Canadian Nuclear Safety Commission | Commission canadienne de sûreté nucléaire

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Written submission from the Canadian Council for Public-Private Partnerships

Mémoire du Conseil Canadien pour les Partenariats Public-Privé

In the Matter of

Bruce Power Inc. – Bruce A and B Nuclear Generating Station

Request for a ten-year renewal of its Nuclear Power Reactor Operating Licence for the Bruce A and B Nuclear Generating Station

Commission Public Hearing – Part 2

May 28-31, 2018

À l'égard de

Bruce Power Inc. - Centrale nucléaire de Bruce A et Bruce B

Demande de renouvellement, pour une période de dix ans, de son permis d'exploitation d'un réacteur nucléaire de puissance à la centrale nucléaire de Bruce A et Bruce B

Audience publique de la Commission – Partie 2

28-31 mai 2018

Canada

The Canadian Council for Public-Private Partnerships
Le Conseil Canadien pour les Partenariats Public-Privé

55 University Avenue, Suite 608, Toronto, Ontario, Canada M5J 2H7 Tel: 416.861.0500 www.pppcouncil.ca

March 26, 2018

Mr. Marc Leblanc
Commission Secretary
Canadian Nuclear Safety Commission
280 Slater Street
Ottawa, ON K1P 5S9

Dear Mr. Leblanc,

On behalf of The Canadian Council for Public-Private Partnerships (CCPPP), I am writing to support the application by Bruce Power for the renewal of its 10-year Nuclear Power Reactor Operating License for Nuclear Generating Stations A & B.

CCPPP is a national, non-partisan, member-based organization that works closely with all levels of government and Indigenous Communities across Canada to enable smart, innovative and modern approaches to infrastructure development and service delivery, and to demonstrate excellent value for money through public-private partnerships. We are proud to have Bruce Power as an active and longstanding member of The Council – it is the largest and one of the most unique public-private partnerships in Canada and its track record of success has become a benchmark against which other P3 projects, particularly in the global energy sector, are measured.

As you are aware, Bruce Power is a Canadian-owned partnership between the Ontario Municipal Employees Retirement System (OMERS), TransCanada Corporation, the Power Workers' Union (PWU) and The Society of Energy Professionals. In addition, a majority of the employees on the site are also investors in the business. Indeed, from the very beginning, Bruce Power exemplified best corporate practices and established a core set of values with an emphasis on people being key to its overall success. These values guide the mandate of the company, continuing to ensure business is carried out in an ethical, respectful, safe and professional manner.

Today, Ontarians are benefiting from a clean, reliable, and affordable energy system largely due to the successful application of the P3 model. In the case of Bruce Power, this means that the assets on the Bruce site remain owned by the Province of Ontario yet operated by Bruce Power, while the company's partners meet all investment requirements. This in turn dictates that significant risk has been transferred to the private sector away from the taxpayer. Since 2001, Bruce Power has invested $10 billion into public assets, while any operational efficiencies achieved through their arrangement with the IESO is rebated back into the electricity system, further reducing the price of power for families and businesses. This investment Bruce Power has made – and continues to make – improves the operational performance of each asset, which is good for the facility, the province, and ratepayers.

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Leveraging economies of scale in the areas of the life-extension program as well as day-to-day operations such as relationships with suppliers, procurement of materials, labour arrangements and asset management strategies all contribute to finding further ratepayer savings. Bruce Power's strong track record of delivering significant value through low-cost and reliable electricity demonstrates that nuclear power can be operated safely and cost-effectively by the private sector in a competitive market.

Last year, the Ontario Ministry of Energy released its Long-Term Energy Plan, which outlines the role of nuclear and the Bruce site in the future of the province's energy supply mix. An innovative and highly technical life-extension strategy for Units 3-8 will see billions of private dollars invested in these provincially owned assets over the next 20 years, extending their output in providing stable, low-cost electricity.

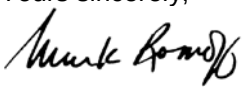
Particularly noteworthy is the importance of an independent safety regulator to the Bruce Power operation. Canada's nuclear regulatory regime is of exceptional standing internationally and has demonstrated 50 years of safe reactor operations. It is within this robust regulatory environment that Bruce Power has been identified as a peak performer in conventional health and safety, security, and waste management, and this level of oversight not only highlights the rigorous safety criteria the facility abides by, it also helps boost the confidence of Ontarians in the management of public assets. Bruce Power has achieved its top ratings in recent years on the annual report card, which reflects the commitment to lifecycle performance that P3s can bring to major infrastructure. Given the robust regulatory regime in Canada, this places Bruce Power as a world leader in nuclear safety and performance.

In The Council's view, Bruce Power stands out as a leading example of a well-established, privately funded infrastructure project in Ontario that will continue to have significant impact. As such, we encourage the Commission to renew Bruce Power's license which will ensure nuclear energy continues to be an instrumental component of Ontario's energy mix and integral to the province and Canada achieving its GHG emission targets. This will help ensure that Ontario and Canada are well-positioned to benefit from the next wave of industry advancements, have cleaner energy, and strengthen our provincial and national economies.

As a complement to the above, you might also find the enclosed case study that The Council and Bruce Power completed to be of interest. It reviews the successes and challenges over the last 15 years of this innovative arrangement, evaluating its value and how Bruce Power is fulfilling its role in Ontario's Long-Term Energy Plan.

I would be happy to respond to any further questions you may have.

Yours sincerely,



Mark Romoff
President and CEO

Bruce Power: Canada's Largest Public-Private Partnership

A CASE STUDY ON DELIVERING CLEAN, AFFORDABLE ELECTRICITY AND INVESTMENT IN INFRASTRUCTURE

2001–2016

November 2016

The Canadian Council for Public-Private Partnerships
Le Conseil Canadien pour les Partenariats Public-Privé

Bruce Power™
Innovation at work

Canada currently has 245 public-private partnerships (P3s), with the largest, and one of the more unique, being Bruce Nuclear Generating Facility.

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Executive Summary

PUBLIC-PRIVATE PARTNERSHIPS

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, and it has proven worthy of that gold standard over the following 15 years.

During that time, Bruce Power has invested $10 billion of private money into the publicly owned site, while doubling the number of operational units from four to eight. Having returned the site to its full potential, the company is now gearing up for a multi-year, $13 billion investment program to extend the life of Units 3-8, to provide stable, safe, low-cost, carbon-free and reliable power to the province for decades. The economic impact of operating the facility will result in 22,000 direct and indirect jobs annually at peak, and $4 billion in annual economic benefit through 2064.

A public-private partnership (P3) involves a joint venture between government and the private sector to deliver important services to the public. The vast majority of these tend to be focused on the delivery of large infrastructure projects. Canada currently has 245 P3s, with the largest, and one of the more unique, being Bruce Power.

The Bruce Power P3 achieves a number of key goals for the province, including 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.

Bruce Power is Canada's only private sector nuclear generator and the largest operating nuclear facility in the world. The company produces up to 6,400 megawatts (MW) at peak– about 30 per cent of Ontario's electricity – from its site on the shore of Lake Huron, at 30 per cent less than the average residential price of power. It is a Canadian-owned partnership of the Ontario Municipal Employees Retirement System (OMERS), TransCanada Corporation, the Power Workers' Union (PWU) and The Society of Energy Professionals. In addition, a majority of the employees on the site are also investors in the business.

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 all 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 to ensure this liability is fully funded.

This case study will review the successes and challenges over the last 15 years of this innovative arrangement, evaluating its value, and how Bruce Power is fulfilling its role in Ontario's Long-Term Energy Plan.

BRUCE POWER IS A CANADIAN-OWNED PARTNERSHIP BETWEEN:

OMERS

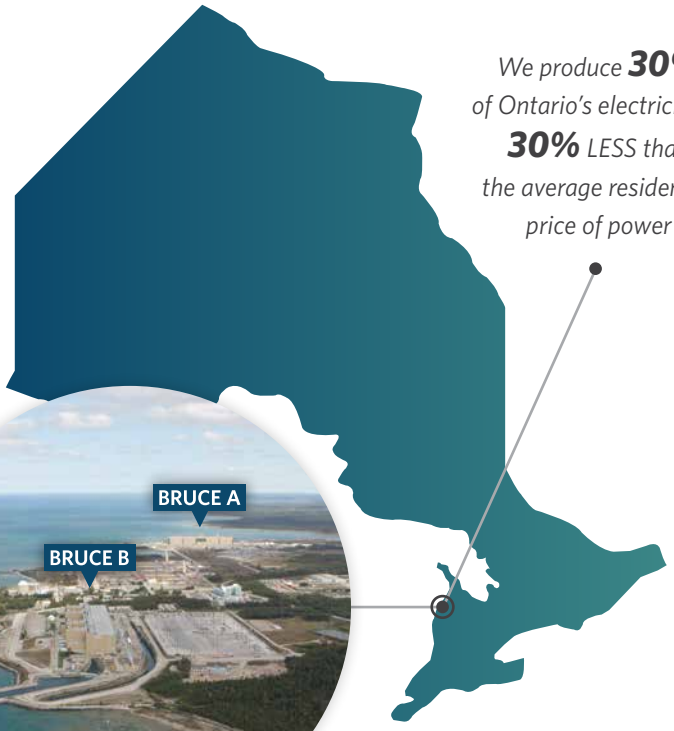
TransCanada

POWER WORKERS' UNION

THE SOCIETY OF ENERGY PROFESSIONALS IFPTE LOCAL 160

87% of Bruce Power employees also invest in the site

Bruce Power™

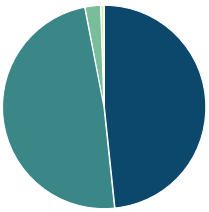


*We produce **30%** of Ontario's electricity at **30%** LESS than the average residential price of power*

The Bruce site is leased from the Province of Ontario under a long-term P3 arrangement, where all of the assets remain publicly owned and the company is responsible for operating and investing in the units.

