage transmission lines and retaining our dirty coal-fired power plants. This vision is being championed by the OPA on behalf of OPG, Bruce Power, Hydro One, the Association of Major Power Consumers in Ontario and the Power Workers Union.

According to the OPA, the coal plants should remain in-service for two reasons. First, to provide Ontario with “insurance” power if the nuclear plants and the proposed new transmission lines are not able to achieve their in-service or production targets. Second, according to the OPA, the coal plants should remain in service to make profitable export sales to the U.S. Specifically, under the OPA’s plans, Ontario will export 14 TWh of coal-fired

electricity to the U.S. in 2010. This is equivalent to 47% of our total coal-fired electricity generation last year.

The alternative vision for meeting Ontario's electricity needs is as follows:

- a) phasing-out our dirty coal plants by 2009 as promised by Premier McGuinty; and
- b) moving Ontario towards a 100% renewable grid-supplied electricity system by aggressively promoting energy efficiency and demand response; new renewables; and natural gas-fired combined heat and power plants.

I am glad to report to you today that this alternative vision is supported by the vast majority of the people of Ontario.

And the good news is, that with strong political leadership, we can phase-out our dirty coal-fired power plants by 2009; and start moving Ontario towards a 100% renewable grid-supplied electricity system.

Since being elected to office, in October 2003, the McGuinty Government has taken many actions to increase Ontario's electricity supplies and promote energy conservation. As a result, a complete coal phase-out is now within our grasp. That is, in 2009, the Nanticoke Generating Station will only be needed to provide Ontario with reserve margin capacity. Therefore, Dalton McGuinty can keep his coal phase-out promise, without jeopardizing our electricity system reliability, by simply taking the following two actions.

First, direct Ontario Power Generation (OPG) to convert Nanticoke's boilers from dirty coal to cleaner-burning natural gas so that Nanticoke can provide our power system with clean back-up or insurance power.

Second, direct OPG to convert the Thunder Bay coal plant's boilers to natural gas.

If Nanticoke's boilers are converted to natural gas, they will only be used on extremely hot summer days, and therefore their impact on Ontario's natural gas consumption will be negligible.

According to the OPA, the total capital cost of converting **all** of Nanticoke's boilers to natural gas would be \$540 to

\$750 million. On the other hand, installing the best end-of-pipe pollution control devices on **just** three-quarters of Nanticoke's capacity would cost \$1.9 billion and would not reduce Ontario's greenhouse gas emissions by a single kilogramme.

Converting the Nanticoke and Thunder Bay Generating Stations' boilers from dirty coal to cleaner-burning natural gas will provide Premier McGuinty and Ontario with multiple benefits.

1. It will permit Premier McGuinty to keep his coal phase-out promise;
2. It will prevent at least 657 deaths per year in Ontario;

3. It will reduce Ontario's total (financial, health and environmental) costs of electricity generation by \$1.7 billion per year; and
4. It will provide Ontario with 50-80% of the total greenhouse gas emission reductions the entire province needs to meet its Kyoto Protocol obligations in 2010.

Simply put, a coal phase-out is Ontario's lowest-cost option to achieve a dramatic reduction in air pollution and to meet its Kyoto Protocol obligations.

However, the coal phase-out is just the first step in meeting Ontario's electricity needs over the next twenty years.

I would now like to describe how Premier McGuinty can move Ontario towards a 100% renewable grid-supplied electricity system for our grandchildren.

1. The first step must be aggressive actions to reduce Ontario's peak day electricity demands. Ontario's peak day demand occurs on hot summer days. Moreover, these peak day demands last for only a very short period of time. To be specific, the top 10% of Ontario's annual system demand lasts for less than 2.58% of the year. Needless to say, it is very costly to meet the last 10% of our annual system demand. In fact, the cost is approximately 60 cents per kWh. As a consequence, it is much cheaper to reduce our peak day demand than it is to build new electricity generation and transmission

capacity. Therefore the OPA should pay customers to shift some of their consumption from peak to off-peak periods on high demand days. That is, the OPA should pay our local electric utilities and large commercial, institutional and industrial customers 60 cents per kWh to shift some of their consumption from peak to off-peak periods on peak demand days.

2. Second, Ontario's municipal electric utilities (e.g., Toronto Hydro) should be lead agencies with respect to the promotion of energy conservation and efficiency. And I say this because the OPA has neither the will nor the ability to aggressively promote energy conservation.

3. Third, we must aggressively promote end-use fuel switching from electricity to renewable energy and natural gas. As a result of the former Ontario Hydro's Go Electric campaigns, 13.5% of Ontario's total electricity consumption is for space and water heating. This is economically irrational. Better options include hybrid solar/electric water heaters; geothermal heat pumps; and switching to natural gas. The OPA should pay Ontario's electric and gas utilities to switch customers from electric space and water heating to renewable energy and natural gas. To be specific, the OPA should pay the utilities the **full** avoided cost of electric space and water heating for switching customers to renewable energy or natural gas.

4. Fourth, we must aggressively promote combined heat and power generation. Virtually every building in Ontario uses natural gas to provide just one service, namely heating. It is much more efficient to use natural gas to simultaneously produce two services heat and power. A natural gas-fired combined heat and power (CHP) plant can have a total energy efficiency of 80 to 90% versus the 34% efficiency of Nanticoke and the 30% efficiency of our nuclear reactors. According to a report prepared for the Ontario Ministry of Energy, Ontario's total CHP potential in 2020 exceeds 16,000 MWs. We must create a thousand points of light across our great province by converting our schools, our recreation centres, our shopping malls, our condos, our office towers and our factories into small scale power plants.

In order to promote the CHP, we need to take the following actions:

- a. The Minister of Finance should exempt CHP projects from the 0.7 cent per kWh nuclear debt retirement charge;
- b. The OPA should establish a standard offer programme for CHP projects of 10 MW or less. The standard offer price should equal the full cost of conventional electricity supplies including transmission and distribution costs;
- c. The OPA should establish an annual competitive bidding process for procuring CHP projects in excess of 10 MW.

If the Government of Ontario implements these recommendations, we firmly believe that Ontario will have no need to re-invest in nuclear power. However, if the Government believes that new nuclear reactors are a desirable option for our province, it should subject all nuclear power proposals to the following market rules.

First, to protect Ontario's consumers, the province should only consider proposals for new nuclear reactors from investor-owned power companies.

Second, all proposals for new nuclear reactors must be required to compete on a level playing field with water-power and natural gas-fired power plants.

Third, nuclear power companies, like gas and renewable power companies, must not be allowed to pass their capital cost overruns on to the OPA or electricity consumers.

Fourth, nuclear power companies, like gas power companies, that fail to achieve their annual capacity utilization targets should be subject to strict financial penalties.

Fifth, nuclear power companies, like renewable and gas power companies, should be 100% responsible for their decommissioning and waste disposal costs.

Conclusion

In conclusion, I would like to remind you that at the beginning of the last century, Sir Adam Beck and Ontario Hydro did two very important things. First, they phased-out Ontario's dirty coal-fired power plants for the first time. And second, they created a virtually 100% renewable electricity system that lasted from almost half a century.

We now have the opportunity to create, once again, an ecologically and financially sustainable 100% renewable electricity system for our grandchildren.

That is, once again, we have the opportunity to create an electricity system for Ontario that is the envy of the world.

We must not lack the will.

Thank you for your attention.