

Briefing *to the* 43rd Canadian Parliament

We power more for less



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An Overview of Bruce Power

Formed in 2001, Bruce Power is an electricity company based in Bruce County, Ontario. We are powered by our people. Our people are the foundation of our accomplishments and are proud of the role they play in safely delivering clean, reliable, low-cost nuclear power to families and businesses across the province and life-saving medical isotopes across the globe. Bruce Power has worked hard to build strong roots in Ontario and is committed to protecting the environment and supporting the communities in which we live.

The company employs approximately 4,200 people on a permanent basis and, as a result of investment activities, the site has been the single largest source of Building Trades work in Ontario over the last 10 years.

As Canada's largest public-private partnership, the site is leased from the Province of Ontario under a long-term arrangement where all of

the assets remain publicly owned, while the company makes annual rent payments and funds the cost of waste management and eventual decommissioning of the facilities.

In 2019, Bruce Power was recognized as one of Canada's top employers for young people for the eighth year in a row





Canada's largest private-public partnership

In 2001, the Bruce Power Public-Private Partnership received the Gold Award for Infrastructure by the Canadian Council for Public-Private Partnerships (CCPPP) in its National Awards for Innovation and Excellence in Public-Private Partnerships. Canada currently has 245 P3s, with the largest, and one of the more unique, being Bruce Power.

The unique Bruce Power P3 structure allows the company to align itself with the energy policy goals of the province. Since 2001, the provincial policy goals have been to phase out coal in order to lower greenhouse gas emissions and ensure the province has reliable but flexible supply of electricity even though energy efficiency and conservation has reduced demands. It also aligns

with keeping electricity prices low for families and businesses, and investing private dollars into public assets without impacting the province's balance sheet in the process. This allows the province to focus on meeting its own fiscal targets and supporting programs like health care and education. This is a model that has served Ontario well over the last decade and will be essential moving forward.

Our site: a strategic location

The siting of energy infrastructure has proven to be a challenging issue for many jurisdictions, including Ontario. The Bruce Power site is located in rural southwestern Ontario and has the unique benefit of a remote location, while at the same time enjoying well-established infrastructure to



support the facility. There are a number of key considerations related to the siting of electricity generation infrastructure, including:

- Transmission availability
- Community support
- Environmental factors
- Established workforce

The site is leased from the Province of Ontario under a long-term arrangement where all of the assets remain publicly owned, while the company is responsible for operating and investing in the units, including refurbishment and maintenance costs. Bruce Power is also responsible for waste management costs, while contributing to fund the decommissioning of the facilities at their end of life.

Community support and ongoing Indigenous engagement is also a critical component to our success at Bruce Power, and is an important siting consideration. For nuclear facilities, there is the added consideration of adequate site infrastructure and emergency preparedness capabilities that must be taken into account. The Bruce Power site has proven to be a very strong location as it relates to each of these factors and, as a result of this strong position, the eight units on the site are in many ways a strategic and critical infrastructure for the province.

Low-cost, affordable power

Bruce Power currently provides over 30 per cent of Ontario's electricity at 30 per cent less than the average cost to produce residential power. In fact, Bruce Power is the source of half of Ontario's nuclear generation and is the lowest cost source of nuclear energy in the province.

The cost of electricity is often misunderstood and there is great deal of confusion on what drives costs in Ontario.

As Figure 1 illustrates, the lower-cost sources of electricity — nuclear and hydro — help keep the average cost of electricity down as compared to other forms of more expensive generation.

In 2019, Bruce Power received a single price for all output from the site of \$75 per megawatt-hour (MWh).

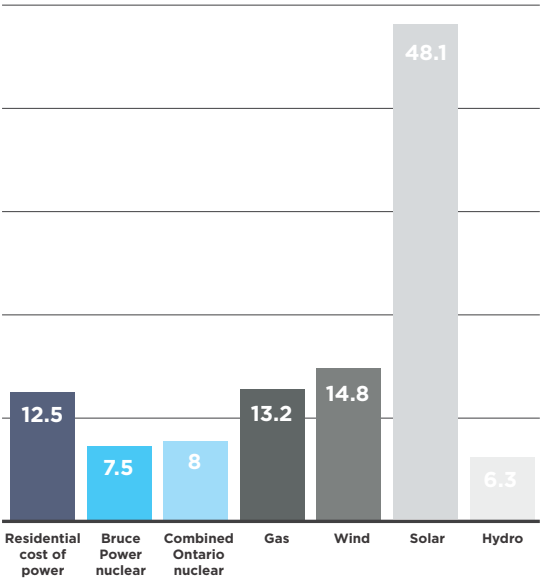
The average residential price of electricity in the province was \$125 per MWh.

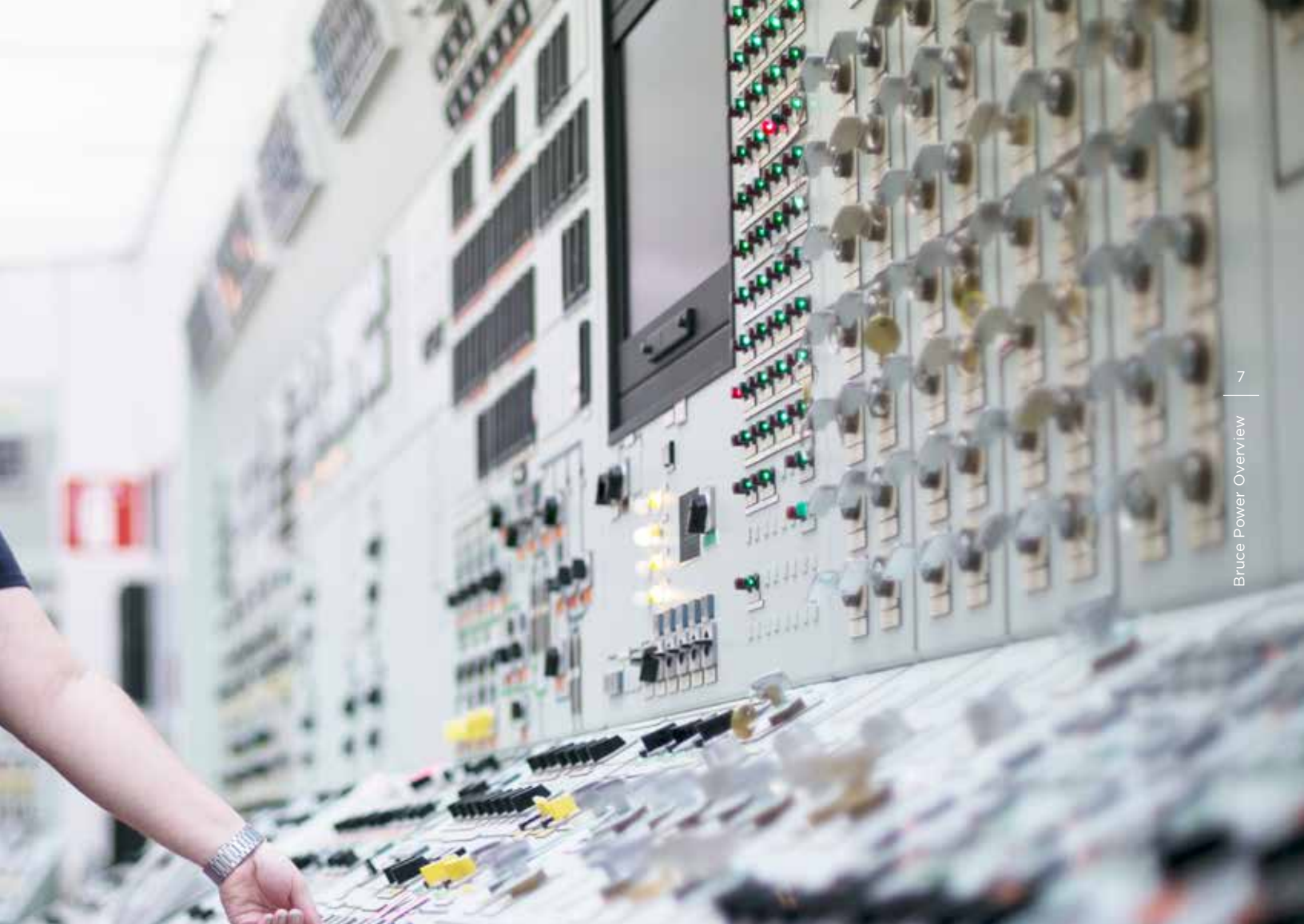
The price paid for Bruce Power nuclear is fully inclusive of all costs, including capital investments that have been made, funding for fuel, waste and decommissioning liabilities and every element of the company's operation.