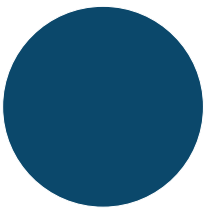
FIGURE 1 BRUCE POWER OWNERSHIP

- **OMERS** 48.5%
- **TransCanada** 48.5%
- **Employee Unions** 2.6%
- **Employee Trust** 0.4%



SITE AND ASSETS

- **Province of Ontario** 100%



History of the Bruce Power site

The nuclear industry in Ontario has an impressive and dynamic past dating back more than 50 years when the provincial government, through Ontario Hydro, began an unprecedented period of construction on a reactor fleet of 20 units on the Bruce, Pickering and Darlington sites. All of the units on the Bruce site, when brought into operation beginning in the 1970s and '80s, had strong operational performance and were viewed as some of the best CANDU units in the world. From a cost-competitiveness point of view, they provided the province with a reliable source of low-cost electricity.

The build program – at Bruce and Pickering in the 1970s and '80s in particular – were viewed as a tremendous success, and the industry had built a strong capability to execute both operations and projects by leveraging its immense economies of scale.

In the early-1990s, a dramatic shift took place in Ontario's nuclear industry, as demand slowed due to global economic factors, and the performance of Ontario's CANDU fleet declined. Ontario Hydro was challenged moving from a nuclear construction company to an operating organization. These factors led to a decision to lay up Bruce A's four units, as well as the Pickering A units. It was a difficult time for the 1,800 employees at the station and their families as many employees had to leave the area to find employment. This caused economic devastation for local businesses, a decline in real estate prices, schools being closed and almost a general depression in the area. The lost output was replaced largely with coal-fired generation, which also assumed a role as a baseload supplier. In the late-90s, Ontario Hydro was divided into a number of successor companies and all generation assets were placed under the control of a new company called Ontario Power Generation (OPG).

▶ *Construction of Bruce A in the 1970s.*

*The source of **30%** of Ontario's electricity at **30%** LESS than the average residential price of power and employing more than **4,000 people** on a permanent basis, the Bruce Power site has been the single largest source of Building Trades work in Ontario over the last decade.*

When OPG was formed, it was given a mandate to 'de-control' its generating assets at a certain pace and the first site to be moved into this new model was the Bruce Nuclear Generating Facility.

In July 2000, after an extensive and competitive process lasting several months, an agreement was reached between OPG and Bruce Power, for the lease of the Bruce facility. One possible issue that had to be addressed was the fact there was no funding for the decommissioning of the facilities set aside for when the site reached its end-of-life. This was something Bruce Power would support a solution to as part of the agreement. The transaction included a lease agreement for the facility and a series of ancillary agreements. In addition to leasing the power plants and related systems, Bruce Power also acquired nuclear fuel and other assets. The initial lease term was for 18 years plus options to extend up to an additional 25 years. It included lump-sum payments including the first one on the date Bruce Power was formed – May 11, 2001 – for $370 million.

The characteristics of this transaction included:

- The Bruce assets would remain owned by the province and leased to Bruce Power
- Bruce Power would assume operational risk related to the facility
- Private investment would be required to meet all capital requirements from the Bruce site
- Bruce Power would generate competitively priced electricity
- Bruce Power would fund long-term liabilities for waste management and decommissioning
- Like all nuclear facilities in Canada, the Bruce Power site would be federally regulated
- Both unions representing employees on site, the Power Workers' Union and The Society of Energy Professionals, would have an equity position in the company
- Collective Agreements with the PWU/Society would be inherited by Bruce Power

Consistent with this, Bruce Power's focus was to return additional generation to the power grid and the company embarked on a decade-long investment program to return the Bruce site to its up to 6,400 MW capability, significantly extending the operating life of the provincially owned assets.

However, early in this process there were those who were skeptical of a private company taking over the Bruce site. There was some concern that private participation would result in putting commercial success ahead of safety. From the very beginning Bruce Power set out a list of values the company would live by with an emphasis on people being key to Bruce Power's success. These values guide the conduct, decision-making and relationships of the company to ensure business is carried out in an ethical, respectful, safe and professional manner. They have lived up to these standards ever since.

HISTORICAL TIMELINE

2001
Bruce Power assumes operational control of the site and confirms plans to restart Units 3 and 4. Terrorist attacks in the U.S. prompt the formation of a full-time, rapid-response, armed security force at Bruce Power.

2002
Ontario's electricity market opens to competition. TransCanada Corp. and BPC Generation Infrastructure Trust (OMERS) join Cameco, the PWU and the Society in the Bruce Power partnership while British Energy withdraws.


BACK IN BUSINESS

Thank you, Bruce

Premier leaves nuke plant that helped us come out of dark

Michele Mandel will return

2003
Units 5, 7 and 8 at Bruce B remain online to help restore power to the grid after a massive blackout leaves large parts of Ontario and the northeastern U.S. without power. Unit 4 is returned to service after being shut down by Ontario Hydro in 1998.

2004
Unit 3 returns to service after being taken off-line by Ontario Hydro in 1998.

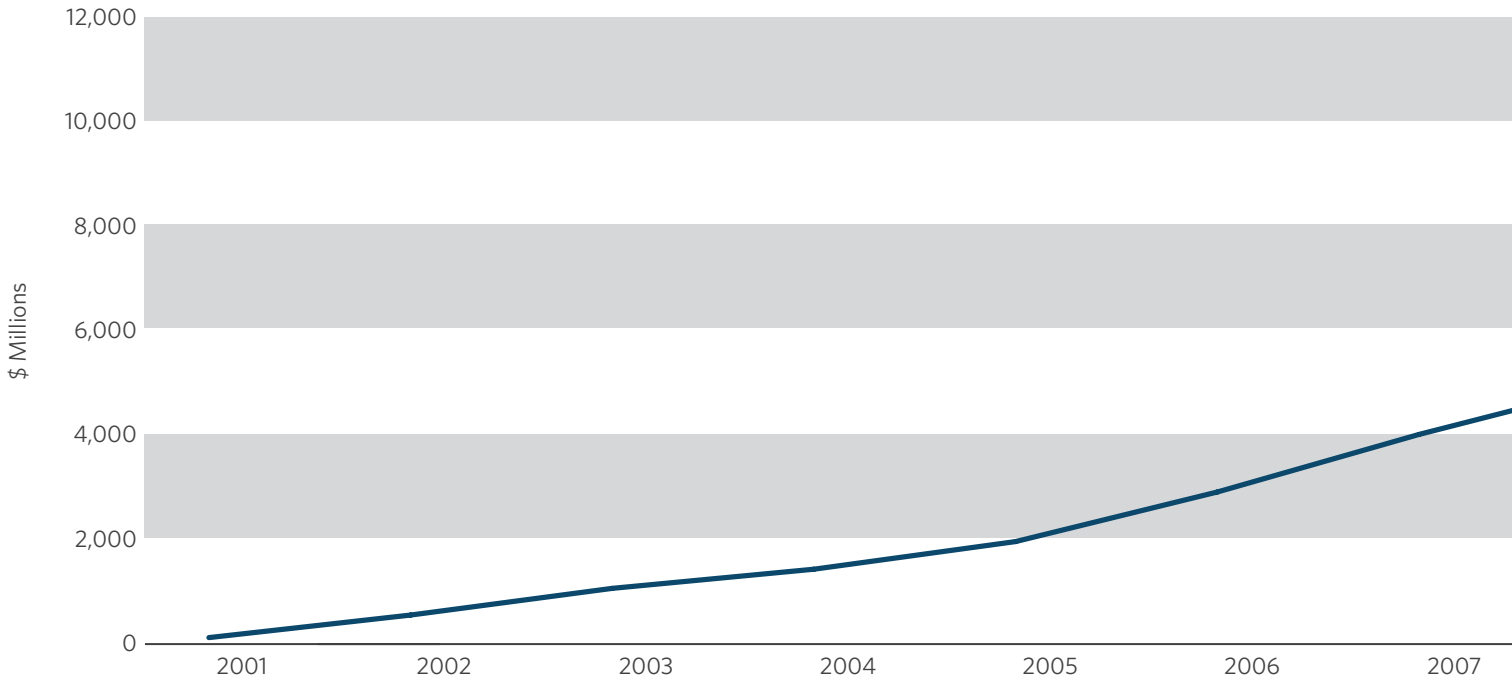
2005
A multi-billion dollar agreement is reached between Bruce Power and the Ontario Power Authority to pave the way for the refurbishment of Units 1 and 2, shut down since 1997 and 1995 respectively.

2006
Bruce Power celebrates its 5th anniversary on May 11 when Lieutenant Governor James Bartleman officially opens a new Support Centre. Bruce B finishes the year as the top performing multi-unit nuclear plant in Canada.

2007
History is made in Unit 2 with the installation of the first steam generator ever to be replaced in a CANDU reactor.

Bruce Power establishes a multi-year agreement to power the Rogers Centre in a marketing partnership with the Toronto Blue Jays.

FIGURE 2 BRUCE POWER'S CUMULATIVE AMOUNT OF INVESTMENT ON THE BRUCE SITE



2008
A protocol agreement is signed with the Saugeen Ojibway Nation.

2009
Bruce Power introduces dynamic capability to support changing market conditions.

2010
Employees on the Bruce site achieve 22 million injury-free hours. The last of the Bruce B units, Unit 8, is up-rated to 93%.

2011
A Fukushima Response Program is launched on site after earthquakes and a tsunami in Japan cripple the Fukushima Daiichi nuclear facility. Bruce Power celebrates its 10th anniversary on May 11 with a site-wide barbecue and scholarship program for area students.

