

Blowing away taxpayers

Wind power is unreliable, expensive and doesn't result in lower CO2 emissions. Why is Ontario still rushing ahead with it?

Michael Trebilcock, Financial Post

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Pascal Rossignol, Reuters .

The Ontario government's rush into renewable energy, and industrial wind turbine-generated electricity in particular, is likely to reveal the law of unintended consequences. The government needs to rigorously re-evaluate this precipitous policy before committing billions more in subsidies to it.

First, as to the cost of wind-generated electricity, the feed-in tariff for on-shore wind turbines in Ontario provided for under the Green Energy Act is 13.5¢ per kWh (and higher for smaller projects). This is more than twice the prevailing rates for electricity on the spot market in Ontario (less than ¢6 per kWh).

This cost increase will be fed through to industrial, commercial and residential consumers through various additional charges on their electricity bills. In addition, further expenditures are required to enhance and extend the transmission grid to accommodate these projects. A 2009 study by London Economics Consultancy, *Examining the Potential Costs of the Ontario Green Energy Act 2009*, estimates that the higher costs of green power will add hundreds of dollars to the average electricity bills of households throughout Ontario.

Adam White, President of the Association of Major Power Consumers of Ontario, states: "The situation is not sustainable because it will leave companies paying higher rates than competitors in other jurisdictions." Toronto energy lawyer, Peter Murphy, states: "The government is sitting on a political time bomb." Recent studies of wind power in Denmark, Germany and the U.K. reach similar conclusion about the impacts of renewable energy on electricity costs in these three jurisdictions. The Ontario government's estimate of an increase in electricity costs per year from its renewable policies of 1% a year seems to lack any justification or credibility.

The contributions of industrial wind power to reducing CO₂ emissions are at best marginal. Massive numbers of turbines are needed, and because of their intermittency and unpredictability, they require the availability of back-up generation, especially for peak-load capacity. In Denmark, Germany, the U.K., and now Ontario, this has entailed the construction of additional fossil fuel plants (typically natural gas plants) to provide reliability. These plants dramatically reduce the net contributions of wind power to CO₂ abatement, which come at an extremely high cost relative to other abatement strategies (such as real-time pricing of electricity).

In the case of base-load electricity, most of this is provided in Ontario by carbon-clean hydro and nuclear power so that, to the extent that wind power is used to provide base-load electricity, it displaces lower cost hydro and nuclear power and often results in exports of surplus power, often at give-away prices.

In October 2007, the Ontario Power Authority (OPA) -- the government's own agency, tasked with planning Ontario's power system and now entering into long-term contracts with renewable energy producers -- published its Integrated Power System Plan, where it analyzed a "high wind power" scenario for the province, and concluded: "Since wind generation has an effective capacity of 20% compared to 73% for hydroelectric generation, additional generation capacity with better load-following characteristics would need to be installed.

"This needed capacity will likely have to be obtained by installing additional gas-fired generation. Thus, in addition to incurring further capital costs for the gas generation installation, higher gas usage would be expected to make up for the reduced amount of renewable energy from wind compared to that from hydroelectric generation or this alternative. Therefore, this alternative would result in higher greenhouse gas emissions." The OPA concluded: "Wind and solar power will never be more than a niche supplier of power in Ontario."

What did the OPA see as the better alternative? Renewable hydro power sites in northern Ontario (which it identified). The OPA stated: "The hydroelectric generation developments included in the plan are cost effective compared to developing additional wind generation; this comparison includes the cost of transmission reinforcements. In conclusion, development of major hydroelectric generation north of Sudbury, with major reinforcement of the transmission north of Sudbury, is the preferred alternative compared

to developing additional renewable generation in southern Ontario and other parts of northern Ontario."

This begs the obvious question, what has changed in two years? Beyond these sites in northern Ontario, in the medium to longer term there would be enough northern Canadian hydro power in Manitoba, Quebec and Labrador to satisfy Ontario's needs for decades. If Boston and New England can depend on northern Canadian hydro power, why not Toronto? Moreover, prior demand projections for electricity need to be revised downwards to reflect not only the current economic recession (demand was down more than 6% in 2009 over 2008), but the long-term contraction in a number of Ontario's electricity-intensive heavy manufacturing industries, such as steel and automobile manufacturing.

The potential contributions of renewable energy to the creation of jobs in the province require a heavy dose of skepticism. While the government has claimed that it plans to create 50,000 new green jobs in the province over the coming years, the additional burdens on industrial, commercial, and household consumers from higher electricity costs associated with renewable energy will kill existing jobs. Recent studies in Denmark and Germany find that very few net new jobs have been created as a result of renewable energy policies. In the case of Denmark, they have cost between US\$90,000 to US\$140,000 per job per year in public subsidies, and in the case of Germany, up to US\$240,000 per job per year. According to a column by Randall Denley in the Ottawa Citizen of Jan. 24, 2010, the new manufacturing jobs entailed in the massive Samsung renewable project recently announced by the Ontario government will cost \$300,000 each in public subsidies.

In an SNL Financial news wire report of Oct. 23, 2009, the Ontario Minister of Natural Resources was reported as stating that the agency had temporarily stopped accepting applications for proposed wind energy projects because it had already received 500 such applications and needed to make sure that it had appropriate processes in place before taking any more. Obviously, the massive public subsidies being offered have provoked a corporate feeding frenzy.

But corporate enthusiasm for subsidized wind power should not be confused with the longer-term public interest. In terms of cost, CO₂ and jobs, wind power attracts a failing grade. It gets worse, with poor marks for localized impacts on flora and fauna, for potentially adverse health effects on local residents from persistent exposure to low intensity turbine noise, for potentially adverse impacts on local property values and for an environmental review process which the Ontario Environmental Commissioner describes as "broken." All render renewable energy policy, at least as currently conceived by the Ontario government, one of the least compelling options in the challenging economic environment in which the province finds itself now.

Picking technological winners in fields such as this, and then picking winners within classes of technology (such as Samsung) are fraught with the risk of costly errors. A better policy orientation would be first to price all sources of electricity, including

environmental costs , and let consumers respond accordingly, and finally to subsidize breakthrough R&D in sectors that are significant sources of carbon emissions.

As Jan Carr, former CEO of the Ontario Power Authority, puts it in a recent article: "The recent rush to "green" Ontario's electricity system has produced a largely ad hoc approach to the selection and investment in power generation technologies that will unnecessarily increase the cost of electricity with far-reaching economic and social effects... Pricing carbon would have the advantage of continuing a century of economically rational development of the electricity system as an essential underpinning of modern society. To do other than proceed on an economic basis is to risk massive economic distortions... The alternative process of picking winners and losers in renewable energy technologies, based on perceptions and public opinion polls, puts us all at considerable risk."

Before mortgaging its long-term future by awarding hundreds more 20-year fixed-price contracts to wind developers, the province of Ontario urgently needs an independent, objective, expert investigation, perhaps by the Auditor-General, of the prospective economic, environmental and employment effects of wind power and other renewable energy policies in the province.

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