

Powering Ontario's Economic Success and Environmental Performance



Jeff Parnell
President
Power Workers' Union

Electricity sector workers in Ontario have a great deal of respect for science. We know that ignoring laws of physics can result in catastrophic outcomes.

The Canadian Net-Zero Emissions Accountability Act requires virtual elimination of human-made carbon emissions by 2050. The task is enormous. It will take determination, ingenuity, and all of the next 25 years to transition from carbon-emitting energy to carbon-free energy sources.

Ontario's path to decarbonisation will require a massive build-out of dependable carbon-free electricity generation while executing the transmission and distribution system infrastructure improvements needed to reliably deliver that electricity to power heating systems, industrial processes, transportation, modern technologies such as AI data centres, and population growth.

Ontario's Independent Electricity System Operator (IESO) has conservatively forecasted the province's electricity demand to grow by 75 percent by 2050. However, analyses of demand growth by other stakeholders, including the Power Workers' Union, suggest it could be as high as 200 percent. Ontario will also need to replace existing generation assets that will be retired from service before 2050. The massive amount of new electricity generation needed to increasingly replace carbon-emitting energy sources over a 25-year period calls for a marathon-like build program.

Today, Ontario's reliable 24-7 baseload supply from carbon-free nuclear and hydroelectric generation provides over 75 percent of our electricity and forms the foundation of one of the lowest carbon intensity electricity systems in the world. While there will be opportunities to improve output and to extend hydroelectric production life at locations around the province, new-build largescale river dam projects are unlikely. Ontario is progressing well with refurbishment projects at the Darlington and Bruce Power nuclear stations and has plans to refurbish four units at the Pickering plant. Refurbishments of CANDU reactors are designed to extend operations for at least 30 years. Amazingly, about half of

Ontario's electricity comes from these three parcels of land. Refurbished nuclear units, new largescale units and small modular reactors are well positioned to be Ontario's electricity workhorse for generations to come.

An all-hands-on-deck approach will be needed, but even though grid-scale storage and other clean electricity resources will have value in the supply mix, none can contribute in the way nuclear generation can. It should also be recognised that large-scale electricity imports are unlikely a viable option because neighbouring jurisdictions, including Quebec, face similar demand growth scenarios and will have to build their own new generating capacity. Furthermore, because of the growing gap between electricity demand and carbon-free capacity, Ontario will need new natural gas generation for security of supply until adequate carbon-free generation can be built.

To effectively manage the costs and benefits of this multi-decade electrification boom, planning should set the table for success with a focus on large-scale project sequencing and execution to a strategic, sustainable, and continuously improving pace. A plan with fewer peaks and valleys will help smooth the investments needed over the build-out period; enable optimal skilled electricity

sector workforce growth, training, and retention; and help provide a roadmap to participation opportunities for municipalities, Indigenous communities, and Canadian electricity supply chain companies.

Financial instruments such as Clean Energy Investment Tax Credits, Green Bonds, and access to low interest financing must be made available for an extended period through 2050 and expanded to include distribution and transmission upgrades associated with electrification. Smart planning supported by shortened regulatory timelines to establish reliable return on investments for large-scale projects will be needed throughout the build-out period. Unnecessarily long timelines for large project approval processes should be re-engineered to be more efficient and effective. The aforementioned items can have profound impacts on achieving our electrification goals at the lowest cost to consumers.

Ontario is planning to deliver its first long-term integrated energy plan in 2025. The right energy plans, choices and investments made today will deliver on: carbon emission reductions; energy security and affordability; and underpin economic growth in Ontario for generations to come. This is a time of opportunity for Ontario's electricity sector to meet the demands of tomorrow.



MORE CARBON-FREE ELECTRICITY IS CRUCIAL TO FUEL DECARBONIZATION

- Ontario's Independent Electricity System Operator (IESO) forecasts 75% growth in electricity demand by 2050
- Analyses performed by Strategic Policy Economics (Strapolec) for the Power Workers' Union suggests demand growth could be almost three times the IESO forecast
- Today, we have the benefit of one of the lowest carbon intensity electricity systems in the world to build on
- But electricity demand is already getting well ahead of carbon-free electricity supplies and that has left Ontario in a position that more natural gas generation will be relied upon to secure supply for much longer than many had hoped

Ontario must move quickly to plan and build enough reliable, affordable, carbon-free electricity infrastructure to close the growing gap between rapid electricity demand growth and carbon-free supply



POWER WORKERS' UNION



THE PEOPLE WHO HELP KEEP THE LIGHTS ON.