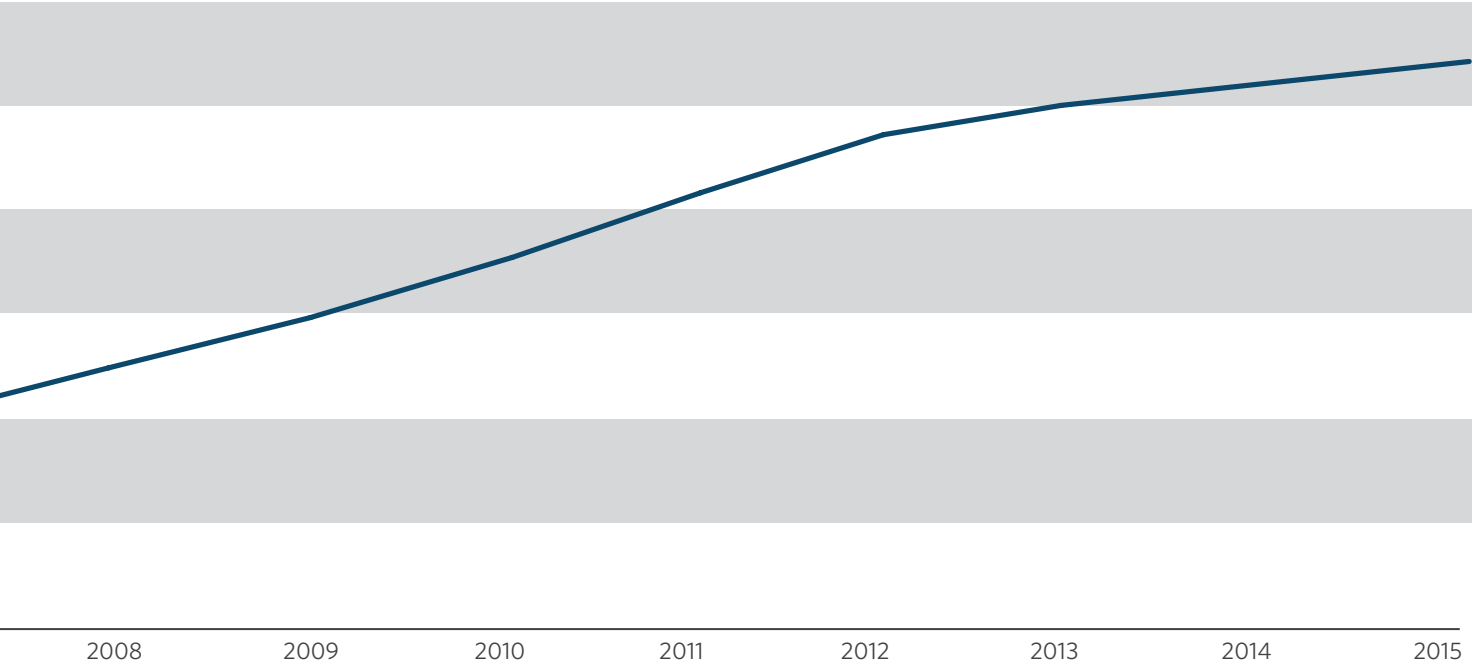
2012
Staff and contractors return Units 1 and 2 to service, while life-extension programs are completed in Units 3 and 4. A new Emergency Management Centre is installed in the Visitors' Centre. Bruce Power is recognized as one of Canada's top employers for young people.

2013
On April 22, for the first time in about two decades, all eight units on the Bruce site were providing electricity to Ontario's grid.

2014
Entered 2014 having broken a site record for production from 1991, producing 30% of Ontario's power and over half its nuclear in 2013.

2015
Canadian Nuclear Safety Commission renews Bruce Power's operating licence for five years.

2015
Bruce Power signs amended agreement with IESO securing 8-Units of operation up to 2064.



Nuclear and Ontario's Long-Term Energy Plan

In December 2015, Bruce Power and the Independent Electricity System Operator (IESO) entered into an amended, long-term agreement to secure up to 6,400 megawatts at peak of electricity from the Bruce Power site, through a multi-year investment program.

Beginning in 2020 and running for nearly two decades, Bruce Power will refurbish Units 3-8, securing a clean, reliable and affordable source of electricity for Ontario families and businesses for decades to come, as was outlined in Ontario's 2013 Long-Term Energy Plan (LTEP), which is scheduled to be reviewed in late-2016.

The amended agreement enables the company to progress with a series of incremental life-extension investments, including refurbishment. The asset management and refurbishment projects will cost a combined $13 billion, all of which will come from private investment, with no risk to the ratepayers and public on cost or schedule over-runs, as per the agreement.

The agreement was a major milestone in the history of Bruce Power as it enters the next phase of its site development. The agreement secures Bruce Power in its long-term role as supplier of low-cost electricity and allows the company to immediately invest in life-extension activities to Units 3-8 to support the overall long-term refurbishment program that will commence with Unit 6 in 2020. By optimizing the operational life of the site, significant ratepayer and system benefits will be realized.

Over the past 15 years, Bruce Power has returned its eight-unit site to its full capacity, allowing Ontario to phase out coal-fired power generation, while providing low-cost, reliable and carbon-free electricity to families and businesses. Bruce Power is Ontario's lowest cost source of nuclear, currently generating over 30 per cent of the province's electricity at 30 per cent below the average residential cost of power. Extending the operational life of the Bruce Power units will ensure Ontario families and businesses have long-term price stability.

Highlights of the arrangement include:

- On Jan. 1, 2016, Bruce Power received a single price for all output from the site of $65.73 per megawatt hour (MW/h). This compares to the 2015 price paid to Bruce Power of $64.90 MW/h against an average price of residential electricity in the province to date in 2015 of $98.90 MW/h to the end of the third quarter (January 2015-September 2015).
- Bruce Power, as a private sector operator, will continue to meet all investment requirements for the site. While there is a process to determine the cost of refurbishment and off-ramps, it is estimated the six refurbishments in the agreement will cost $8 billion ($2014), in addition to $5 billion ($2014) in a range of other life-extension activities from 2016-53. In the short-term, between 2016 and 2020, the company will be investing approximately $2.3 billion ($2014) as part of this plan. This is incremental to the company's ongoing financial investments to sustain eight units of operation.

- The refurbishment of each unit will add 30 to 35 years of operation, extending the life of the Bruce site to 2064. Over the past decade, Bruce Power units have undergone numerous life-extending maintenance programs which allows the sequencing of refurbishments while optimizing asset life.
- Bruce Power will bear the risk of delivering these projects on time and budget with upside-sharing for better-than-planned performance with the IESO. The price of these refurbishments will be finalized prior to each project through a defined, transparent process in the agreement.
- The program will secure an estimated 22,000 jobs directly and indirectly from operations, and an additional 3,000-5,000 jobs annually throughout the investment program, injecting billions into Ontario's economy.
- Consistent with the LTEP, a series of realistic off-ramps have been built into the agreement related to both refurbishment performance and if the province's market conditions change.
- Bruce Power will continue to provide approximately one-third of its output (2,400 MW) as flexible generation, allowing the province to permanently balance system needs in a post-coal environment. This is a feature that only the Bruce Power units can provide, and has been used frequently by the IESO since 2009.
- As has been the case since 2001, Bruce Power will continue to assume responsibility for operating the site. In Canada, nuclear facilities are regulated by the federal government through the Canadian Nuclear Safety Commission (CNSC) and Bruce Power, as a licensee, will be responsible for meeting all regulatory requirements and gaining the necessary approvals to implement the investment program. The refurbishment timetable is consistent with Bruce Power's current site licence that runs to 2020, which assumes there will be no refurbishment within this period. The CNSC licencing process is an open, transparent process that provides the opportunity for public, community and Aboriginal engagement, and, consistent with past practice, Bruce Power will start the external engagement as part of this process in late 2016.


Radiation in our community
Radiation is all around us
Atoms and radiation
How is radiation exposure measured?
DOSE
TERRESTRIAL RADIATION
COSMIC RADIATION
INTERNAL RADIATION
HUMAN-MADE SOURCES OF RADIATION
Test your radiation knowledge
How did you do?
Sources of Radiation
14% Medicine
11% Food & Water
18% Buildings & Soil
14% Cosmic
1% Nuclear Industry
42% Natural Radon
Time, distance and shie
Limit their exposu
Distance themselve
Use shielding.
Try out the Geiger
Talking Safety
Safety First is
ruce Power's
alue

Attributes of Bruce Power's Public-Private Partnership

1. Investing in public assets
2. Management of long-term liabilities
3. Improving safety and the operational performance of the Bruce site
4. Provincial policy goals
5. People
6. Economic impact
7. Affordable, reliable power
8. Building public confidence
9. Independent Safety Regulator
10. Role of the IESO

1. Investing in public assets

One of the foundational attributes about public-private partnerships (P3s) is that they are always publicly owned. In the case of Bruce Power, this means the assets on the Bruce site remain owned by the Province of Ontario yet operated by Bruce Power, while the company's partners meet all investment requirements. This ensures that all the investment required to secure the role of Bruce Power as outlined in the LTEP can be achieved without negatively impacting the balance sheet of the taxpayers of Ontario, allowing the government to stay focused on priorities like health care and education, while also working to manage the provincial budget.

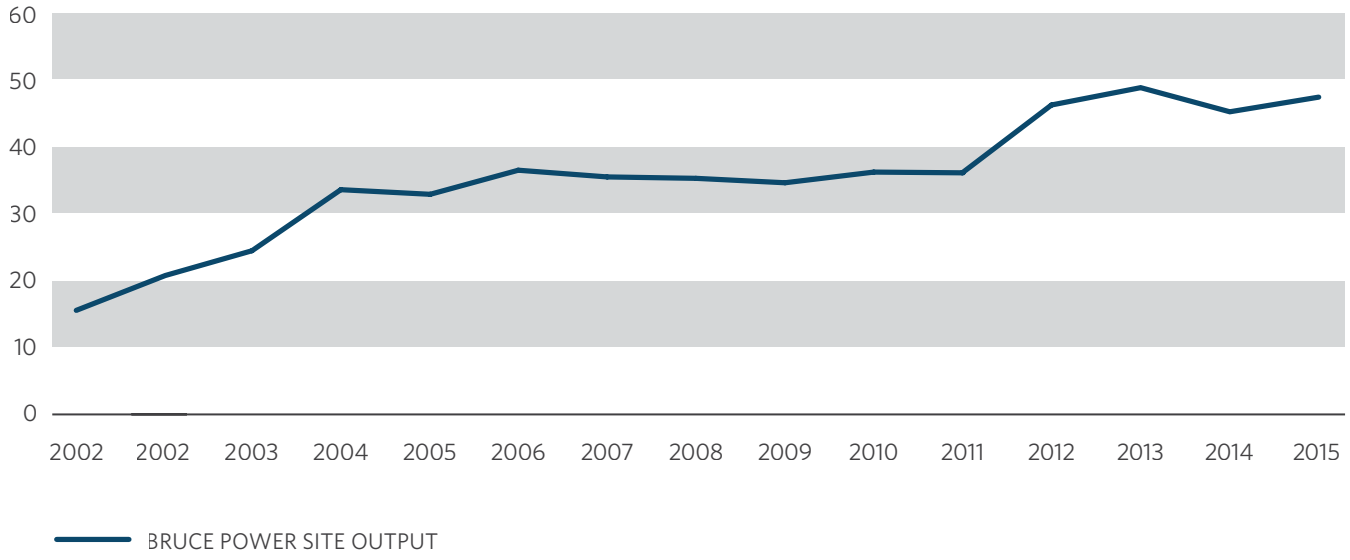
This innovative economic engine also has an unique ownership structure with TransCanada Corp. and OMERS, which represents over 460,000 plan members in Ontario Municipalities.

