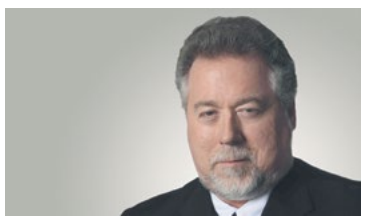
OPINION

# Canada's nuclear technology: A platform for prosperity and energy security



By Mel Hyatt,
President, Power Workers' Union

Canadians soon will learn more about Canada's "clean tech" plans and Ontario's newest Long-Term Energy Plan. Both levels of government appear to be captivated by new emerging technologies like energy storage, distributed energy resources and microgrids. Their promoters present them as the best way of further electrifying and decarbonizing our economy while ensuring long-term, reliable, affordable energy. Yet, one tried and true technology offers more environmental, social and economic benefits – nuclear energy.

For over 50 years, nuclear energy has delivered safe, reliable, affordable electricity virtually free of greenhouse gas (GHG) and smog-causing emissions. Today, it underpins the electricity systems of New Brunswick and Ontario. For the last seven years, Ontario's nuclear fleet provided 58 per cent of our electricity. Including Ontario's hydropower, over 75 per cent of our electricity comes from low-carbon generation – forming one of the world's lowest carbon electricity system footprints. Annually, Ontario's nuclear fleet avoids 45 million tonnes of GHG emissions – at a national carbon price of $10 per tonne, that's a value of $450-million a year.

Advocates for these new technologies – multinational companies, technology developers, financiers and prosumers – want a share of the electricity sector's solid revenue streams. But consumers don't know the ultimate costs and benefits and how they will be shared. Will more "localized" investments mean different electricity rates across the province?

Numerous independent analyses show that Ontario's nuclear asset investments: contribute billions of dollars to our economy; sustain and create tens of thousands of high-value jobs; support innovative R&D like cancer-fighting medical isotopes; and represent one of Canada's few high-technology exports.

While Ontario has committed to refurbishing its publicly owned reactors and extending the operation of the Pickering Nuclear Station by four years, other stakeholders are opposed. Some want increased imports of hydropower from Quebec, ignoring the high cost and flow of dollars and jobs out of Ontario. In reality, Ontario's reactors help Quebec meet its electricity demands, refill their reservoirs and offer insurance for fluctuating annual precipitation levels impacted by climate change.

Others see emerging technologies like energy storage – stores off peak power for peak use, backs up intermittent wind and solar generation, and enables microgrids and more distributed energy – as a practical alternative. Proponents say Ontario's and Canada's economic prosperity depends upon participating in the evolving global marketplace. However, consumers deserve to know the risks.

Several critical questions remain unanswered. Who will manage and pay for the toxic wastes from tens of thousands of depleted batteries and used solar panels? By comparison, Canada's nuclear industry has a highly regulated, world-leading, well-funded nuclear waste management program. And if these new technologies don't deliver, will Ontario be forced to import more U.S. shale gas and increase its dependence on carbon-emitting natural gas generation?

Advocates for these new technologies – multinational companies, technology developers, financiers and prosumers – want a share of the electricity sector's solid revenue streams. But consumers don't know the ultimate costs and benefits and how they will be shared. Will more "localized" investments mean different electricity rates across the province? What about public and worker safety?

The resulting rate hikes and unrealized employment associated with Ontario's recent *Green Energy Act* validates the importance of strategically choosing and supporting the right plans. Also important is the recognition that China and the U.S. already hold many of these technology patents. China's dominance of the solar panel market is a good example.

U.S. Department of Energy analyses indicate that nuclear energy and renewable technologies can be integrated to create a hybrid electricity system that provides clean power and addresses climate change. Besides providing base load power, some CANDU reactors are already operated to follow changing demand, and U.S. research shows new reactors and small modular ones will have this capability.

Canada's and Ontario's economic prosperity depends on securing long-term, reliable, affordable energy while systematically reducing GHG emissions and creating jobs and economic growth. Nuclear has been a safe, 24/7, low-carbon workhorse delivering all of the above. Continuing support from our federal and provincial governments for nuclear power's foundational role is essential for securing these benefits in the future.