

January 6, 2011

Andrea Stoiko
Policy Coordinator
Ministry of Energy
Regulatory Affairs and Strategic Policy
880 Bay Street
Toronto Ontario
M7A 2C1

Re. EBR Registry Number: 011-1701 (Draft Supply Mix Directive)

Dear Ms. Stoiko,

We have reviewed the above-noted EBR posting and provide the following comments.

The theme of these comments is that the Draft Supply Mix Directive and the associate Long Term Energy Plan (LTEP) are poised to drastically raise electricity costs for Ontario consumers and create significant risks for the reliability of Ontario's power system.

In an effort to understand better the basis for the Draft Supply Mix Directive and the LTEP, we provided to the Ministry of Energy on November 30th a list of questions addressing apparent information gaps, double counting, inconsistent data, and unanswered procedural questions. These questions are attached as Appendix A. The response provided by the Ministry December 2nd¹ was entirely unresponsive, indicating that the Ministry was not prepared to assist the review process with any explanations of technical aspects of the plan. Of the concerns expressed in our November 30th letter, a particularly grave concern is the rate outlook for commercial customers not eligible for targeted relief programs such as the GA cost shifting as per O.Reg 398/10, the Clean Energy Benefit, the Northern Industrial Energy Rate Program, the Northern Ontario Energy Credit, or the Ontario Energy and Property Tax Credit.

Another major concern we have is with respect to the operability of Ontario's future power system. Although the LTEP fails to provide sufficient information to assess the capacity and energy outlook assumed, using assumptions we believe reasonable it appears that the government is forecasting a supply mix for 2030 where about 83% of Ontario's generation will come from inflexible baseload and intermittent supplies. There is no precedent for such a power system anywhere in the developed world to our knowledge. If the government is assuming some breakthrough in electricity storage technology to keep our power system operable, that would add to the risk and uncertainty of the plan.

¹ A copy of the body of the reply is provided at <http://tomadamsenergy.com/?p=902>.

To illustrate the gravity of the problem of intermittent generation, note that in the annual period from July 2009 until June 2010, the output of the province-wide wind fleet changed by at least 18% within four hours twice per day on average. Under the Draft Supply Mix Directive and the LTEP, in the order of 8 GW of wind appears to be called for by 2018. Wind output fluctuations within 4 hours in the order of 1.5 GW should be expected twice daily, given this fleet size.

When the IESO assessed the operability of the previous IPSP, it relied upon analysis from two prominent wind power companies, GE and TrueWind, in concluding that the previous wind power targets would not challenge the operability of Ontario's grid. GE has since acknowledged that key analytical elements of that analysis that relate to the correlation coefficients of wind farm output as a function of distance were flawed. This acknowledgement was tabled at the IESO's Wind Power Standing Committee in May 2010. GE's acknowledgment suggests that a thorough review of the IESO's operability assessment is in order.²

The load forecast upon which the LTEP and Draft Supply Mix Directive are based appears to assume that the massive coming rate increase will not cause demand to decline further. We believe that consumer response to rapidly rising prices should be carefully examined.

We note with concern that none of the economic implications of converting existing coal units to biomass are discussed in the LTEP or the Draft Supply Mix Directive. This lack of disclosure represents a major barrier to informed public discussion about the consequences of the policies we have been invited to comment on.

Whereas the government recently terminated the relatively efficient gas-fired generator proposed for Oakville, the LTEP and the Draft Supply Mix Directive anticipate repowering inefficient boiler units on gas. Should boiler units be repowered, the difference between the Oakville and boiler units would represent a major loss of efficiency. That efficiency loss should be quantified and assessed carefully from a prudence perspective.

In addition to our concerns with respect to the cost and reliability of electricity supply, we are also concerned about the lack of transparency in electricity planning and decision making. While the LTEP trumpets investment plans of a consortium of Korean multinationals and while this consortium has enjoyed many favourable directives and regulations, we note that neither Samsung nor Korea Electric Power Corporation appear on the Ontario government's Lobbyist Registry with any identified interest in electricity matters.

Sincerely,

Tom Adams and Parker Gallant

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Appendix A

² A discussion of the associated issues is provided at <http://tomadamsenergy.com/?p=437>.

November 30, 2010

Questions submitted to the Ontario Ministry of Energy and Infrastructure regarding the government's Long Term Energy Plan prepared by Tom Adams and Parker Gallant.