While returning four dormant units to service since 2003, Bruce Power and its industry partners have engineered and developed first-of-a-kind technology to do what many thought was impossible – breathe new life into reactors that were shut down by the former Ontario Hydro in the 1990s.

Bruce Power has made considerable progress in its first 12 years of operation in dramatically increasing the output from our site. In 2002, Bruce Power's first full year of operation, the site produced just over 20 Terawatt-hours (TWh) of electricity. In 2012, the site generated 35 TWh, and in 2015, the site produced over 47 TWh. This is due to major investment programs completed in both Bruce A and B over the last decade. Ratepayers and homeowners have reaped the benefits of this private investment by getting low-cost, carbon-free power from the assets they continue to own, not to mention the secondary economic benefits felt across Ontario through jobs for contractors and an influx of money into local communities.

Through equipment investment and maintenance outages since 2001, the company has successfully carried out hundreds of thousands of asset enhancement projects and investment programs, which have resulted in industry-leading success both in improving the performance of the Bruce Power units and extending their operational lives.

FIGURE 3 BRUCE POWER'S ELECTRICITY OUTPUT (2001-2015) TWh



*Since 2001, Bruce Power has invested **$10 billion** into public assets, with plans to invest another **$13 billion** over the next two decades.*

In 2013, the Ministry of Energy released its LTEP, which outlines the role of nuclear and the Bruce site in the future of the province's energy supply mix. The LTEP stated Bruce Power would contribute up to 6,400 MW at peak to the supply mix for decades to come. An innovative and highly technical refurbishment strategy for Units 3-8 will see billions of private dollars invested in these provincially owned assets over a 20-year period, extending their life and providing stable, low-cost electricity through 2064.

This massive investment – most likely to be the largest ongoing infrastructure program in the province for upwards of two decades – will create about 5,000 direct and indirect jobs annually and $1 billion in annual economic benefit through the purchasing of equipment, supplies and materials. In addition, Bruce Power will continue with its planned renewal program, investing private dollars into publicly owned reactors, allowing them to safely and reliably produce 30 per cent of Ontario's electricity at 30 per cent below the average price of power, while creating zero carbon emissions.

Since 2001, and through $10 billion of investment, the company has successfully:

- Enhanced the operational performance life of running units through strategic investments and ongoing investment in the plants.
- Made enhancements to Bruce A Units 3 and 4 to return the units to service and extend their operational life.
- Fully refurbished Units 1 and 2, replacing all major components such as the reactor core, steam generators, feeder tubes and electrical systems.

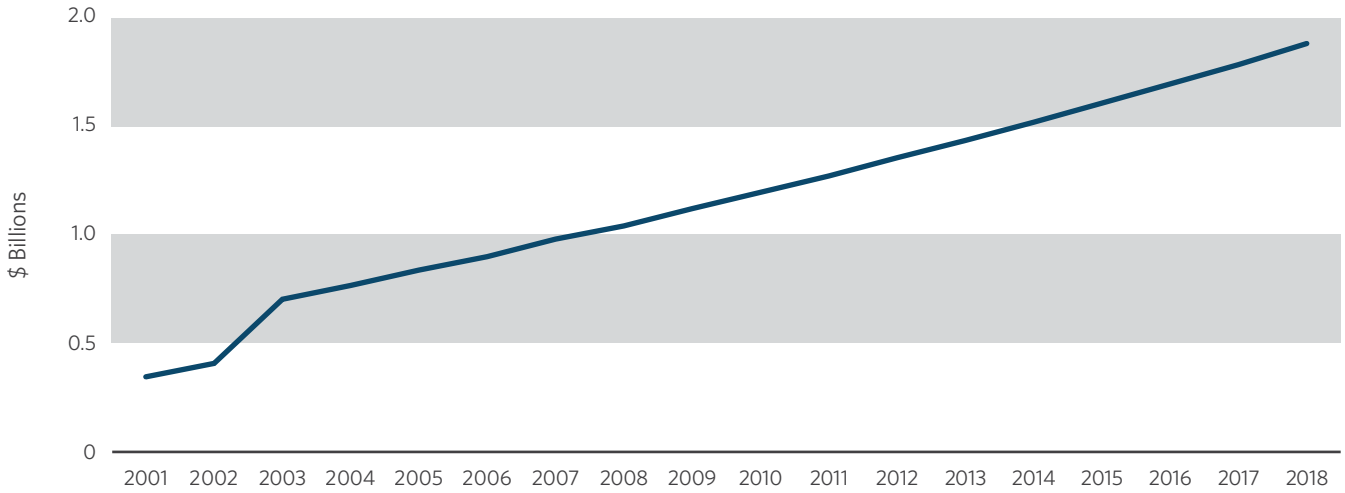
The investment Bruce Power has made – and continues to make – improves the operational performance of each asset, which is good for the company, the province and taxpayers.

2. Management of long-term liabilities

As part of this innovative P3 model, Bruce Power has the responsibility for funding long-term liabilities of the nuclear site including waste, spent fuel and decommissioning. The company pays ongoing fees to OPG to cover the cost of low- and intermediate-level waste and spent fuel stored at the Western Waste Management Facility, which is owned and operated by OPG and located on the Bruce site. The cost of decommissioning is funded by base rent payments over the initial term of the lease. This means when the reactors reach their end-of-life, the cost of long-term storage and ultimate disposal of waste and spent fuel has already been set aside, as is the the cost of decommissioning.

In accordance with the Ontario Nuclear Funds Agreement (ONFA) between OPG and the province, OPG established a Used Fuel Segregated Fund and a Decommissioning Segregated Fund (together the 'Nuclear Funds'). The Used Fuel Fund is intended to fund expenditures associated with the management of used nuclear fuel bundles, while the Decommissioning Fund was established to fund expenditures associated with the decommissioning of nuclear facilities and ultimate disposal of low- and intermediate-level nuclear waste materials. OPG maintains the Nuclear Funds in third-party custodial accounts that are segregated from the rest of its assets. The estimated cost of decommissioning, long-term storage and ultimate disposal of waste and spent fuel is updated at least every five years, at which time the fees paid by Bruce Power are adjusted accordingly. Bruce Power will have paid OPG $1.9 billion in base lease payments over the initial term of the lease to cover the cost of decommissioning.

FIGURE 4 BRUCE POWER'S CUMULATIVE BASIC RENT PAYMENTS (DECOMMISSIONING FUND) TO OPG 2001-2018



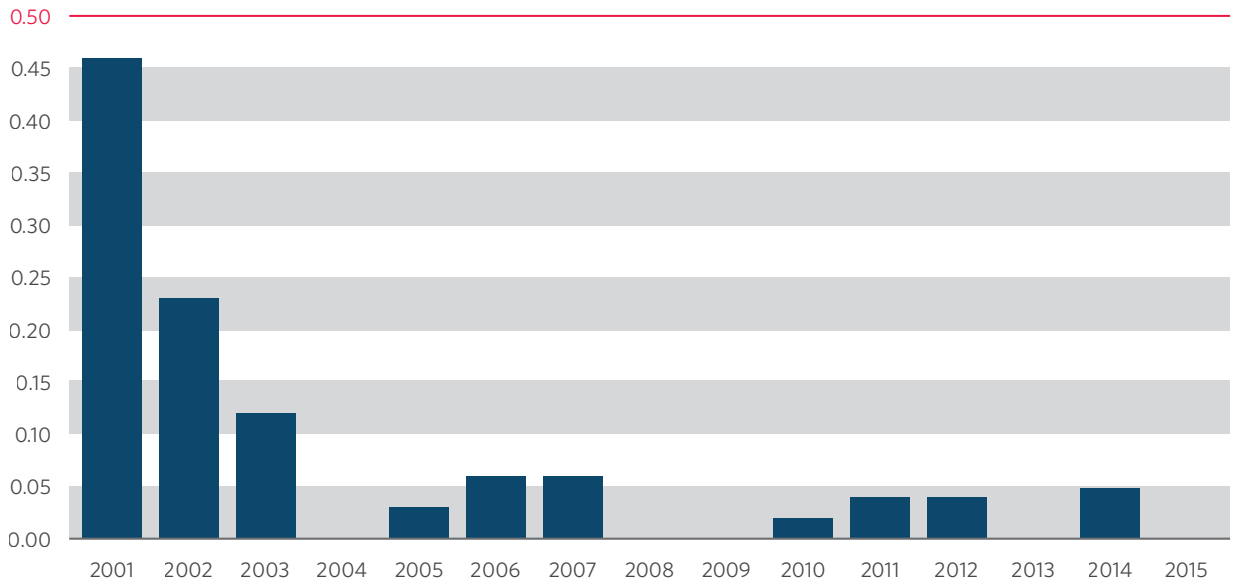
3. Improving safety and the operational performance of the Bruce site

Bruce Power has made considerable progress in its first 15 years to increase the output and operational performance from its site, while ensuring the highest level of safety. Given the nature of Bruce Power's business, as with all nuclear facilities, a high percentage of its costs are fixed so it's essential to get the most out of the generating assets through maximizing operational effectiveness. A key element to improving the operational performance of a nuclear site is a continuous focus on safety, which goes hand-in-hand with commercial success. The best performing and most efficient nuclear plants in the world all have strong safety performance. In 2001, Bruce Power established its number one value of Safety First and the focus on safety has never wavered despite a high level of activity on site. As the company increased its output and improved efficiency it has achieved industry-leading industrial safety performance.

