

NEW NUCLEAR AND BIOMASS GENERATION: THE BEST WAY TO MEET FUTURE DEMAND AND ELECTRIFY ONTARIO'S ECONOMY

MEL HYATT, POWER WORKERS' UNION PRESIDENT



Over the last several weeks, Ontario's government has been consulting about its "Open for Business" strategy and related energy, environmental and business policies. The outcomes are critical to Ontario's future energy security and economic competitiveness.

Two critical challenges – representing significant economic threats and opportunities – must be addressed. In the near-term, Ontario will need more low-carbon, affordable electricity when the Pickering Nuclear Generating Station retires in 2024 and when more of the province's nuclear reactors are being refurbished. In the longer-term, analyses show further electrifying the economy with reliable, low-carbon, low-cost electricity can create thousands of jobs and billions in GDP while reducing greenhouse gas (GHG) emissions.

Both challenges can best be met by building new nuclear reactors and by using Ontario's vast, renewable biomass resources to expand the north's heat, power and high-value products bio-economy. Domestic energy resources like these secure Ontario's low-carbon energy security and economic competitiveness.



While Ontario's hydro fleet provides about 1/4 of our electricity, we don't have extensive hydropower resources like Manitoba and Quebec. Ontario has developed most of its commercially-viable potential. Recognizing this fact, Ontario's leadership partnered with the federal government in the 1970s to develop CANDU nuclear technology. **Today, Ontario's nuclear electricity workhorse safely and reliably provides about 60 percent of our electricity.**

Over the last decade, several independent studies illustrate the economic, social and environmental benefits of Ontario's \$6 billion/year nuclear sector. For example, Canadian companies are significant global suppliers of nuclear technology, providing 75% of the world's demand for Cobalt-60. The refurbishment of Ontario's nuclear reactor fleet is generating tens of thousands of jobs and billions of spending dollars in our province. According to NRCAN, Ontario's continued use of nuclear energy will displace about 30 million tonnes per year of carbon dioxide or 3.8% of expected emissions in 2030 (as compared with natural gas).

Globally, there is growing recognition that nuclear power must play a major role mitigating climate change. Our federal government is partnering with others, taking leadership roles in international nuclear forums, and led the development of a Small Nuclear Modular Reactor Roadmap for Canada. More importantly, there's no shortage of independent analyses showing that building one or two new nuclear reactors in Ontario would generate billions of dollars in gross domestic product for the province and country.

Ontario's vast, renewable forestry and agricultural biomass resources can be better leveraged to produce more low-carbon energy and heat and create good paying jobs in forestry, agriculture, transportation and new technologies. Europe has a well-established bio-economy, with China, Japan and other Asian countries quickly catching up. In turn, a robust global biomass trading system has been established.

The bio-economies of Sweden and Denmark are integrating: forestry; pulp and paper; wood products; combined heat and power networks fueled by renewable biomass; recycled waste and "black" bag garbage; bio-refineries producing fuels and high value chemicals; and transportation infrastructure. Both countries have created tens of thousands of jobs and billions in economic wealth, reduced fossil fuel imports, and lowered their GHG emissions.

Making similar strategic investments in Ontario's northern-based biomass resources could achieve the same. **Converting Ontario's Thunder Bay Generating Station to a biomass combined heat and power plant represents one immediate opportunity.**

Instead, some of Ontario's new electricity players are lobbying for more ratepayer/taxpayer subsidies for investments in distributed energy resources or DER that can be formed into microgrids. An un-costed, integrated regional planning process has been implemented to facilitate DER. This has "balkanized" Ontario's bulk electricity system into 21 regions. Yet it's not clear how the costs and benefits will be defined and shared among the consumers and shareholders.

The facts speak for themselves. **Building new nuclear reactors and investing Ontario's biomass resources is the best way to meet Ontario's short-term supply gap and further electrification of the economy.** More jobs, more economic growth, and cleaner, lower cost energy.

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