



Guest Column / Kevin Kelly

Nuclear Power Helps Sustain a Clean Energy System

As one of the many people working in the energy sector, it's easy to forget that Canadians don't actually spend a great deal of time thinking about where their electricity comes from or the impact it has on the environment.

We have a system that is so efficient that most people only consider electricity when it's not available.

Flick a switch and the light comes on.

Press a button and we're connected to the world on our computer.

It's a quality of life taken for granted by Canadians but not so the 1.2 billion people worldwide, 17 per cent of the global population, are without access to electricity. This is what they aspire to and it's a simple fact of life that the more economically advanced a society becomes, the more electricity it uses.

The source of that electricity will have a huge impact on the future of the planet and it's difficult to envision a solution that doesn't include a large role for nuclear power. Nuclear is a clean, affordable source of energy which, due to its high rate of availability, partners well with renewables.

As jurisdictions across the country and around the world enact policy to combat climate change, nuclear needs to be part of a balanced supply mix if we're going to be successful.

This is not to suggest nuclear energy is perfect, because that is simply not true. Every source of electricity has its pros and cons and we must weigh those carefully but as we look around the globe and into the future, climate change, population growth and developing economies loom as some of

the challenges facing the planet.

If we look closer to home, Ontario, as part of its Long Term Energy Plan (LTEP), has identified nuclear as continuing to play a major role in the supply mix and the province is set to begin an unprecedented period of nuclear refurbishment with 10 of its reactors set for major upgrades that will extend their lives for another 30 plus years.

Ontario's goal is to become a jurisdiction that can be powered using clean, non-emitting energy sources. A critical part of achieving that goal relies on Ontario renewing the entire nuclear capacity at the Bruce site.

That is why on December 3, 2015, Bruce Power announced that it had secured a long-term agreement with the Independent Electricity System Operator (IESO) to refurbish Bruce Power Units 3-8 infusing more than 30 years of operational life into each unit.

Under the agreement Bruce Power will continue to produce approximately 30 per cent of Ontario's electricity at a price that is 30 per cent below the average residential price of electricity. As a private sector operator, Bruce Power will continue to meet all investment requirements for the site and will bear the risk of delivering these projects on time and budget with upside sharing with the IESO for better than planned performance.

Bruce Power will continue to provide 2,400 megawatts of its output as flexible generation, allowing the IESO to balance system needs in a post-coal environment.

The scope of the refurbishment will

be limited to the replacement of key major components including steam generators and reactor components. This work will take place from 2020-33. Items outside these major components will take place through a program referred to as "asset management" and take place from 2016-53.

The program will secure an estimated 18,000 jobs directly and indirectly from continued operations and an additional 3,000 to 5,000 jobs annually throughout the investment program according to a joint economic impact analysis conducted by the Ontario Building and Construction Trades Council of Ontario, Southwest Economic Alliance, Canadian Manufacturers & Exporters, The Society of Energy Professionals, the Power Workers' Union and Bruce Power. In addition to the \$900 million to \$1.2 billion in direct and indirect labour income annually, 90 per cent of Bruce Power's spending takes place in Ontario supporting hundreds of business throughout the province.

If Ontario is to meet its long-term GHG targets, it will need to continue to decarbonize our energy system and that will involve us using much more electricity than we do today—notably for electric vehicles and urban transportation, for industry and quite possibly for building heat as well.

Nuclear energy plays a critical role in meeting the energy and air quality needs in Ontario and provides a natural partner with renewables as we look towards a cleaner and sustainable energy future. **P**

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