Since 2001, Bruce Power has invested $10 billion into site improvements and Ontario's economy. As part of its long-term vision, Bruce Power plans to continue its site revitalization work and will invest $13 billion to ensure its remaining units provide safe, clean and reliable electricity for generations.

Bruce Power has not only increased its output but demonstrated strong operational performance through improved equipment reliability, leading to low forced-loss rates. Industry best practice has shown that a strong equipment reliability program is directly tied to long, reliable and safe operations. As the company has increased its equipment reliability index through replacing and repairing equipment, it has realized record runs at both Bruce A and B.

FIGURE 5 INDUSTRIAL SAFETY ACCIDENT RATE (LOST TIME ACCIDENTS/200,000 HOURS WORKED) BRUCE POWER SITE



The renewal of Bruce A began with the return-to-service of Units 3 and 4 in 2003/04 and continued with the refurbishment of Units 1 and 2, which concluded in 2012. These first-of-a-kind projects, as well as the continued modernization of Bruce B, have proven that Bruce Power's nuclear fleet can be revitalized.

Through these innovative work programs, operating operating performance has steadily improved across the site.

- Bruce B was the top performing multi-unit CANDU plant in the world in 2014 and was recognized internationally, being awarded the Institute of Nuclear Power Operators (INPO) award of excellence in recognition of its world-class performance. In doing so, Unit 5 also surpassed 500 days of continuous operation. The unit, one of the top performing CANDU reactors in the world, played a key role in the success of Bruce B in 2014, which provided over 15 per cent of Ontario's electricity.
- Bruce A achieved its first full calendar year of four-unit operation since the units were removed from service in the 1990s. Over the past 10 years, Unit 4 has consistently been one of the top CANDU units in the world.

FIGURE 6 INDUSTRY BENCHMARKS (LOST TIME ACCIDENTS/200,000 HOURS WORKED)

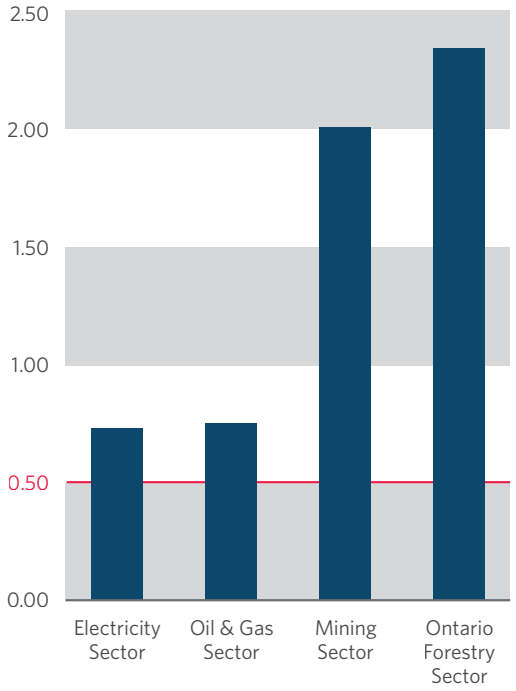
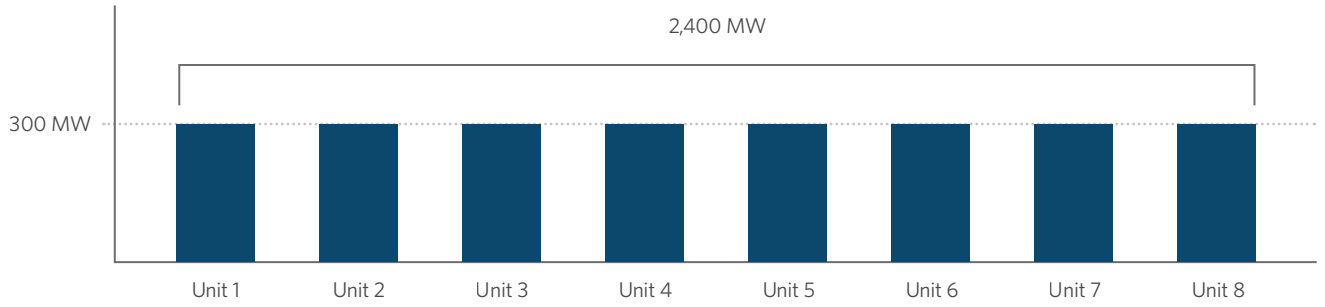


FIGURE 7 FLEXIBLE GENERATION



- All eight units at Bruce Power now provide up to 2,400 megawatts of flexible, emissions-free generation to the Ontario market to manage changing supply and demand, duplicating many of the dynamic attributes that coal used to provide the Ontario market.

As Bruce Power moves forward to renew, consistently modernize and extend the life of its nuclear fleet, it will build on lessons learned and the experience gained over the last decade, ensuring a greater certainty and predictability in future projects.

More broadly, completion of the new Bruce-to-Milton transmission line, in combination with the successful revitalization of Bruce A and continued strong Bruce B operating performance, ensures delivery of 6,300 MW of carbon-free energy to the people of Ontario. Through the Bruce A revitalization and transmission upgrades, Bruce Power was able to provide 70 per cent of the electricity the Province of Ontario needed to shut down its coal-fired facilities, a goal it accomplished in 2014. This clean-air initiative has resulted in the virtual end of smog days in the Greater Toronto Area, dropping from 53 in 2005 to none in 2015.

Bruce Power has continued to demonstrate it can improve the operational performance of the units on site, while carrying out asset management work in parallel as outlined in a number of key performance indicators, including the Forced Loss Rate (FLR). Bruce Power has made significant improvements in its FLR, which essentially measures the amount of time a nuclear unit is not producing electricity when it was planned to be operating. This is a standard and important metric across the nuclear industry and the FLR performance at both Bruce A and B has been improving consistently since 2004. At Bruce A, Units 3 and 4 were returned to operation in 2004 after being out of service for nearly seven years and the performance on average from these units continues to improve.

Since the return to service of Units 1 and 2 in 2012, these units have demonstrated strong operational performance, especially recognizing these units had been out of service for two decades.

As outlined in Figure 8, through investments and focus on excellence in operations, the additional life added from Units 3 and 4 has been significant, providing additional flexibility related to the refurbishment timing for these units. Also outlined in Figure 8, through investments and focus on excellence in operations, the additional life added from the Bruce B units has been significant, providing additional flexibility related to the refurbishment timing for these units. Bruce Power's ability to effectively manage asset life is a key consideration to manage investments going forward.

FIGURE 8 BRUCE A AND B ASSET LIFE MANAGEMENT RESULTS

UNIT	ORIGINAL	OPTIMIZED PRE-REFURBISHMENT	TOTAL LIFE EXTENSION
1	n/a	2043	+30 years
2	n/a	2043	+30 years
3	2009	2023	+ 42 years
4	2007	2025	+ 44 years
5	2015	2026	+ 33 years
6	2014	2020	+ 35 years
7	2016	2028	+ 33 years
8	2018	2030	+ 33 years

4. Provincial policy goals

The unique P3 structure of Bruce Power also 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 (GHG) while ensuring it has a reliable but flexible supply of electricity even though energy efficiency has reduced demand.

COAL PHASE-OUT

In the early-2000s the provincial government committed to phasing out coal from its energy mix portfolio – a goal met in April 2014. The phase out of coal saw a significant reduction in the province's level of harmful GHG emissions, and the number of smog days plummeted from 53 in 2005 to zero in 2015. The people of Ontario now have cleaner air thanks in large part to cleaner energy sources, including a revitalized Bruce site, which provided 70 per cent of the energy the province needed to shut down coal for good. From a full life-cycle analysis, nuclear power and wind are similar in magnitude when it comes to GHG emissions – the lowest of all energy options.

Ontario was the first jurisdiction in North America to end its use of coal-fired electricity when it closed the Thunder Bay Generating Station in April 2014. This was a multi-year effort that not only decreased the average Ontarian's environmental footprint, but also resulted in a financial benefit to the province. According to a 2005 Ministry of Energy report, phasing out coal could avoid 25,000 emergency room visits, 20,000 hospital admissions and 8.1 million illness cases, resulting in a financial benefit of $2.6 billion annually. Much of this success was made possible by Ontario's nuclear industry – without it, phasing out coal and still having a reliable supply of energy would have been almost impossible.

Having a balanced supply mix that allows for the continued advancement of renewable technology, while ensuring clean air, can occur with the continued operation of Ontario's nuclear fleet. This continued operation would allow Ontario to maintain, build from and realize its success of shutting down coal.