Through Bruce Power's site lease with Ontario Power Generation (OPG), the company will continue to fund decommissioning and waste



fig. 1 **Ontario Electricity Board**
total unit supply cost (cents/kWh)





management costs. The cost to manage these liabilities will be determined through the Ontario Nuclear Fund Agreement (ONFA) process and are reflected in Bruce Power's price of power. There is often a misperception that, because of the upfront capital costs associated with nuclear energy, the cost of power will be high as a result. Due to the large volumes of electricity generated from nuclear facilities, and their high levels of reliability, this is not the case as outlined in the price comparison, which is fully inclusive of all costs.

The reliability of our equipment continues to improve, which means our units operate more consistently, providing carbon-free Bruce Power electricity to the people of Ontario, keeping our air clean.

Flexible Bruce Power nuclear

Bruce Power has made investments in all eight units on site to offer additional flexibility to Ontario's electricity market. With the phase out of coal in particular, there has been a need to provide flexibility when demand in the province drops, while also ensuring availability to meet peaks given the unique nature of Ontario's energy market.

The Bruce Power site has 2,400 MW of flexible capability out of its total 6,400 MW of capacity which has been extensively used by the province.

This flexibility has been achieved through enhancements to both our operations and physical upgrades on the non-nuclear side of the plant. The Bruce Power units are the only nuclear facilities in Ontario that have this dynamic capability, which will be beneficial for the province moving forward.

Our environmental record

The Bruce Power site has demonstrated its strong environmental characteristics a number of times over the last 15 years.

The company successfully completed three Environmental Assessments (EA) under the Canadian Environmental Assessment Act (CEAA) including: the Restart of Units 3 and 4; the refurbishment and continued operation of Units 1-4 at Bruce A; and the continued operation of Units 5-8 at Bruce B. In all three assessments, the company demonstrated the strong characteristics of the site and, more importantly, that our operations do not have a significant adverse impact on the environment. This will continue to be re-affirmed through Environmental Risk Assessments (ERAs) we will conduct for future licence renewals. The Bruce Power site is well established with more than 56 km of roads and includes its own fire department, emergency response team, medical clinic, learning centre, training centre, reactor simulators and works department. All of this infrastructure is required to support the safe operation of our facility and is viewed by many as industry leading. The fact that the site has eight operating units means the cost of this infrastructure is supported by a large volume of output.










Investment, Jobs and Economic Growth


The Life-Extension Program



In May 2018, the Canadian Manufacturers & Exporters, the Provincial Building and Construction Trades Council of Ontario and Bruce Power released a report entitled *Powering Innovation, Jobs & Economic Growth*. The report details the far reaching impacts that Bruce Power's Life-Extension Program will have on jobs and Ontario's economy and takes an in-depth look at how extending the life of the Bruce Power site to 2064 will positively impact the people of Ontario through low-cost, reliable, carbon-free electricity, as well as the continued investment in jobs and the economy.

The study outlines the importance of refurbishing Bruce Power's remaining six units, which will ensure the long-term stability of power prices, create thousands of jobs, increase Ontario's tax revenue and invest billions into Ontario's economy for decades.

Based on this report and the economics of the amended agreement with the IESO, the economic benefits are:

- Creating and sustaining 22,000 jobs, directly and indirectly during the Life-Extension Program, which will see the site, operate until 2064.
- 

- \$4 billion in annual economic benefit in Ontario's economy through direct and indirect spending on operational equipment, supplies, materials and labour income.
- Over 90 per cent of Bruce Power's spend takes place in Ontario and the company's supply chain supports hundreds of businesses throughout the province.

This investment program will also create significant, long-term employment for Ontario's building and construction trades. The Bruce site is home to a number of building and construction trades including Boilermakers, Carpenters, Electricians, Insulators, Ironworkers and Rodmen, Labourers, Millwrights, Operating Engineers, Painters, Pipefitters/Plumbers, Sheet Metal and Roofers, and Teamsters. Over the last 18 years, Bruce Power has developed a strong working relationship with these trades, with millions of hours of tradesperson work being carried out on site.

Bruce Power Major Component Replacement (MCR)

In March 2019, the Ontario Chamber of Commerce (OCC) released a report commissioned by Bruce Power outlining an impartial economic impact assessment of the MCR Project undertaken as part of Bruce Power's Life-Extension Program. The report, *Major Component Replacement Project Economic Impact Analysis*, reveals that the 13-year-long MCR Project would be of significant benefit to the economy through economic impact, GDP increase, tax revenue and opportunities for local workers and industry.

The results of the report indicate that Bruce Power's MCR Project will inject billions of dollars into the Ontario and Canadian economies, generating value for industry, communities, and governments. The complexity and size of the MCR Project will also benefit the province's workforce development due to the unique work experience offered and the project's demand of advanced skills.

The OCC analysis of economic benefit derived from the labour and materials used in the 13-year-long MCR construction project, the Ontario Chamber of Commerce (OCC) estimates:

- Ontario economic impact to be between \$7.6 and \$10.6 billion;
- Canadian economic impact to be between \$8.1 and \$11.6 billion;
- Ontario GDP to increase between \$4.8 and \$7.1 billion;
- Canadian GDP to increase between \$5.2 and \$7.8 billion;
- Ontario labour to receive between \$3.8 and \$4.6 billion and Canadian workers located in other provinces to receive an additional \$300 million; and
- The federal government to receive \$144 million in excise tax and \$1.2 billion in income tax.