- 1) Has the Minister issued a directive to the OPA or the OEB in respect to this Plan? If it has been issued, we can't find it posted to either website.
- 2) Regarding the OPA's IPSP following the direction of the LEP:
 - a) When will the IPSP be publicly available?
 - b) Will the OPA present the IPSP to the OEB for approval? If so, when is the expected filing?
- 3) Regarding the chart on Page 7 listing six "Accomplishments":
 - a) Regarding the statement "to bring about 8400 MW of new supply online":
 - i) Please provide a breakdown of this new 8400 MW supply by fuel type and approximate date of government approval to proceed (larger initiatives only).
 - ii) Please reconcile with 8400 MW figure with the chart on page 65 showing Installed Capacity as of end of 2003 and 2010.
 - iii) If there are any differences between the 8400 MW figure and basis for the Minister's statement (page 3) claiming "over 20% (more than 8000 MW) of new supply to the system", please identify those differences
 - b) Regarding the statement "more than 1,500 MW of clean, renewable energy online since 2003", please indicate whether any of this claimed capacity is double counted against the 8400 MW referred to above.
 - c) Regarding the statement "electricity prices have increased on average by about 4.5% per year over the past 7 years", please provide the supporting data. Specifically with respect to residential customers using 800 kWh/month, what has been the average compounded rate of increase over the past 7 years?
- 4) The "Overview" section on page 7 contains this statement "Since 2003, Ontario has decreased the stranded debt by \$5.7 Billion. We note that the OEFC audited March 31, 2010 annual report says nothing about the current "stranded debt". Please provide the data supporting this statement.
- 5) Page 3 in the Minister's forward indicates "Energy etc. etc. employ more than 95,000 Ontarians". Please provide the breakdown of this statement with care taken to avoid double counting.
- 6) With regard to the rate projections shown in Figures 14 and 15:
 - a) Please provide a breakdown of the rate in 2010 and 2015 by major component (eg. T, D, commodity, regulatory charges, etc.)
 - b) Please provide a rate projection for commercial customers not eligible for targeted relief programs such as the GA cost shifting as per O.Reg 398/10, the Clean Energy Benefit, the Northern Industrial Energy Rate Program, the Northern Ontario Energy Credit, or the Ontario Energy and Property Tax Credit.
 - c) For commercial, residential, and industrial customers, please provide the average annual rates that applied in 2003.

- d) Please indicate what assumptions underpin the rate projections with respect to the treatment of interest during construction for major projects (i.e. is Construction Work in Progress [CWIP] captured in rate base or is CWIP capitalized during construction as per historic practice in Ontario's energy sector.)
 - e) Please indicate the assumptions made with respect to the future of the Debt Reduction Charge.
- 7) There are a number of forecasts included in this plan for which we would ask for the source. Those are:
- a) "the addition of 1.1 million households will increase demand moderately" (15 % between 2010 and 2030)-page 14,
 - b) "about one in every 20 vehicles on the road will be electric"-page 8
- 8) How much electricity is forecast to be required to be generated to recharge 500,000 electric vehicles (based on 20% of the current registration of 10.1 million vehicles). How has this been accounted for in the LTEP for the year 2020 & beyond?
- 9) Regarding the nuclear elements of the plan:
- a) It appears that the LTEP's assumes that nuclear will operate at a capacity factor of 85.5% in 2030. Please provide the nuclear capacity factor assumptions underpinning the LTEP.
 - b) With reference to the statement "the remaining nuclear capacity of 10,000 MW at Darlington and Bruce will need to be refurbished and modernized", please explain the basis for the 10 GW number. Counting only non-refurbished nuclear units, we understand that there are only 8.2 GW of capacity at Darlington and Bruce.
 - c) Please provide a breakout of the \$33 billion nuclear investment assumption between Darlington refurbishment, Bruce refurbishment and new nuclear. Please indicate the treatment of CWIP assumed in the \$33 billion forecast.
- 10) Page 19 states closing the coal plants is "the equivalent of taking 7 million cars off the road". Please provide the information supporting this statement.
- 11) Regarding the future supply mix shown in Figure 5 and specifically related to the forecast for 2030:
- a) Please indicate the portion of the gas supply expected to be used in cogeneration applications.
 - b) Please indicate the amount of energy from intermittent and baseload generation assumed to be curtailed, the amount of energy put into storage, and the amount of energy available once stored. We note that about 60% of Ontario's current hydro-electric production is baseload and if this percentage were to remain unchanged and if all the biomass and gas production is assumed to be dispatchable, the forecasted supply mix for 2030 assumes that about 83% of Ontario's generation will come from baseload and intermittent supplies.
- 12) On page 41 it indicates Hydro One made more than \$7 Billion in investments in its T. & D. systems since 2003 but their financial statements show only \$5.9 Billion to year-end Dec. 31/09. Please provide support for the \$7 Billion claim and the breakdown between transmission and distribution.
- 13) Regarding the list of transmission and distribution projects listed on Page 42 what was the original release date for the following capital projects:
- a) Ontario-Quebec Interconnection
 - b) Grid Control Centre
- 14) Page 43 carries the statement that "Ontario is leading the way" in reference to the smart grid. What is the estimated cost of building a Smart Grid and has this estimate been included in the \$9 Billion?

- 15) We note that in reviewing the financial statements of Hydro One from December 31, 2003 to December 31, 2009 to obtain the figures for capital expenditures that over 60 % of the Net Profits were paid to the Province as dividends but this has dropped to only 5% in the current year. Does this mean the Province is planning to allow Hydro One to retain more of their profit to pay for a portion of their capital expenditures?
- 16) Regarding Page 44 which indicates that “Ontario will proceed first with an investment of approximately \$2 Billion, etc. will enable approximately 4000 MW of additional renewable energy.”
 - a) What portion of this 4000 MW of capacity is to be dedicated to Samsung?
 - b) Is the \$2 Billion included in the page 55, Figure 13?
- 17) Page 46, Figure 12 is a list of “Priority Transmission Projects.”
 - a) Are these additional to the \$2 Billion referenced on Page 44?
 - b) Are the costs included with the page 55, Figure 13 estimate of \$9 Billion?
 - c) Please provide an estimate of costs for each of those listed in Figure 12?