MEETING ONTARIO'S CLIMATE CHANGE GOALS

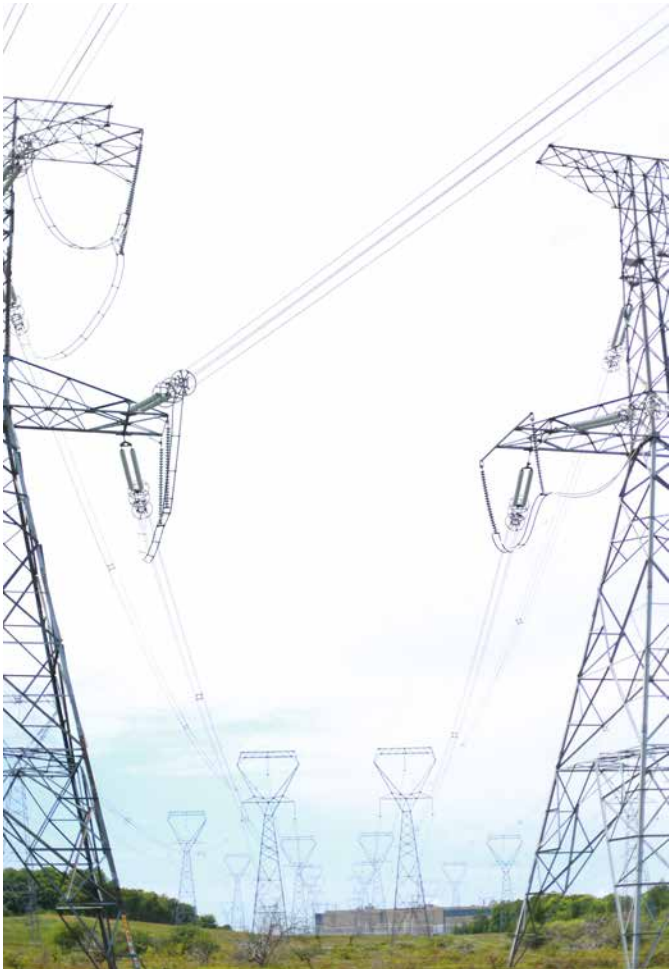
In December 2015, Canada and 194 other countries reached the Paris Agreement, which will strengthen the world's efforts to limit the global average temperature rise to below 2 C and pursue efforts to limit the increase to 1.5 C. Canada signed its formal commitment to this agreement in April 2016, and is committed to reducing GHGs by 30 per cent below 2005 levels by 2030. To achieve this, emissions need to reduce between 200 and 300 million tonnes (Mt) from projected levels, depending on economic growth and intensity of emissions.

Ontario has short-, medium and long-term climate change targets to significantly reduce GHGs. Ontario's long-term goal is to significantly reduce GHGs below 1990 levels. In 2014, the Ministry of Environment and Climate Change released an update on the progress being made toward this goal, which would see a six per cent reduction from 1990 levels by 2014, 15 per cent by 2020 and 80 per cent by 2050. This is equivalent to a 10.62 Megaton (Mt) CO_2 equivalent reduction by 2014, 26.55 Mt by 2020 and 141.6 Mt by 2050.

Ontario reported emissions of 170 Mt for 2014 and has thus succeeded in achieving the 2014 target, largely as a result of reductions of emissions in the electricity sector, which were mostly achieved through the closure of all its coal plants. This was made possible through the return-to-service and refurbishment of four Bruce Power nuclear reactors from 2003-12, which provided 70 per cent of the energy Ontario needed to get off coal. The other 30 per cent was achieved through conservation efforts, the addition of renewables to the electricity supply mix and less demand in the business sector. Coal closure alone put Ontario on track to eliminate 30 Mt of GHG emissions in 2020, compared to the business-as-usual scenario. As outlined in the Climate Change Action Plan, the electricity sector is again a major focus for Megaton reductions to help the province reach its long-term goals.

In the short term, the electricity sector will see a slight increase in emissions while the upcoming refurbishment of nuclear reactors occurs at Bruce Power and Darlington (OPG), because natural gas generation will be relied upon to make up demand when necessary. Without the security of Bruce Power's nuclear output over the next three decades, achieving the ambitious 2050 goal of a 141.6 Mt CO_2 equivalent reduction in emissions (80 per cent from 1990 levels) from the electricity sector may not become a reality.

In addition, as part of its Climate Change Action Plan, Ontario was the first province in Canada to set a mid-term greenhouse gas pollution reduction target for 2030. In order to help achieve its long-term targets, the province has committed to a mid-term target to reduce emissions by 37 per cent below 1990 levels by 2030. The province uses 1990 as a baseline year for its targets, which is common in the international community and aligns with the United Nations Framework Convention on Climate Change.



*The Bruce site provided **70 per cent** of the energy Ontario needed to shut down coal for good.*

Without the Bruce Power site, the province would need to replace 6,300 MW of clean, reliable, flexible and base-load supply, which could only be done by reintroducing coal or increasing the use of natural gas, which would both result in a sharp increase in GHG emissions. To put that into perspective, the Bruce Power site annually avoids 31 million tonnes of CO_2, which is equivalent to taking about six million cars off the road, and almost equivalent to the air pollution released by coal plants in 2001.

HEALTH BENEFITS

A study conducted by the Canadian Medical Association indicated that, in 2008, the economic costs of air pollution topped $8 billion, an annual cost expected to accumulate to over $250 billion by 2031. These associated costs include premature deaths, hospital admissions, emergency department visits, minor illnesses and doctors' office visits. Therefore, if air pollution is causing an economic burden, there are opportunities for savings if the right decisions are made. Between now and 2040, the total accumulated savings to our health care system through the end of coal-fired generation is estimated at $70 billion. To put this into perspective, $70 billion is nearly enough money to run Ontario's entire health care system for 1.5 years

SYSTEM RELIABILITY

As Ontario moves forward, it will be important to ensure a balanced supply mix, with emissions-free options, is pursued. Bruce Power provides more than 30 per cent of Ontario's electricity every day from its site, which is fully serviced by new transmission infrastructure. When looking at the electricity infrastructure for the province, supply sources and demand, Bruce Power is the electricity powerhouse for virtually all of southwestern Ontario, spanning into central and northcentral Ontario. Additionally, through the new Bruce-Milton line, the site is a key supply to the western portion of the Greater Toronto Area. Bruce Power is an essential resource for the most populated area of the province, using existing infrastructure to deliver a third of Ontario's electricity safely and reliably, 24 hours a day, 365 days a year. Bruce Power not only provides the province with baseload power, it is also capable of giving the market 2,400 MW of flexible capability from our eight nuclear units to back up renewable sources, which fluctuate with the weather.

AFFORDABLE, STABLE PRICES

Another goal for the Ontario government is keeping power prices low and stable. Bruce Power nuclear is affordable power that offers long-term price stability, providing the province with electricity at a rate 30 per cent below the average price in Ontario. The Bruce Power iPad app's Cost and Clean Air Calculator measures what the impact would be on consumers' electricity bills if nuclear energy were to be replaced by other sources. Following the refurbishment of the six remaining units at Bruce Power, nuclear will offer stable prices for decades. Once the Bruce Power facilities have been refurbished, they are not subject to large changes in price due to surrounding market changes or increases in fossil fuel costs.

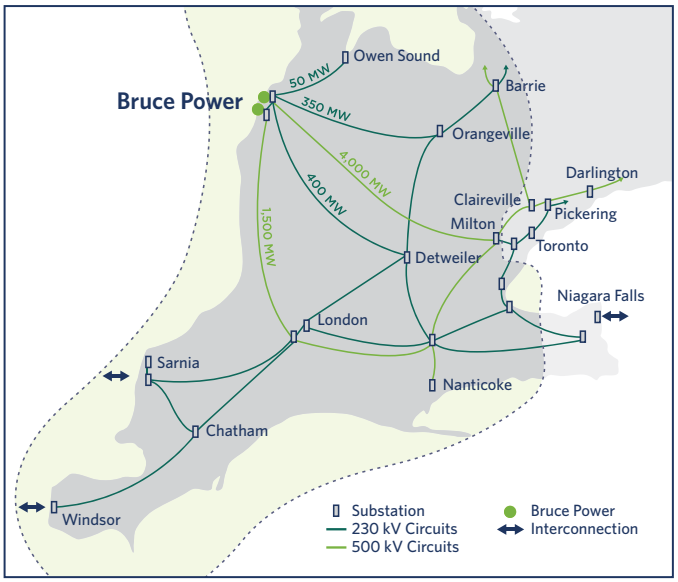
INNOVATION AT WORK

Innovation is key to Bruce Power's success. The revitalization of the Bruce site is a story of hard work, innovation, investment and tremendous skill and expertise. The level of innovation over the last 15 years will be a major factor for the provincial government during the next refurbishment. Through the restarting of Units 3 and 4 in 2003/04, and Units 1 and 2 in 2012, the organization has developed many first-of-a-kind tools and processes to support refurbishment and outage campaigns. The workforce has demonstrated countless technical innovations to return the Bruce site to its full potential and Bruce Power will deliver a renewal program knowing it has the technology and know-how to do the work. As the company prepares for refurbishment projects on six of its units, these groundbreaking technologies will play a key role in infusing over 30 years of life into each of these reactors – providing safe, reliable and carbon-free electricity for generations.

Collaboration among Bruce Power and its suppliers, vendors and contractors has resulted in the creation of many specialized tools unique to the nuclear industry. These high-tech tools have been developed in an effort to increase worker safety and productivity. One of the most important and innovative tools created was the Bruce Reactor Inspection and Maintenance System (BRIMS), a specialized tool system that is deployed during outages to inspect and maintain fuel channels in the reactor core. The tool will help save time, reduce dose to workers, and overall, be a faster, more predictable inspection tool. Another tool that is critical for monitoring and testing is Circumferential Wet Scrape Tool (CWEST), which obtains fuel channel samples to determine hydrogen levels in the metal. The tool is faster, reduces dosage to workers and increases nuclear safety margins. Finally, Modal Detection and Repositioning (MODAR) is used to move tight garter springs in Unit 8. Overall, there is a proven track record of using high level technology and innovation for virtually every component of the reactors and all of the lessons learned will be beneficial as the company moves forward.

Unrelated to refurbishment, yet extremely innovative work that takes during planned maintenance outages, is the Cobalt-60 harvest. Working together, Bruce Power and Nordion provide a reliable, long-term, end-to-end Cobalt-60 supply, which fuels gamma processing operations such as irradiation facilities that sterilize 40 per cent of the world's

FIGURE 9 KEY ELECTRICITY LINES FROM THE BRUCE POWER SITE WITH TYPICAL MW FLOW



single-use medical devices. In 2014, Bruce Power and Nordion signed an agreement for up to an additional 14 years to provide a long-term supply of Cobalt-60.

In 2016, Bruce Power and Nordion announced two new partnerships, which will again improve the health of people worldwide. The first agreement will help to combat the Zika Virus, when Cobalt-60 from Bruce Power may be used for a mosquito mitigation program. The treatment renders the virus-carrying mosquito sterile and unable to procreate, helping to quickly stop the spread of the virus.