fig. 2 GDP and economic impact — Canada

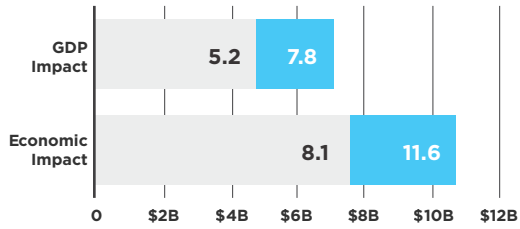


fig. 3 GDP and economic impact — Ontario

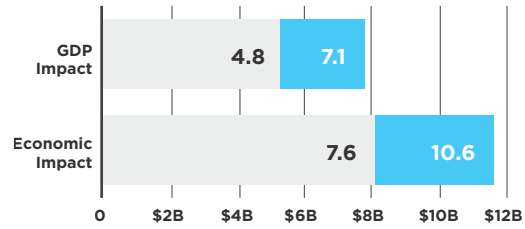
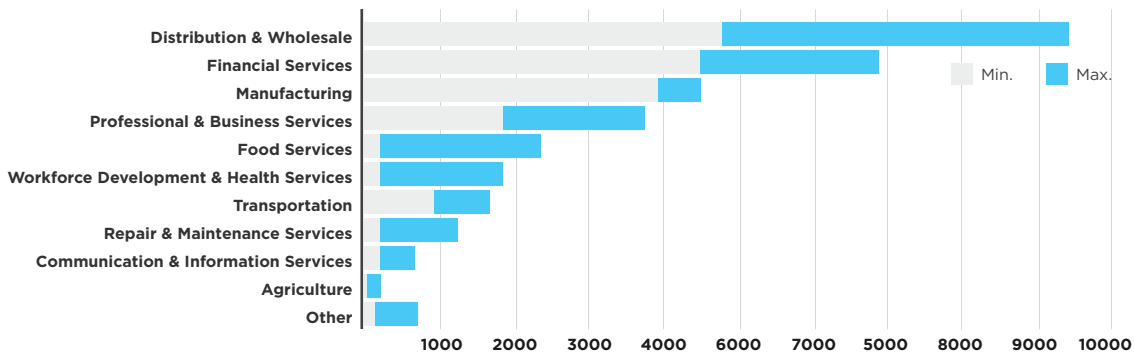
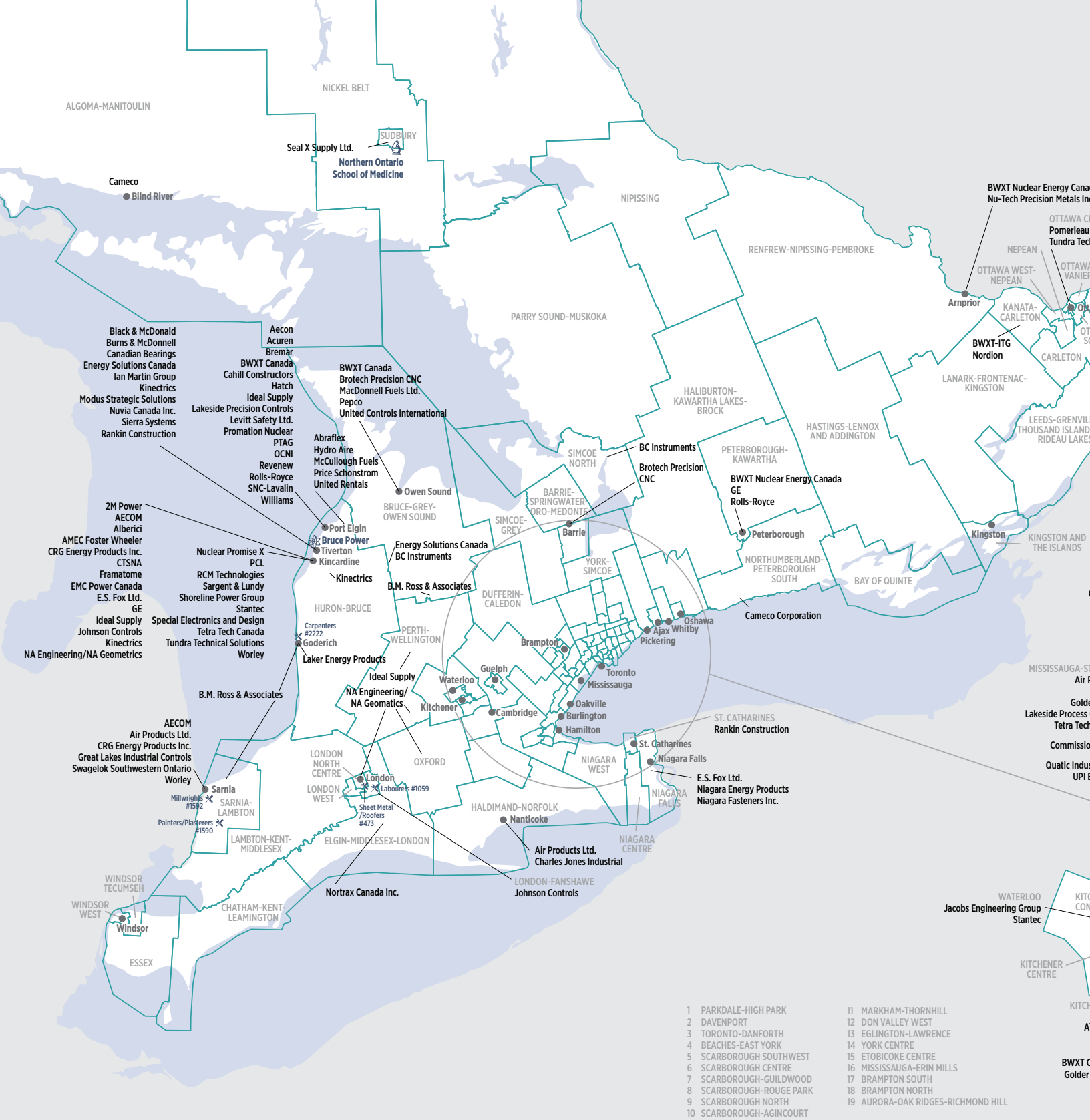


fig. 4 Total full time equivalent jobs demand by the MCR Project





250,000 sq. ft.
of commercial and
industrial spaces
developed

10,000
residential
developments
approved

\$100 M
in new infrastructure

Bruce Power collaborates with the County of Bruce on several initiatives to help drive economic growth in the region. This includes the Economic Development and Innovation Initiative, which has seen over 50 nuclear supplier companies open local offices, create a new venture, or expand operations to Bruce, Grey, and Huron counties since it was launched in 2016.



300
new small business
start-ups*

Clean Air Canada

Nuclear power plays a critical role in meeting the energy and air quality needs of the province every day. Since 2013, nuclear accounted for approximately 60 per cent of Ontario's electricity supply, with Bruce Power providing 30 per cent of the province's power and over half of its nuclear. A coal-free electricity supply mix has led to a significant reduction in harmful emissions, contributing to cleaner air and a healthier environment.



Bruce Power provided 70% of the energy needed to help Ontario achieve its coal phase-out in 2015



Bruce Power supplies 30 per cent of Ontario's electricity at 30 per cent less than the average cost to generate residential power



Nuclear energy provides 60% of Ontario's daily supply needs

In all, Bruce Power generated 48.39 TWh, enough electricity to power over 5 million Ontario homes, for the full year in 2018.

Since 2001, Bruce Power has doubled the number of its operating units — from four to

eight — contributing significantly to Ontario's agenda to phase out coal. In fact, the increased energy from the Bruce Power site from 2003-12 accounted for 70 per cent of the energy Ontario needed to achieve its goal to shut down coal.







Over the past decade, greenhouse gas emissions in Ontario's electricity sector have been reduced by more than 80 per cent.

2005

53 Smog Days

Bruce Output Down

On Oct. 16, 1997, Unit 1 was laid up by the former Ontario Hydro, taking 750 Megawatts (MW) of electricity off Ontario's grid. Unit 2 had been laid up two years earlier. Units 3 and 4 were both laid up in 1998. Many thought Bruce A would never return to service.

Coal Output Up

Following Units 1 and 2 being removed from service, combined with Units 3 and 4 in 1998, fossil fuel generation increased dramatically in Ontario — from 12 per cent of the province's energy supply mix in 1995 to 29% in 2000.

2015

Zero Smog Days

Bruce Output Up

Nearly two decades later, Bruce Units 1 and 2 are producing low-cost, clean electricity, after being returned to service in 2012, while Units 3 and 4, returned in 2003 and 2004, have also demonstrated safe, reliable operations. The revitalization of Bruce A provides Ontario with an additional 3,000 MW of low-cost, clean electricity, while Bruce B continues to be counted on for 15 per cent of Ontario's electricity.

Coal Output Down

Over the past decade, Ontario reduced its use of coal by nearly 100 per cent, accounting for just 2 per cent of the electricity supply mix in 2013, before being shut down for good in 2014. The result has been a 93 per cent reduction in Ontario's sulphur emissions. In response, the number of smog days in the greater Toronto area dropped from 53 days in 2005 to just two since 2014.

