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The Honorable Bob Chiarelli MPP
Minister of Energy
Government of Ontario
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OCI Submission to Review of Ontario's Long Term Energy Plan:

Continued investment in nuclear generation assets will result in the best outcome for Ontario's economy (up to 20% lower electricity prices, 100,000 more jobs and \$60B economic benefit) and the environment (100,000 MT fewer GHG emissions).

Dear Minister:

I would like to commend you and your ministry for undertaking this comprehensive and consultative review of Ontario's 2010 Long Term Energy Plan. As you so well know decisions regarding Ontario's long term electricity supply will have a major impact on Ontario's future prosperity. The Organization of Canadian Nuclear Industries (OCI) welcomes this opportunity to submit its views for your careful consideration. As you will see below our submission and recommendations are underpinned by rigorous and evidence-based research and analysis by a respected team of Ontario-based power system experts and economic analysts.

The Organization of Canadian Nuclear Industries (OCI) is a trade association representing 180 leading Canadian private sector companies, located mainly in Ontario, that design and manufacture precision equipment and systems for nuclear power plants in Canada and offshore. Our June 2013 member survey has confirmed that Ontario nuclear equipment manufacturers and engineering firms employ more than 9000 highly skilled engineers and skilled manufacturing trades people who support the safe and reliable operation of Ontario's current fleet of nuclear power plants and who increasingly export products and services to nuclear power plants around the world.

As you know Ontario's 20 CANDU nuclear power plants have provided cost effective reliable electricity to the Ontario grid for more than 40 years with nuclear's share of electrical energy supply increasing to over 50% for the last 20 years. The reliable, clean and low cost electricity generated by these units has helped to make Ontario the industrial heartland of Canada. The Canadian nuclear industry directly employs almost 30,000 people in Canada with more than 22,000 of these quality and sustainable jobs in Ontario – where nuclear companies, utilities and large manufacturers, often form the economic and social backbone of their host communities.

Ontario Electricity Options Comparison

Slower than forecast growth in energy demand in Ontario means that the addition of generation assets as outlined in the November 2010 LTEP could result in a surplus of power generation capacity and higher costs to ratepayers. OCI in collaboration with the Power Workers' Union (PWU) therefore commissioned

Strategic Policy Economics Inc. (Strapolec) to assess the economic and GHG emission impacts associated with two contrasting options for reducing the full supply build as contemplated in the 2010 LTEP.

The *Ontario Electricity Options Comparison (June 2013) Study (Attachment 1)* examined the impact on power cost, the economy and total GHG emissions of two contrasting supply options:

- a) *Retained Wind Scenario*– assumes that the planned wind generation program goes forward while investment in almost 4000 MWe of nuclear power generation is curtailed. Under this scenario, additional gas-fired generation is needed to back-up intermittent wind generation.
- b) *Retained Nuclear Scenario*– assumes that the planned refurbishment of existing nuclear reactors and the building of new reactors proceeds according to LTEP 2010 while the proposed development of new wind generation is reduced by just over 4000 MWe.

The study shows that retaining the nuclear generation capacity as planned in the 2010 LTEP while reducing contemplated wind generation would:

- Produce \$56 billion in direct benefits to Ontario’s economy through \$27 billion in savings to ratepayers and \$29 billion in direct investment in Ontario. The Retained Nuclear option leads to \$60 billion net incremental Ontario benefit compared to Retained Wind option.
- Generate \$9 billion in greater direct employment income benefits than the Retained Wind option including the creation of more than 100,000 full-time equivalent jobs in Ontario, many in the advanced manufacturing sector.
- Reduce total greenhouse gas (GHG) emissions by more than 108 million tonnes over 20 years, or 80 per cent less, compared to the Retained Wind option.

Report Author and Data Sources

Marc Brouillette, founder of Strategic Policy Economics, is a respected analyst and economic consultant who has worked in several well-known consulting firms before forming Strapolec Inc. Marc was supported by a strong team of analysts and model developers. Marc and his team built their 20 –year power system models and assumptions from more than 90 available public sources, all referenced in his report. The models and cost assumptions were validated against data and forecasts from the Ontario Power Authority, the Independent Electricity System Operator, the Ontario Energy Board, ClearSky Advisors, CME and other public sources and the entire study was reviewed by three very credible external reviewers (Jan Carr, Paul Acchione and Jatin Nathwani).

Ontario Industrial Strategy and Export Sales

The *Ontario Electricity Options Comparison* final report (*June 2013*) did not consider the impact of Ontario’s supply decisions on the ability of Ontario specialty nuclear equipment manufacturing and engineering companies to engage in the robust nuclear export market. Ontario has a well established and vibrant nuclear supply industry with a track record spanning four decades – dating back to the innovative design, construction and commissioning of the Pickering nuclear power plant. Ontario’s nuclear industry is now poised for export growth - stimulated and encouraged by domestic projects.

