

An Environmental Centrepiece for Ontario's Economic Action Plan



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come and will provide a strong foundation for the future of Ontario's nuclear industry. While the newest edition of Ontario's Long-Term Energy Plan does not provide for immediate investment in new Enhanced Candu 6 reactors to replace the 3,000 megawatt Pickering Nuclear Gen-

erating Station that is scheduled to close in 2020, it is only a matter of time until new units will be required to meet low-carbon electricity demand.

Converting Ontario's coal stations to make use of the province's vast renewable forest and

farm sourced biomass resources would reuse valuable provincially owned assets. Establishing the associated biomass fuel supply chain infrastructure is estimated to create about 3,500 jobs and contribute about \$600 million annually to Ontario's GDP.

Ontario needs an integrated environmental and economic growth plan that optimizes the value of the link between its low-carbon electricity generation and the deployment of emission-free electric vehicles that are built right here.

Manufacturing is a major contributor to Ontario's economy. Of the 1.7 million Canadians employed in this sector, nearly 800,000 live in Ontario. In 2011, Ontario's manufacturers shipped more than \$258 billion in goods. The output from the Ontario production facilities for five of the world's largest automotive companies accounts for 15.2 percent of our province's total gross domestic product.

Since 2002, factors such as the global recession, the off-shoring of jobs and, until recently, a high Canadian dollar have seen Ontario's manufacturing sector shrink by almost 30 percent – more than 300,000 jobs.

Ontario also faces stiff competition for these high-value manufacturing jobs. Recently, Michigan moved into first place in vehicle manufacturing among states and provinces, a position Ontario had occupied since 2004. Last year, Quebec announced a \$517 million investment to advance the electrification of its transportation system, including the creation of a state-of-the-art manufacturing network. Hydro Quebec's low-carbon hydroelectric power is supporting this strategy.

Ontario has a major opportunity to boost its manufacturing sector by powering "Made in Ontario" zero-emission electric vehicles (EVs) with the province's safe, reliable, affordable, low-carbon nuclear, hydroelectric and biomass electricity generation.

Thanks to our hydroelectric and nuclear generation, which provides over 70 percent of the province's electricity, Ontario has one of the lowest-carbon electricity system footprints in the world. For over 50 years, Canadian-made Candu reactors have helped avoid substantial greenhouse gas (GHG) emissions in Canada. Each year, nuclear power helps prevent 89 million tonnes of CO₂ emissions in Canada – or the same amount as taking 81 percent of Canada's cars off the road.

Ontario's vast forestry and agricultural biomass resources represent another untapped opportunity to reduce GHG emissions. Recycling Ontario's valuable, but idle, Nanticoke and Lambton generating stations to utilize natural gas in combination with renewable, carbon-neutral biomass would provide reliable electricity to meet peak power demands.

Fuelling EVs with this low-carbon electricity mix would enable Ontario to dramatically reduce GHG emissions from the province's largest source – transportation. Nuclear reactors are particularly well suited for this role as the safe, GHG emission-free, reliable, 24/7 power provided by CANDU reactors aligns well with both daytime base-load needs and overnight, off-peak charging of electric vehicles.

Ontario already has a successful auto-manufacturing "cluster" in place that could build the next generation of electrically powered vehicles. It supports over 400,000 direct and indirect jobs and 350 parts manufacturers. One of Ontario's automakers has already committed to making an electric vehicle here.

Ontario hosts most of Canada's \$6 billion-a-year nuclear industry with 160 supply chain companies and 60,000 direct and indirect high-value jobs. This technology has also helped make Canada a leader in nuclear medicine as well as materials innovation and development while benefiting our universities and research agencies.

The planned refurbishments of six nuclear units at Bruce Power and four at Ontario Power Generation's Darlington site bring with them thousands of jobs for decades to

Clean Electricity + Transportation: Ontario's Extraordinary Opportunity

Transportation is our largest source of greenhouse gas (GHG) emissions. Ontario's safe, reliable and affordable low-carbon nuclear, hydroelectric and biomass generation can power emission-free electric vehicles. This will significantly reduce GHG emissions, create thousands of high-value jobs and ensure our energy security.

Success requires smart, strategic investments:

- Refurbishing all of Ontario's reactors and building new ones;
- Recycling the Nanticoke and Lambton coal stations to use natural gas and carbon-neutral biomass for peak production;
- Investing in a biomass supply chain;
- Installing electric vehicle charging infrastructure.

Leveraging Ontario's proven advantages — a \$6 billion a year, 60,000 job nuclear industry; a 400,000-job auto sector; Ontario's existing electricity assets; our forestry, agriculture and transportation sectors; and overnight electricity surpluses ideal for charging electric vehicles — can deliver real economic and environmental benefits.

For more information please go to www.pwu.ca

FROM THE PEOPLE WHO HELP KEEP THE LIGHTS ON.