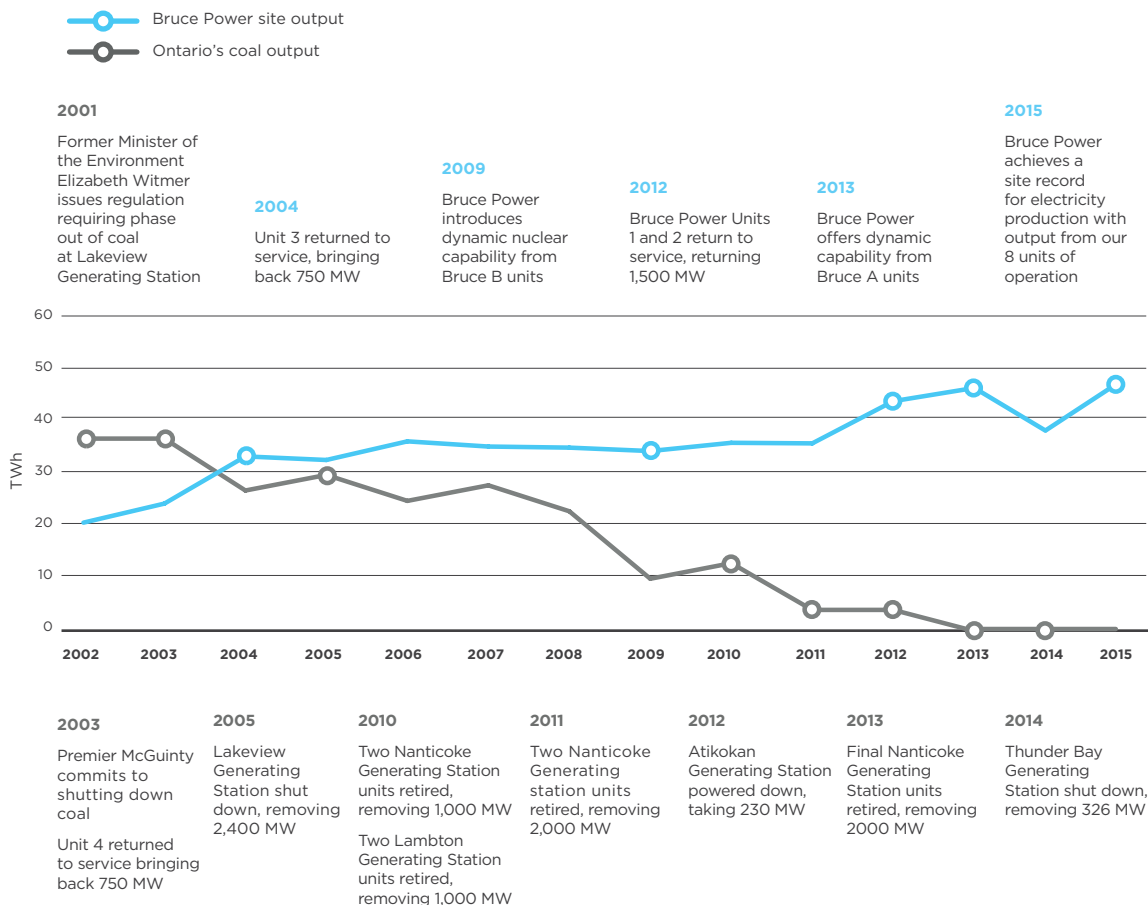
How did Ontario phase out coal?

Since the turn of the century, Ontario's electricity system has undergone a fundamental shift. Between 2003 and 2015, over six gigawatts (GW) of installed coal-fired capacity were shut down. This radical transformation of Ontario's electricity system would not have been possible without the presence of Ontario's nuclear generating stations. To eliminate its dependence on burning coal for generating electricity, the province's reliance on nuclear power increased significantly. The return to service of four Bruce Power reactors from 2003 to 2012, added 3,000 megawatts (MW) of carbon-free electricity to Ontario's grid, providing 70 per cent of the power the provincial government needed to shut down Ontario's coal-fired stations.

The coal phase-out saw a significant reduction in the province's emissions of harmful greenhouse gases (GHG), Sulphur Oxides (SOx), Nitrogen Oxides (NOx), and particulate matter (PM). The result has seen the number of smog days in Ontario plummet from 53 in 2005 to zero in 2015. Bruce Power nuclear power helped facilitate Ontario's transition to a low-carbon energy mix and, with a global shift away from GHG-emitting fuels; nuclear energy is an integral part of the larger low-carbon future.

Over the past decade, greenhouse gas emissions in Ontario's electricity sector have been reduced by more than 80 per cent. Over 95 per cent of electricity generated in Ontario comes from non-greenhouse gas emitting resources.

fig. 5 Bruce Power site output and coal output



Canadian energy overview

Canada has committed to ambitious GHG reduction targets, which will necessitate a broad scope of policy initiatives impacting numerous sectors including transportation and energy. Although Canada has already come a long way in reducing GHG emissions in the electricity sector, in large part due to the leadership exemplified by Ontario, which closed its last coal plant in 2014, some provinces such as Alberta and Saskatchewan remain primarily fossil fuel-burning regions, which reflect opportunities for change (Figure 6).