A World Nuclear Association (WNA) assessment (July 2013) of the world's nuclear power market states that there are 432 nuclear reactors operating (or operable) worldwide with 68 reactors under construction, and a further 162 reactors in various planning stages. Ontario’s nuclear supply chain is already actively engaged in supplying to this dynamic export market. In fact OCI with support of Ontario and Federal governments led a successful trade mission of 11 Ontario companies to the UK last March and is planning nuclear trade missions to the USA, India, China and Argentina over the next 12 months (**Attachment 2**). Investments in reactor refurbishments and in design and construction of new reactors with a strong reliance

on Ontario content will allow our home-based nuclear suppliers to attract and develop skilled resources, acquire advanced manufacturing equipment and to exploit these capabilities in targeted export markets. We therefore assert that Ontario electricity supply decisions need to be taken in the context of an overall industrial strategy for the province – a strategy that can be underpinned by the proven track record of our nuclear industry and validated by a well-documented, almost worldwide acceptance that nuclear energy has a key role to play in our global fight against the real risks of climate change.

International Experience with Renewable Power

Finally I recommend that the Ministry of Energy's LTEP Review Team consider the growing body of evidence confirming that many countries that rushed toward renewable energy sources with generous government subsidies are now reconsidering their renewable energy programs in light of their harsh impacts on the economies, workers and electricity users in these countries. I refer you in particular to a very recent article (Attachment 3) by Benny Peiser, Director of the respected London-based Global Warming Policy Foundation, *Europe Pulls The Plug On Its Green Future* (The Australian, 10 August 2013) (**Attachment 3**). The headline for this article reads: “As country after country abandons, curtails or reneges on once-generous support for renewable energy, Europe is beginning to realize that its green energy strategy is dying on the vine. Green dreams are giving way to hard economic realities.” In his conclusion Mr. Peiser warns: “Australians (and Ontarians sic) would be well advised to watch this green train wreck very closely if they wish to avoid a repeat of the fiasco that is unfolding in Europe.”

Conclusions and Recommendations

OCI in collaboration with the Power Workers Union commissioned detailed analysis clearly demonstrating that investment in Ontario's nuclear generation capacity will deliver the greatest benefit to Ontario ratepayers and the economy while dramatically reducing future greenhouse gas (GHG) emissions. The study confirms that focusing our investments into nuclear power generation assets will lead to lower electricity costs and greater investment in Ontario - delivering some \$60 billion in greater direct benefit to Ontario's economy through lower cost electricity and greater spend in Ontario – and a stronger Ontario economy that can afford better health and social benefits for all Ontarians. This fact-based comparative analysis showed that continued reliance on nuclear generation as a key part of Ontario's electricity supply mix (vs a larger wind/gas program) will generate 100,000 more quality FTE's of employment (many of these jobs in Ontario's declining but vital manufacturing sector) with almost 110,000,000 fewer tonnes of GHG emissions over 20 years. Imposing a carbon tax to electricity produced by gas plants will widen the benefits gap in favor of the nuclear option.

We believe that Ontario's energy supply decisions are closely linked to the health of Ontario's beleaguered manufacturing sector. Firstly, lower cost electricity will retain and attract industry and manufacturing jobs to Ontario and increase household disposable income and spending in our economy. Secondly investment in our nuclear reactor fleet creates high value jobs in Ontario by exploiting unique and well established capabilities in our existing nuclear industry – alternative supply options depend on imported fuel (gas from Alberta and the US) and imported equipment (wind turbine components and solar panels from Europe and China) creating jobs in other provinces and counties.

I look forward to meeting with you in the near future to discuss how the nuclear industry can continue to be the low-cost back-bone of Ontario's electricity infrastructure while creating high value manufacturing jobs through planned reactor refurbishments and future new reactor projects in Ontario.

Yours sincerely



Ron Oberth
President

cc OCI Board of Directors

Attachments:

- 1) *Ontario Electricity Options Comparison*, Strategy Policy Economics Inc (June 2013)



Ontario Electricity Options Comparison Final 070413.pdf

The full report is also available at:

<http://www.oci-aic.org/>

- 2) *Ontario and Canadian Nuclear Suppliers set to travel to the UK in March*, OCI Press Release (February 25, 2013)



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Canadian Nuclear Sup

- 3) *Europe Pulls The Plug On Its Green Future*, Benny Peiser, The Australian, (10 August 2013)



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