The second agreement is for Bruce Power to begin producing medical-grade, 'High Specific Activity' (HSA) Cobalt produced in the four Bruce B reactors. HSA 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 tumour or other target. Although each beam has little effect on the brain tissue surrounding the tumour, a strong dose of radiation is delivered to the site, minimizing damage to healthy tissue and lowering side effects compared to traditional therapy in some cases.

Learn more at www.cleannuclearpowersafehospitals.com.

5. People

In addition to returning the Bruce assets to their full operating potential over the last 15 years, another key focus has been on renewing the workforce for the long-term. The company has largely established a new workforce recognizing the long-term view that has been established for the company through investments in both generation assets and the Bruce-Milton transmission line.

In 2001, the Bruce Power site faced a serious demographic challenge following many of the decisions taken in the late 1990s related to the shutdown of Bruce A. In 2001, only 10 per cent of staff was under the age of 35, with 44 per cent of staff between the ages of 46-55. Through recruitment, training and apprenticeships Bruce Power has established a workforce on the site for the long-term. As of 2016, 35 per cent of employees were under the age of 35, while the number of staff between 46 and 55 dropped to 32 per cent.

This move to a more balanced workforce has the company well positioned for long-term success. Over 90 per cent of Bruce Power's workforce is unionized and, through this transformation, the company and labour worked hand in hand.

FIGURE 10 STAFFING AT BRUCE POWER

2001

Under Age 36 316 employees (10%)

36-45 1,265 employees (40%)

46-55 1,376 employees (43%)

56+ 173 employees (5%)

TOTAL = 3,130 EMPLOYEES

2016

Under Age 36 1,338 employees (35%)

36-45 1,029 employees (25%)

46-55 1,250 employees (32%)

56+ 474 employees (12%)

TOTAL = 4,091 EMPLOYEES

In 2016, Bruce Power was recognized as one of Canada's top employers for young people for the fifth year in a row.

Over the course of Bruce Power's history, and as the workforce dynamic has changed, the company has won numerous awards including Canada's Top Employer for Young People for the last 5 years, a competition organized by the editors of Canada's Top 100 Employers. This award in particular is a great accomplishment given the state of the workforce when Bruce took over. In 2013, Bruce Power also won the Achievers 50 Most Engaged Workplaces award and was named one of Canada's 10 Most Admired Corporate Cultures by Waterstone Human Capital.

As it continues its quest to remain among the best employers in Canada, Bruce Power offers top-notch wellness initiatives to ensure it retains employees and puts their health as a top priority. These initiatives include on-site medical clinics and fitness facilities, health screening for new hires, smoking cessation clinics and more.

6. Economic impact

One of the untold stories in Ontario is the contribution the nuclear industry makes to the province's economy. By securing the future of the Bruce Power site, the long-term, annual economic impact of operating the facility will result in 22,000 direct and indirect jobs annually, and $4 billion in annual economic benefit through the direct and indirect spending in operational equipment, supplies, materials and labour income in Ontario.

Over the next 20 years, as Bruce Power refurbishes its fleet as outlined in Ontario's LTEP, the following additional annual economic impacts will benefit the province:

- Over 5,000 direct and indirect jobs annually.
- $980 million to $1.2 billion in labour income into the Ontario economy annually.
- $751 million to $1.07 billion in annual economic benefit through equipment, supplies and materials both directly and indirectly.

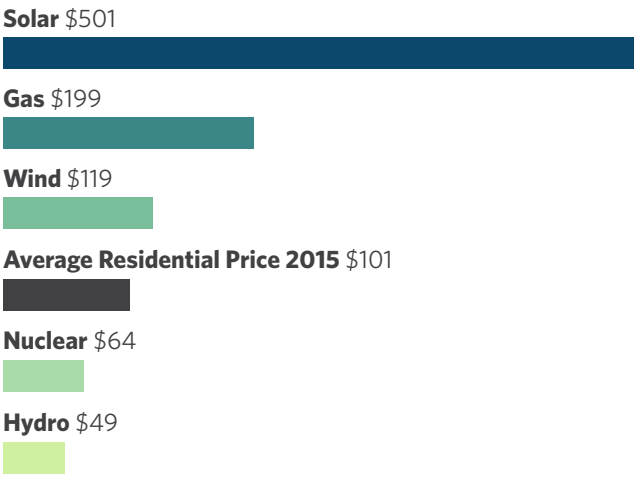
There is no other single, well-established, privately funded project, facility or infrastructure program in Ontario that will have such a significant economic impact. The jobs, investment and economic impacts will make a significant overall contribution to Ontario's economy, and are critical to providing a stable foundation for economic growth in southwestern Ontario. After having its economy disproportionately challenged – especially in the area of manufacturing – during the recent global economic downturn, refurbishing Bruce Power's six remaining units will allow southwestern Ontario to emerge stronger than it has been in decades. Most of the supply chain manufacturing, engineering and specialty companies that will support the refurbishment and operation of Bruce Power are located in Ontario and many of them in the southwestern part of the province and the GTA.

"The Bruce Power site provides a reliable source of electricity that is fully serviced by new transmission infrastructure that meets the needs of southwestern Ontario and the growing northern and western Greater Toronto regions."

Don MacKinnon
President, Power Workers' Union

All nuclear facilities have ongoing annual costs required to maintain their assets, which is outside of the operational, maintenance and administration costs (costs borne by Bruce Power and not the ratepayer). This cost is often referred to as 'sustaining capital,' which is money spent to ensure optimal efficiency, production and longevity of the assets. Industry standards indicate that sustaining capital for a single nuclear unit is about $25 million annually. The Bruce Power site has eight nuclear units, as well as support infrastructure, and the facility annually spends about $225 million on sustaining capital projects, leading to another influx of investment in Ontario's economy.

FIGURE 11 2015 ELECTRICITY PRICES PER MWh



"The Bruce Power site has a tremendous economic reach with over 90 per cent of its current and future spend taking place throughout Ontario – supporting jobs and economic growth across the entire province."

Ian Howcroft, Vice-President
Ontario Canadian Manufacturers & Exporters

"The Bruce Power project achieves a number of key goals for the province including keeping prices low for families and businesses, while investing private dollars into public assets and not impacting the province's balance sheet in the process. This is a model that has served Ontario well over the last decade and will be essential moving forward."

Mark Romoff, President and Chief Executive Officer,
Canadian Council for Public-Private Partnerships.

FIGURE 12 SHOWING THE OVERALL ANNUAL ECONOMIC BENEFITS OF OPERATIONS

	DIRECT BENEFIT	SECONDARY BENEFIT	TOTAL BENEFIT
Ontario Employment (1)	5,500	16,610	22,110
Fuel Cost (2)	$117 million	$128 million	$245 million
Ontario Purchased Equipment, Materials and Supplies (including staffing costs) (3)	$1,866 million	$2,052 million	$3,918 million
TOTAL	$1,982 million	$2,180 million	$4,163 million

Notes:
(1) Bruce Power Annual Review 2013, NEI 2014 Local and State/Provincial Multipliers
(2) Canadian Manufacturers & Exporters 2010 and 2012. It is assumed 50% of the full cost is spent in Ontario because of refining and manufacturing. Secondary benefits are assumed to be 110% of direct spending on fuel is spent and re-spent in Ontario.
(3) Secondary impacts occur when other Ontario industries and businesses supply goods and services to meet the needs of operating the Bruce Power nuclear fleet. It is assumed that 110% of direct spending on equipment, materials and supplies is spent and re-spent in Ontario.

7. Affordable, reliable power

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

The cost of electricity is often a misunderstood issue as there is great confusion on the role of the Hourly Ontario Energy Price (HOEP) and the Global Adjustment Mechanism (GAM). As Figure 13 below illustrates, the lower cost sources of electricity such as nuclear and hydro contribute to GAM on a lower percentage than the volume of electricity they produce as they are large volumes of clean electricity supply that keep electricity costs low for Ontario ratepayers.

As of Jan. 1, 2016, Bruce Power receives a single price for all output from the site of $65.73 per megawatt-hour (MW/h). Price of electricity in the province is $98.90 MW/h, through the end of 2015's fiscal.

The table in Figure 14 illustrates the important role electricity from the Bruce site plays in keeping prices affordable for families and businesses.

FIGURE 13 2015 PERCENTAGE OF GLOBAL ADJUSTMENT MECHANISM COMPARED TO PERCENTAGE OF GENERATION

SOURCE	PERCENT OF SUPPLY	PERCENT OF GAM	
Nuclear	59%	40%	Supply % > GAM %
*Hydro	23%	10%	Supply % > GAM %
Gas	10%	28%	Supply % < GAM %
Wind	6%	10%	Supply % < GAM %
Solar	1%	11%	Supply % < GAM %

*Price of existing heritage hydro assets with existing transmission infrastructure

FIGURE 14 ONTARIO ELECTRICTY PRICES 2015

	$MW/H	SOURCE OF INFORMATION
On-Peak	180	Ontario Enery Board time-of-use pricing (effective Nov. 1, 2015)
Mid-Peak	132	Ontario Enery Board time-of-use pricing (effective Nov. 1, 2015)
Off-Peak	87	Ontario Enery Board time-of-use pricing (effective Nov. 1, 2015)
Average Residential Price of Electricity (2015)	101	IESO
Average Price of Electricity Overall (2015)	83	IESO (from Jan. 1 - Sept. 30, 2015)
Bruce Power Nuclear	66	Bruce Power agreement price as of Jan. 1, 2016

Note: As of Jan. 1, 2016

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. Under Bruce Power's site lease with Ontario Power Generation (OPG), and through this agreement, the company will continue to fund decommissioning and waste 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.