Fig. 6 Electricity generation by fuel type — Canadian provinces

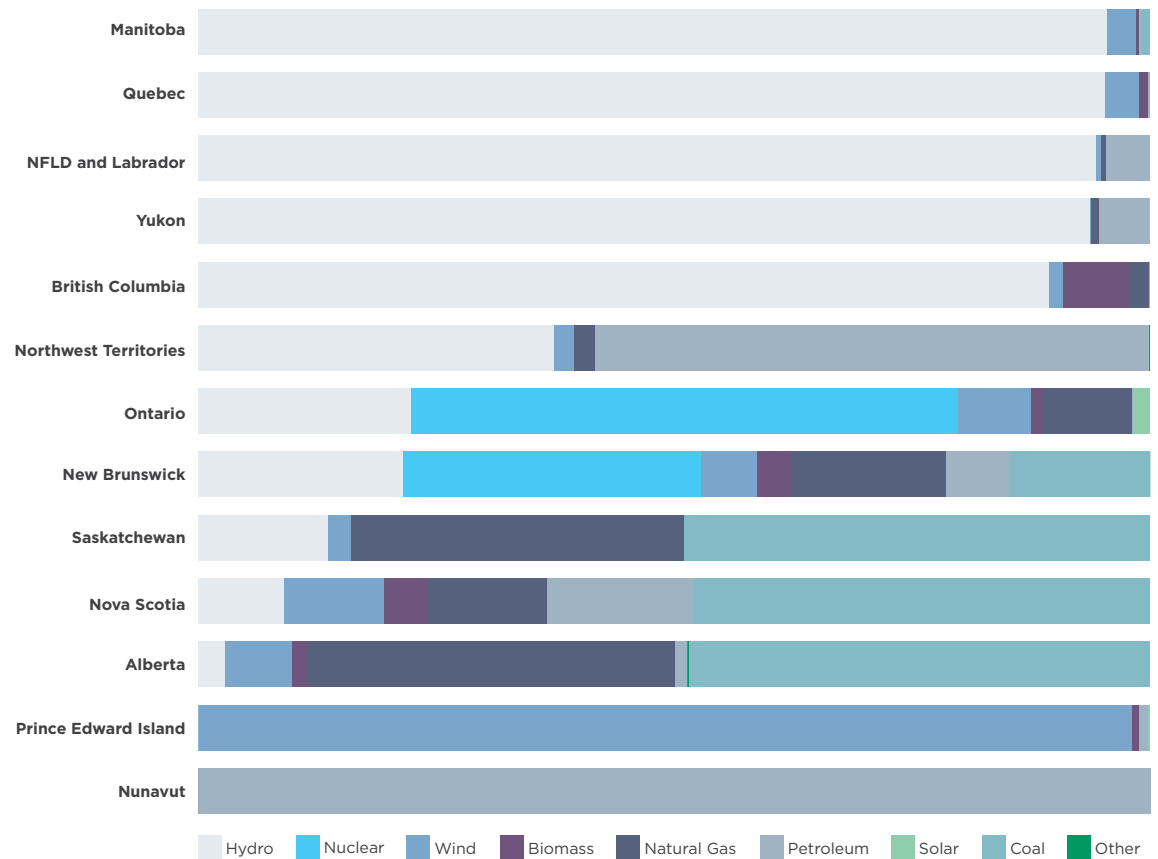


Fig. 7 Carbon intensity per kilowatt hour (1990-2015) in four Canadian provinces

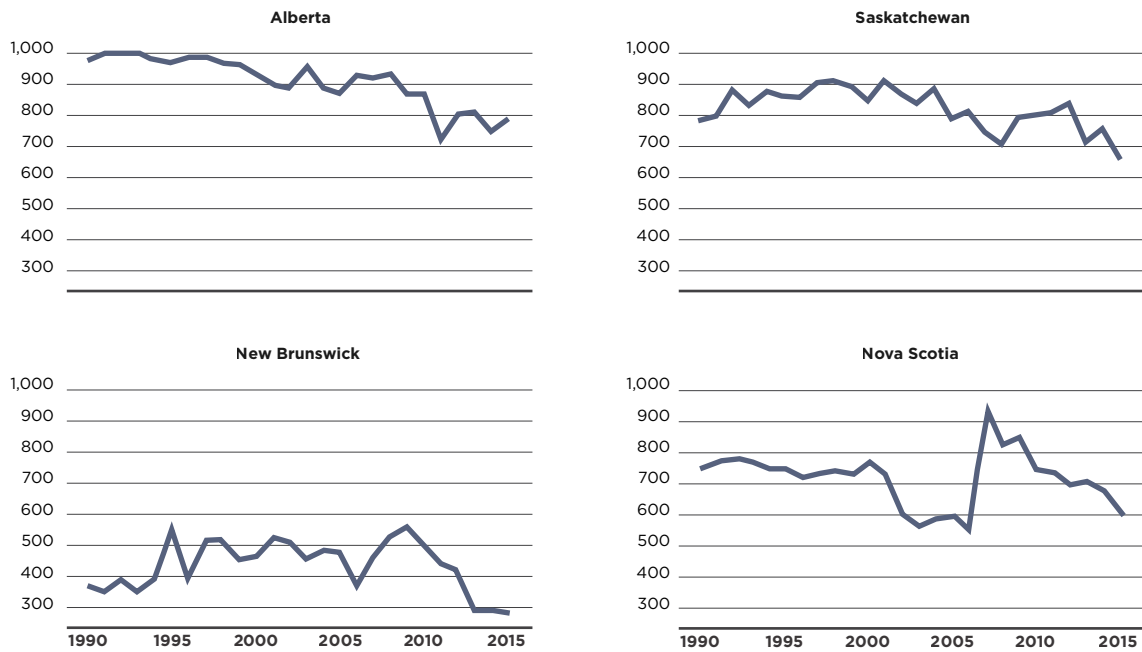
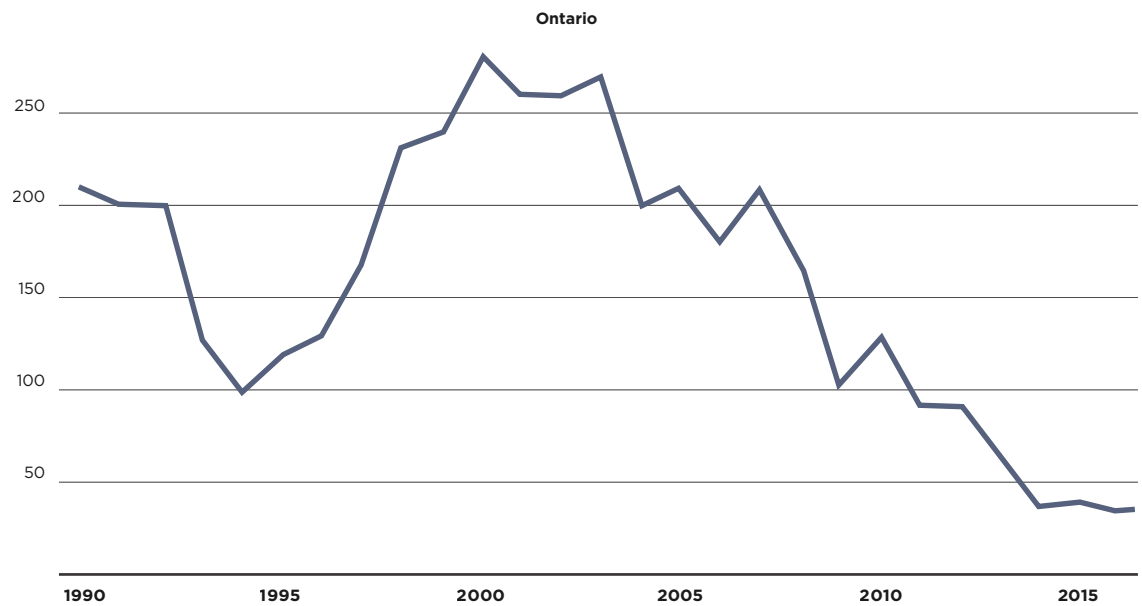


Fig. 8 Carbon intensity per kilowatt hour (1990-2017) in Ontario



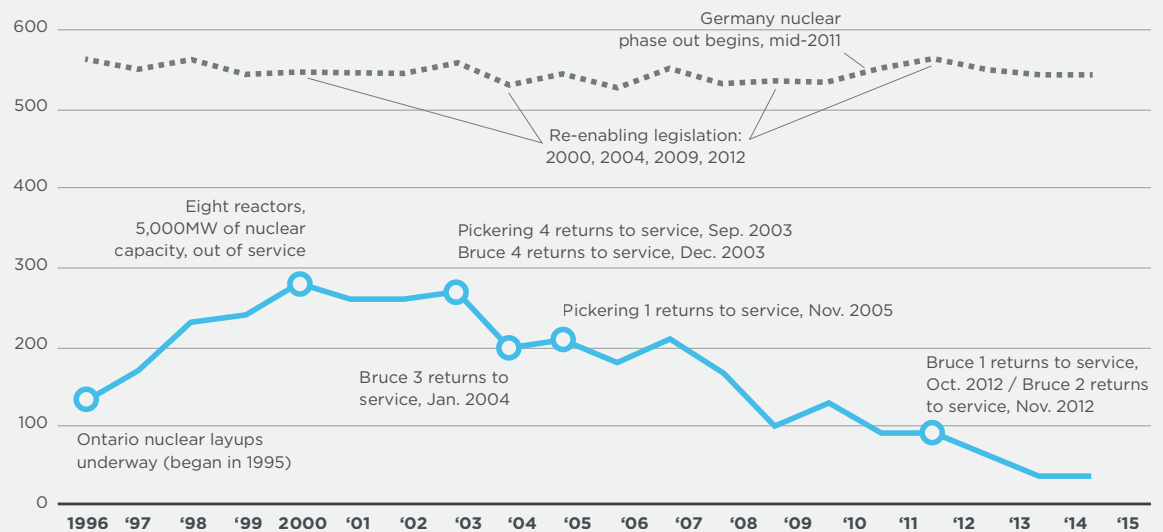
Lessons for Canada from other jurisdictions

Germany

In 2017, Germany generated 37 per cent of its electricity from non-carbon sources. Since the early-2000s, Germany has made massive investments in altering its grid by removing nuclear power in favour of large scale renewables. In pursuing the Energiewende (German for Energy Transition), Germany will have invested \$580 billion in renewable energy and storage by 2025.

Despite these investments, Germany's current grid CIPK is roughly 500 grams (average over a year). During the same time, the household price of electricity tripled between 1999 and 2015. Yet CO₂ emissions and CIPK are not much different today than in 2000 as seen in Figure 9. According to a recent Environmental Progress Analysis, California and Germany could have mostly or completely decarbonized their electricity sectors had their investments in renewables been diverted to new nuclear.

Fig. 9 Germany vs Ontario CIPK 1996-2015



Economics and health impacts of climate change and poor air quality

Various studies from around the world have concluded that combustion-related emissions, such as those produced in a variety of electricity generation processes, can cause substantial impacts to human health and the environment. Health risks associated with air pollutants vary from minor illness to premature death, and are largely associated with exposure to ozone and particulate matter.

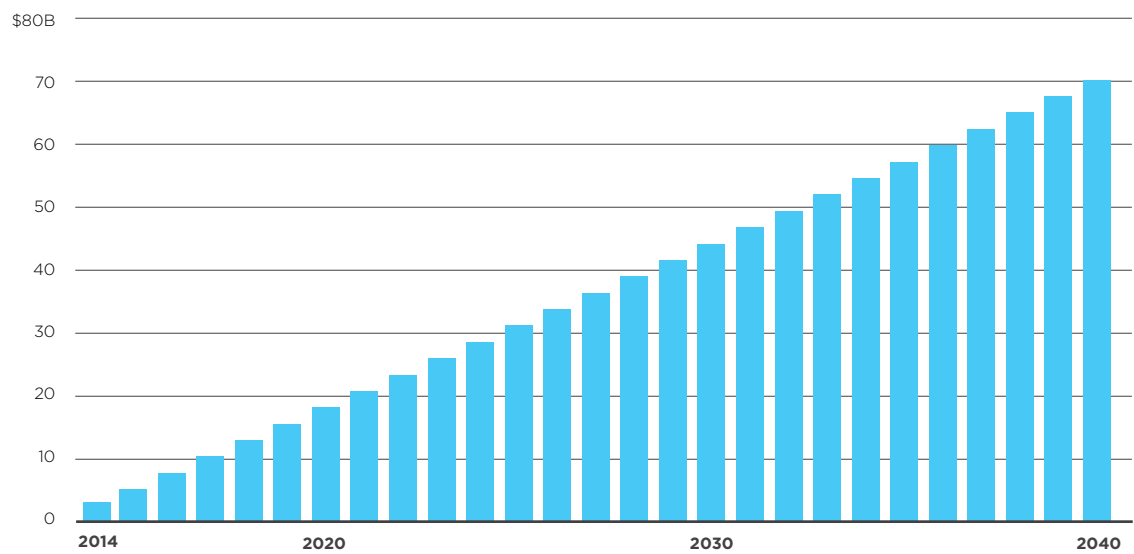
The National Round Table on the Environment and the Economy concluded that the costs of climate change could represent about \$5 billion per year by 2020 in Canada, and, depending on the levels of continued global emissions growth, could rise to \$21 billion to \$43 billion per year by 2050, or even higher under more extreme scenarios of climate change.

