

ONTARIO TODAY RELEASES ITS LONG-TERM ENERGY PLAN (LTEP): THE FOCUS ON NUCLEAR

By Stanley D. Berger

With all the fanfare about renewable energy, the report released by the Ontario Government on October 26, 2017, is illuminating. Currently, nuclear energy continues to supply the greatest electricity generation in the Province at 91.7 terawatt hours, followed by water at 36.5, natural gas at 12.8, wind at 10.7, solar at 3.5, biomass at 0.7, other at 0.7 and conservation at 14.7. The following are excerpts from the just released plan as they relate to nuclear energy:

Maintaining a Secure Source of Clean Energy for Ontario – The Government's View

"The most cost-effective option for producing the baseload generation the province needs while releasing no GHG emissions, is to refurbish Ontario's nuclear generating stations. Ontario is moving forward with the plans laid out in the 2013 LTEP to refurbish a total of ten nuclear units between 2016 and 2033 - four units at Darlington and six units at Bruce."

"The Darlington Nuclear Generating Station, in the Municipality of Clarington, and the Bruce Nuclear Generating Station, in the Municipality of Kincardine, are two of the world's best-performing nuclear power plants. Together, Darlington and Bruce provide around 50 per cent of the province's electricity needs."

"Refurbishing these 10 units will lock-in more than 9,800 MW of affordable, reliable and emission-free generation capacity for the long-term benefit of Ontario."

The Economic Implications

"It will also support the 180 companies and 60,000 jobs that make up Ontario's globally-recognized nuclear supply chain..."The refurbishment and continued operation of Darlington is expected to contribute a total of \$90 billion to Ontario's gross domestic product and increase employment by an average of 14,200 jobs annually."

Refurbishment Schedule

The Refurbishment schedule starts with Darlington Unit 2 beginning in mid-2016, Bruce 6 and Darlington 3 in 2020, Darlington 1 in 2021, Bruce 3 and



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Darlington 4 in 2023, Bruce 4 in 2025, Bruce 6 2026, Bruce 7 2028 and Bruce 8 2030.

How Pickering Fills the Gap

"The plan is to have the Pickering Nuclear Generating Station operate until 2024. Its continued operation will ensure Ontario has a reliable source of emission-free baseload electricity to replace the power that will not be available during the Darlington and initial Bruce refurbishments. The continued operation of Pickering would also reduce the use of natural gas to generate electricity, saving up to \$600 million for electricity consumers and reducing GHG emissions by at least eight million tonnes."

Managing Cost, Schedule and Public Safety

"The Province has established off-ramps for the Darlington refurbishment that may be used in the event of OPG failing to adhere to the approved costs and schedule. This could result in the Province not proceeding with the remaining units."

"Ontario's contract with the privately-owned Bruce Power also includes strong protection from cost overruns with the refurbishments. For example, Bruce Power is paying for approximately \$2 billion in cost overruns that occurred when two of the Bruce units were refurbished and restarted in 2012."

"Under its recently updated agreement with the IESO (*Independent Electricity System Operator*), Bruce Power will be assuming the risk of any cost overruns during the execution of the refurbishment of each of the six remaining Bruce units. Contractual off-ramps allow Ontario to stop work on any Bruce refurbishment if the estimated cost exceeds a pre-defined amount. Refurbishment at Bruce can also be stopped if demand drops or lower-cost resources emerge."

"In addition to OPG's oversight of the Darlington refurbishment, the government has its own independent advisor to ensure that it has continued and effective oversight. All of OPG's expenditures on nuclear refurbishment will also be reviewed by the OEB (*Ontario Energy Board*) as part of its rate-setting process."

"The IESO will continue to manage the Bruce contract and closely scrutinize the basis for costs underlying the refurbishment and ongoing operation of the Bruce reactors. It has full-time representatives on-site and will regularly report back to the Province. The Province announced in January 2016 that it had approved OPG's plan to ask the OEB and the Canadian Nuclear Safety Commission (CNSC) to approve the continued operation of Pickering until 2024. The OEB will ensure that the costs of OPG's plan for continued Pickering operation are prudent, while the CNSC will ensure that Pickering operates safely during this period."

The full LTEP can be downloaded at: <https://www.ontario.ca/document/2017-long-term-energy-plan>