Health savings — Ontario

If air pollution is causing an economic burden, there are opportunities for savings if the right decisions are made. In 2005, Ontario's Ministry of Energy evaluated the health care savings to the province of phasing out coal in the short and long term.

The study found, through 2040, Ontario will annually avoid more than 25,000 emergency room visits, 20,000 hospital admissions, and a staggering 8.1 million fewer minor illnesses with the shutdown of coal. This is estimated to have an annual financial benefit of \$2.6 billion, while the total accumulated savings will be about \$70 billion between now and 2040. To put this in perspective, \$70 billion is nearly enough money to run Ontario's entire health care system for 1.5 years (Figure 10).

Fig.10 Health care savings from Ontario's coal phase-out



When considering the entire power generation life cycle nuclear is found to be one of the cleanest technologies available.

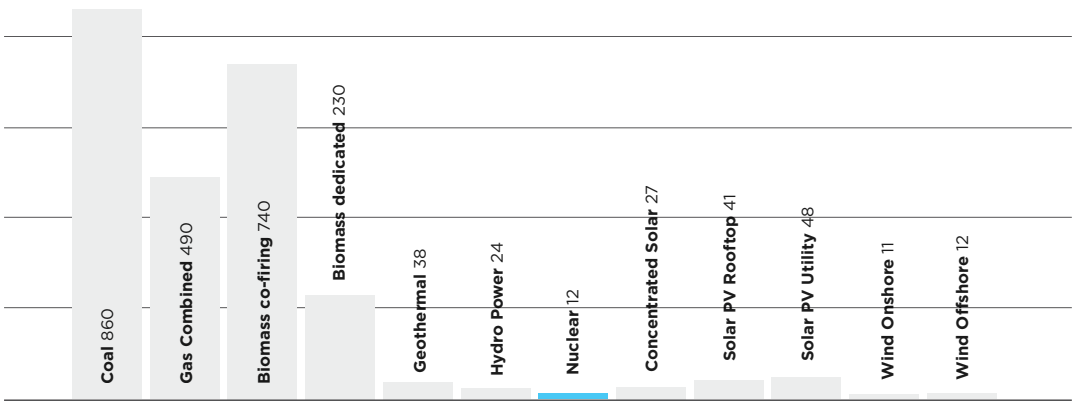
Lifecycle emission GHG rates

All electricity generation technologies emit greenhouse gases at some point in their lifecycle, creating a carbon footprint. Fossil-fuelled generation has a high carbon footprint, with most emissions produced during plant operation. Nuclear and renewable generation generally have a low carbon footprint because most emissions are caused indirectly, such as during the construction of the technology itself.

When considering the entire power generation life cycle (Figure 11), including construction, mining, operation and decommissioning, nuclear is found to be one of the cleanest technologies available.

Greenhouse gas emissions of nuclear power plants are among the lowest of any electricity generation method and on a lifecycle basis are comparable to wind, hydro-electricity and biomass. Although nuclear energy does have an intensive life-cycle, from mining of uranium ore to storage of spent fuel, it releases no carbon in its operations. When all of these steps are taken into account, nuclear power still compares favourably with that of renewable energy sources — and is well ahead of fossil fuels.

Fig. 11 Lifecycle emissions of selected electricity supply technologies (gCO₂eq/kWh)







Contributing to Modern Healthcare

Bruce Power positively impacts millions of people. Aside from providing carbon-free electricity, it also benefits the world's health care system through the production of isotopes.

Isotopes are essential components of modern health care, natural resource development, and infrastructure management. Isotopes are used to characterize human disease, to detect contraband at international borders, to sterilize medical equipment, and to power batteries for space exploration. Isotopes also enable research in agriculture, astronomy, biology, chemistry, materials science, medicine, and nuclear safety. Canada has historically been a world leader in isotope production — a multi billion-dollar global industry — and has the physical and knowledge infrastructure necessary to make a major contribution to this important field on the international stage.

For more than 30 years, the four reactors at Bruce Power's Bruce B generating station have been a reliable Cobalt-60 supply for Nordion, an Ottawa-based company.

Bruce Power's Cobalt-60 is used to sterilize more than 40 per cent of the world's single-use medical devices, including sutures, syringes, masks, gloves and more.

In 2019, Bruce Power began harvesting medical-grade Cobalt to replace the supply from CNL's reactor (NRU) which closed in March of last year. This Cobalt is used worldwide for alternative treatments to traditional brain surgery and radiation therapy for the treatment of complex brain conditions through a specialized, non-invasive knife. This innovative tool uses gamma radiation to focus 200 microscopic beams of radiation on a tumor or other target. These have the potential to provide a unique export opportunity for Ontario and a Global leadership role.

Cobalt-60

Cobalt-60 is an isotope that emits gamma rays essential to the medical community for cancer treatments, as well as sterilization of medical devices.

Sterilization Cobalt-60 is the first and most widely used type of Cobalt-60. It is employed by industry to sterilize medical devices such as sutures, gloves and syringes. This type of Cobalt-60 is typically sourced from nuclear companies like Bruce Power in great quantities. In fact, LSA Cobalt-60 from Bruce Power sterilizes more than 40 per cent of the world's single-use medical devices.

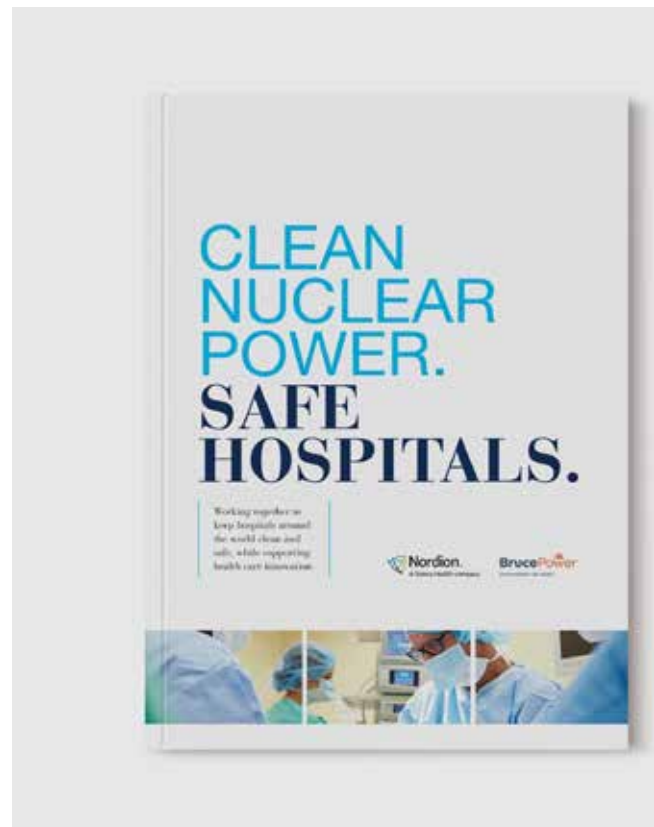
Cobalt-60 harvested from the four Bruce B reactors can also be used to help stop the spread of the Zika virus. Cobalt-60 is the key component of the Sterile Insect Technique (SIT), a process aimed at eliminating or, at a minimum, suppressing the population of insects that spread disease or damage agricultural crops.

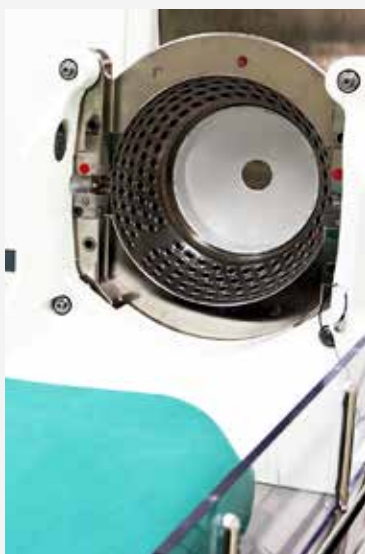
In early 2016, the International Atomic Energy Association deployed the SIT using gamma radiation from Cobalt-60 to combat the spread of Zika and West Nile viruses, as well as dengue. SIT poses no risk to the environment or to public health and, in fact, is considered one of the most environmentally friendly insect pest control methods ever developed because the insects are not killed, they simply do not self-replicate or become established in the environment.

High Specific Activity (HSA) Cobalt-60

HSA Cobalt-60 is produced in a limited number of nuclear reactors globally and is used worldwide to battle cancer and for radiation therapy for the treatment of complex brain conditions. Bruce Power has recently begun producing this new source of Cobalt, which will ensure doctors and their patients have treatments when they need them, and access to new and innovative machines.

Bruce Power is one of the world's largest suppliers of Cobalt-60. With plans to extend the life of Bruce Power's facility to 2064 through refurbishment of six of its reactors, there will be a stable worldwide source of Cobalt-60 for many years.





What is Gamma-Knife?

Gamma Knife radiosurgery is a type of radiation therapy used to treat tumours and other abnormalities in the brain.

In Gamma Knife radiosurgery, specialized equipment focuses close to 200 tiny beams of radiation on a tumour or other target. Although each beam has very little effect on the healthy brain tissue it passes through, a strong dose of radiation is delivered to the site where all the beams meet.

The precision of Gamma Knife radiosurgery results in minimal damage to healthy tissues surrounding the target. In some cases, Gamma Knife radiosurgery may have a lower risk of side effects compared with other types of radiation therapy.

Also, Gamma Knife radiosurgery is often a safer option than is traditional brain surgery. Gamma Knife radiosurgery is usually a one-time therapy completed in a single day.



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Lutetium-177 project at Bruce Power

Using the eight reactors at Bruce Power, this project is focused on closing the critical gap we have in Canada's isotope infrastructure. It presents an outstanding opportunity to strengthen Canada's long-term supply of reactor isotopes for domestic and international use while also retaining our global leadership and ecosystem.

This project will make investments to fit a number of the Bruce Power reactors with a delivery system that will be used to produce medical isotopes. It builds on decades of experience Bruce Power has as an international leader in supplying cobalt, which recently has been expended to medical-grade cobalt that is used to treat brain tumours.

To anchor the project, and the business and operational model securing this infrastructure, the isotope of focus for this new infrastructure will be Lutetium-177 (Lu-177).

The aim is to establish the next generation of national isotope infrastructure that would complete the life cycle in Canada, complementing cyclotrons and research reactors. Internationally, this would be the most stable supply with redundancy of Lu-177 and could be expanded to other isotopes once the foundation is in place.

Bruce Power will be responsible for the operation and production of isotopes and manage this through a partnership with Kinectrics and Framatome, which will have a service agreement for key developmental risk, implementation and commercial elements. They will take the Lu-177 from Bruce Power, process it in a new facility based in Ontario, and export this around the world.



Bruce Power and the Saugeen Ojibway Nation (SON)

The SON and Bruce Power have entered into a collaboration agreement to jointly market new isotopes in support of the global fight against cancer while also working together on creating new economic opportunities within the SON territory by establishing new isotope infrastructure. Bruce Power and SON have agreed to collaborate in the development of this infrastructure project not only as a means of building trust, but towards enhancing SON's ability to generate an on-going revenue stream that will benefit the SON communities.

The SON is comprised of the Chippewas of Nawash Unceded First Nation and the Chippewas

of Saugeen First Nation. The SON people are among the Anishinaabek people of the Great Lakes region. The SON are the Indigenous Peoples of the Anishinaabe-aki or Anishinaabekiing, or what is now known as the Bruce and Grey region.

The Territory is the source of SON rights and identity and the basis of SON cultural, spiritual, and economic survival. The Bruce Power site, the world's largest nuclear operating facility is located on the Traditional Territories of the SON.

SON and Bruce Power have been working together over the past few years on a number of initiatives including environmental protection and stewardship, employment, education, training and contracting. Bruce Power and SON have created a number of forums for these interactions



to take place and they have recently resulted in stronger collaboration. Progress on these initiatives has created confidence in the ability to work together, committed to continuing to build a strong and positive relationship. The foundation of this progress is recognition of the importance of meaningful and reciprocal dialogue towards creating opportunities to work together.

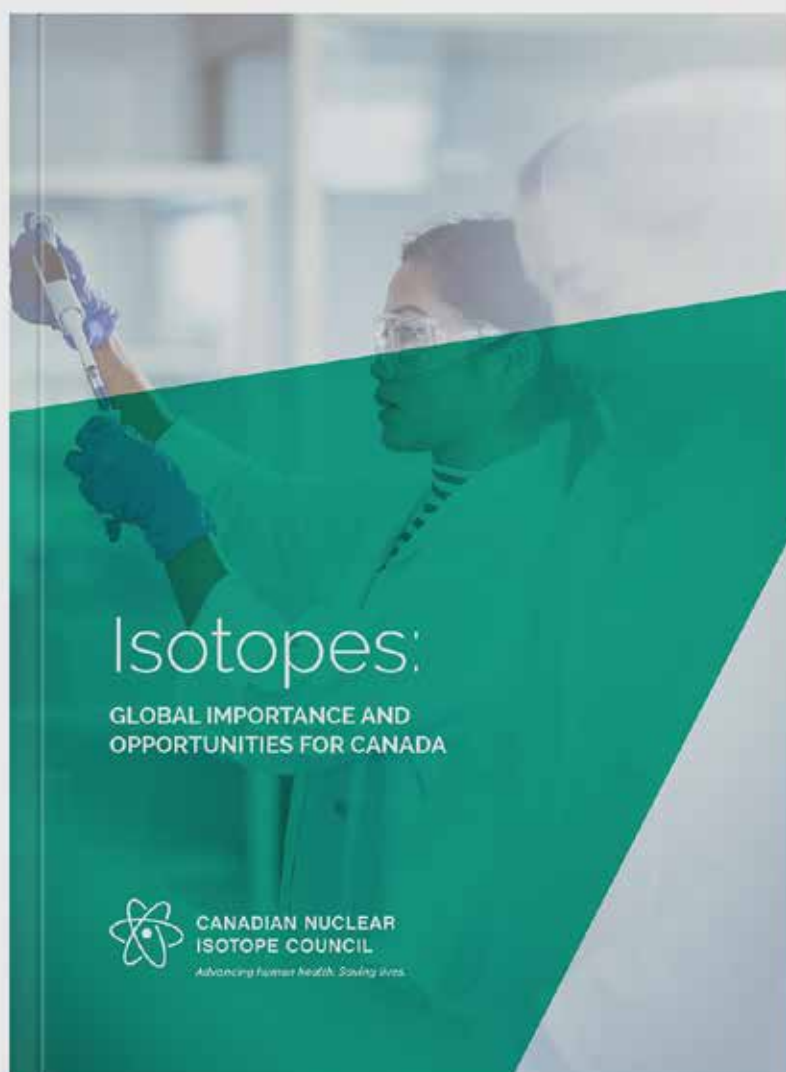
The partnership that SON and Bruce Power have established is an example of the work needed to advance reconciliation. First Nations have long sought to an equal share in the wealth generated from their lands in ways consistent with SON interests and aspirations. This is the type of new and creative model needed to translate that vision into a reality.



What is Lutiteum-177?

Lu-177 is a medical isotope used in targeted radionuclide therapy to treat conditions like neuroendocrine tumours and advanced prostate cancer. The medical grade isotope is used to destroy cancer cells while leaving healthy cells unaffected. To create Lutetium-177, a stable isotope, Ytterbium-176, is sealed in special containers and irradiated in a nuclear reactor for two weeks. Once it is processed and delivered to health-care facilities, each container can treat about 200 patients.

Canada's supply of Lu-177 is currently mainly sourced from McMaster University's reactor, however over the past year Bruce Power has made a significant number of announcements that will see Bruce Power beginning to supply the world market starting in 2022.



The Canadian Nuclear Isotope Council

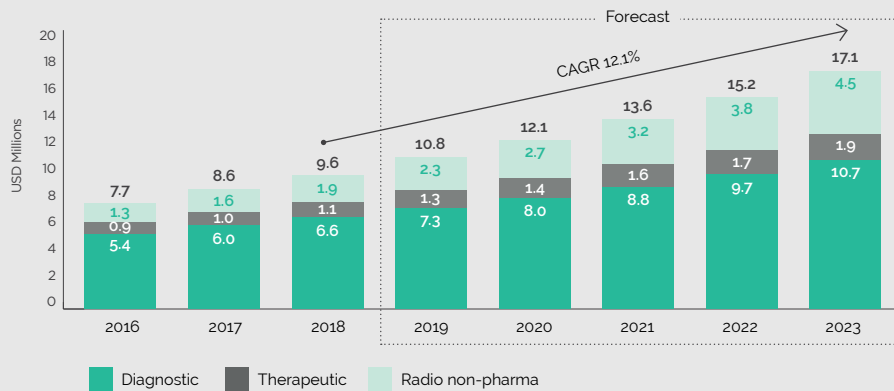
The CNIC is an independent organization consisting of representatives from various levels within the Canadian health sector, nuclear industry and research bodies, convened specifically to advocate for our country's role in the production of the world's isotope supply. The CNIC serves as a voice in safeguarding the continued availability of isotopes, ensuring our public policies are risk-informed and science-based, and support the highest levels of public health and safety.

Isotopes a global opportunity for Canada

In its 2019 report, *Isotopes: Global Importance and Opportunities for Canada* the Canadian Nuclear Isotope Council (CNIC) highlighted the need for strong Canadian leadership to ensure a domestic and international supply of medical isotopes. The report makes it clear that Canada must enable investment in its isotope infrastructure and ensure the building blocks are

in place for this sector to remain a global leader. Such investments would exhibit a commitment to Canada's role as a leader in nuclear medicine, and dramatically bolster the country's capacity to innovate while delivering substantial economic and societal benefits to both Canadians and patients around the globe.

FIGURE 12: Global Isotope Market, 2016-2023



The CNIC’s report reveals that:

- Two-thirds (66 per cent) of Canadians are concerned about ceding their leadership position in isotope production and research and development and a further
- 63 per cent of Canadians support the development of a national strategy for isotopes to ensure Canada remains at the forefront of this sector.

- This also presents a major economic opportunity for Canada. The size of the global isotope market was estimated to be \$9.6 billion (US) and is projected to grow to over \$17.1 billion (US) by 2023.

As a founding member of the CNIC, Bruce Power is well positioned to help Canada capitalize on this opportunity for medical isotope production, which will deliver tangible impact to Canadians generating clear economic and societal benefits.

Energy for the Next Generation

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Indigenous and Community engagement





Indigenous and Community Engagement

Being a good community partner is one of Bruce Power's core values, and we take this responsibility seriously. Every year, our Community Investment and Sponsorship Program donates about \$2 million to organizations, projects and events that enhance the quality of life in Bruce, Grey and Huron counties, and across the province and country. We also launched an Environment and Sustainability Fund.

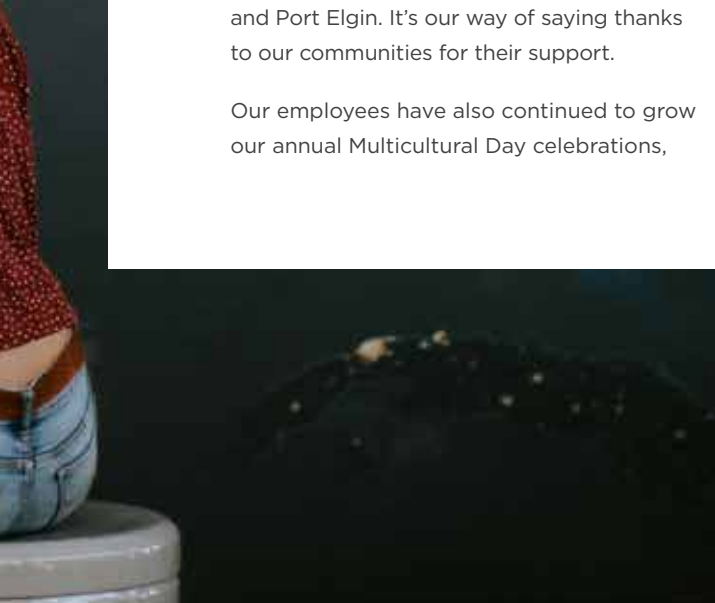
Bruce Power and its employees are extremely active in our communities. Our 4,200 employees and hundreds of local contractors give countless hours to projects, sports and fundraising initiatives that improve the quality of life in their communities.

The company also holds a community celebration each summer, rotating the event between our host communities of Kincardine and Port Elgin. It's our way of saying thanks to our communities for their support.

Our employees have also continued to grow our annual Multicultural Day celebrations,

where community members are introduced to different customs, arts, crafts and foods unique to dozens of different cultures from around the world, but whose descendants now live in the Kincardine area. The event is enjoyed by over 1,000 people every year.

Our community is integral to our success. We enjoy great support along the Lake Huron shoreline, but it's something we will never take for granted, and that's why we strive to be the best corporate citizen we can be.





Indigenous Engagement

Bruce Power also works closely with local Indigenous communities, on whose Traditional lands our site is located.

The company has Protocol Agreements and values a strong working relationship with the Saugeen Ojibway Nation, Historic Saugeen Métis and the Métis Nation of Ontario.

In 2019, we renewed our Indigenous Community Investment Fund educational, environmental, training and youth development initiatives in local Indigenous communities. Bruce Power also introduced a four-year Indigenous Scholarship Program in 2015 to assist post-secondary students as they further their studies, and extended it by another four years in 2018. A separate Indigenous Scholarship for Post-secondary Education Beyond First Year Program supports students from our local Indigenous communities of Saugeen, Nawash, Historic Saugeen Métis and Métis Nation of Ontario Region 7 after their first year of post-secondary school, when scholarships are more difficult to obtain. Ten students receive \$2,000 through this program.

Bruce Power and its supplier partners have also created an Indigenous Relations Supplier Network

(IRSN) as they look to further strengthen their relationships with local Indigenous communities.

The IRSN, which has been under development since June 2017, is focused on a coordinated and collaborative approach to community investment, training, education and employment.

This will be a key vehicle to ensure that Indigenous communities have the opportunity to actively participate in the company's ongoing investment program in the area of employment, business partnerships and procurement. Through the IRSN, Bruce Power and other members of the Organization of Canadian Nuclear Industries, can collaborate on projects enabled through work on site to help grow Indigenous business communities, create long-term jobs, and identify areas to focus on for collective social investment.

Bruce Power is also an active member of the Canadian Council for Aboriginal Business and was awarded a Gold level certification in its Progressive Aboriginal Relations program, which is the highest level offered by the CCAB. Bruce Power is only one of 17 companies in Canada to receive this designation. We also work closely with our suppliers and contractors, encouraging them to become active members of the CCAB.



We also hold many events each year on our site, including Indigenous Day celebrations, which welcome members of our First Nation communities to our site to teach employees about their culture.

Local and Provincial Polling

Bruce Power, while in the electricity generation business, relies heavily on the support and commitment of our surrounding communities. In a phone survey of 600 randomly selected Ontario residents in May 2018, support for refurbishment Bruce Power's nuclear plants reached 8 in 10 Ontarians.

The poll concludes that 76 per cent of decided Ontarians support refurbishment with over 34 per cent strongly in support, compared to only 11 per cent who strongly oppose. In terms of geographic support, 74 per cent of individuals in the Greater Toronto Area (GTA) and 82 per cent outside of the GTA are supportive, meaning support is consistent across the province.

Polling of residents in Grey, Bruce and Huron counties shows the opinions about the refurbishment of the Bruce facility, and Bruce Power as an organization, have not changed significantly since spring 2014.

9 in 10

residents are most likely to agree they have confidence the Bruce Power facility operates safely and that Bruce Power is a good community citizen.

8 in 10

of residents continue to support the life extension of Bruce Power nuclear facility, statistically unchanged from spring.

8 in 10

Of those that are familiar with Bruce Power, impressions remain positive, as the vast majority (84%) continue to hold positive views of the organization.

Jobs

The top reason (21%) residents are most likely to support refurbishment of the Bruce facility.







BrucePower™

Innovation at work

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