*We produce 30% of Ontario's electricity at **30% below** the average residential price of power.*

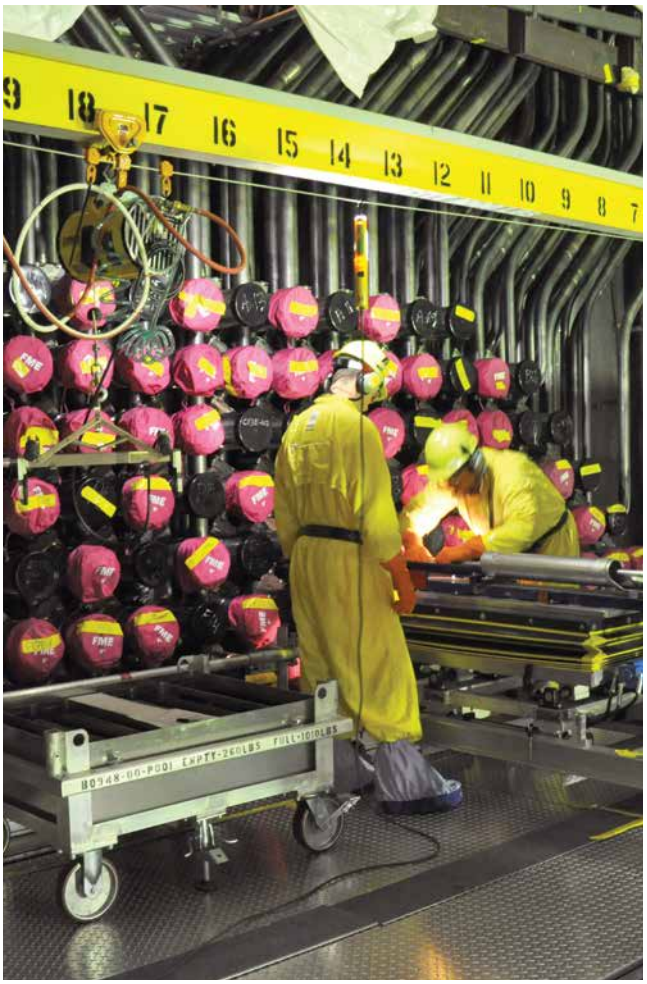
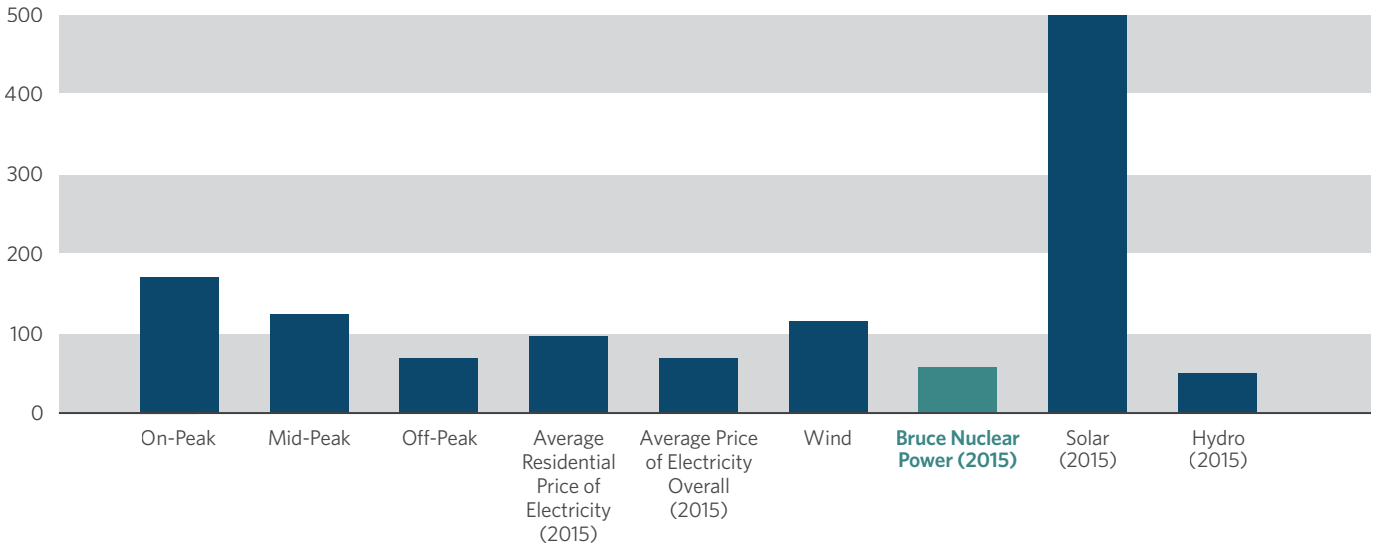


FIGURE 15 ONTARIO ELECTRICITY PRICES PAID BY HOUSEHOLDS ($MW/H)



8. Building public confidence

One of Bruce Power's core values focuses on social responsibility and being a good corporate partner to neighbouring communities. The company is also dedicated to communicating with the community, whether it be local or across Ontario, in an open and transparent manner. The support of our neighbouring communities is one of the keys to Bruce Power's success and the company has earned an immense amount of support, though it never takes it for granted. Bruce Power makes information available to anyone who wants to know more about the business, and is committed to providing fact-based and verifiable information at all times.

This commitment has particularly helped build positive support around refurbishment.

When it comes to communication, the majority of residents are aware of communication from Bruce Power and do not express any concerns about operations at the Bruce facility.

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 August 2016, support for refurbishment of nuclear plants in Ontario reached 78 per cent. The poll concludes that 78 per cent of decided Ontarians support refurbishment with over 40 per cent strongly in support, compared to only nine per cent who strongly oppose – a nearly four-to-one ratio. In terms of geographic support, 79 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.

In a poll of residents in Grey, Bruce and Huron counties 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 (92%) residents are most likely to agree they have confidence the Bruce Power facility operates safely and that Bruce Power is a good community citizen.
- 81% of Ontarians support refurbishment.
- Residents are most likely to support refurbishment of the Bruce facility because it will create jobs (15%) unchanged from spring 2014. Other common reasons include that it is necessary (8%), because they like nuclear power (7%) and because it's good for the economy (6%).
- 8 in 10 (79%) of residents continue to support the refurbishment of the Bruce nuclear facility, statistically unchanged from spring.
- Nearly 2/3rds (62%) of residents believe nuclear power plants in Ontario have taken appropriate safety actions to enhance safety and prevent similar events to Fukushima.
- Over half (55%) of the area's residents have read, seen or heard something about Bruce Power recently. Residents are most likely to mention newsletters/flyers are the best way to inform them about the Bruce facility or Bruce Power's involvement in the local community (22%), followed closely by the newspaper (20%).

The refurbishment of the Bruce Power site in the province remains not only a strong proposition from an LTEP point of view, but is also strongly supported and recognized by people in the province. This continues to be an area of focus for the company as it's important the public understand and are provided facts of both the low-cost nature of Bruce Power nuclear and its contribution to coal phase-out.

9. Independent Safety Regulator

In Canada, energy policy is the juristiction of the provincial government while safety is regulated by the federal government, specifically the Canadian Nuclear Safety Commission (CNSC). The CNSC is responsible, under the Nuclear Safety and Control Act (NSCA), for regulating all nuclear facilities and nuclear-related activities in Canada. The CNSC grants the stations' operating licences, which set the legal requirements under which the stations must operate.

The CNSC has a presence at each nuclear station in Canada. CNSC staff members have continuous access to inspect each station and review its activities. CNSC staff report the company's activities to the CNSC Tribunal, an appointed body of individuals who provide further oversight on nuclear activities. In addition to Bruce Power's own rigorous internal safety reporting and review process, the company is also required to formally notify the CNSC of activities that meet defined criteria. Event Reports are provided to CNSC staff when an activity meets the thresholds set out by the Commission. These reports represent a very small fraction of the activities undertaken in a nuclear station every year, but each is given scrutiny for causal factors, corrective actions and resolutions. Typically a handful of these Event Reports have enough significance to warrant further review by the CNSC Tribunal at one of its regularly held public meetings. There the root cause, remedial actions and resolution of the event are discussed in a public forum with this further level of oversight and accountability.

On an annual basis the CNSC rates Bruce Power on its performance. It is a fully transparent system with the results published publicly shortly after. Canada's regulatory regime is regarded internationally and has demonstrated

50 years of safe reactor operations. Bruce Power achieved its strongest report card in 2015 with areas of excellence identified in operating performance, conventional health and safety, security and waste management. The figure below provides an overview of Bruce Power's 2015 CNSC ratings, which remain strong and are consistent with good industry performance. The CNSC has compared the Fully Satisfactory and Satisfactory marks to grades of A+ and A respectively.

This level of oversight and involvement at the federal level not only speaks to the rigorous safety regime Bruce Power abides by, but also make the people of Ontario feel confident in the company's operations.

FIGURE 14 2015 BRUCE POWER CNSC RATINGS

SAFETY & CONTROL AREA	BRUCE A	BRUCE B	INDUSTRY AVERAGE
Management system	SA	SA	SA
Human performance management	SA	SA	SA
Operating performance	FS	FS	FS
Safety analysis	SA	SA	SA
Physical design	SA	SA	SA
Fitness for service	SA	SA	SA
Radiation protection	SA	SA	SA
Conventional health and safety	FS	FS	FS
Environmental protection	SA	SA	SA
Emergency management and fire protection	SA	SA	SA
Waste management	FS	FS	FS
Security	FS	FS	SA
Safeguards	SA	SA	SA
Packaging and transport	SA	SA	SA
Integrated plant rating	FS	FS	SA

FS: Fully Satisfactory **SA:** Satisfactory **BE:** Below Expectations

10. Role of the IESO

The Independent Electricity System Operator (IESO) handles the coordination of all aspects of Ontario's power system. It ensures there is enough power to meet the province's energy needs in real time by balancing the supply of, and demand for, electricity in Ontario, and directing its flow across the province's transmission lines. The IESO also plans and prepares for Ontario's future electricity needs. It forecasts and assesses Ontario's current and short-term electricity requirements, as well as the adequacy and reliability of the integrated power system. For the longer term, it forecasts energy demand up to 20 years and identifies sustainable electricity solutions for Ontarians well into the future. The province relies heavily on forecasts from the IESO to produce and continually update the Long-Term Energy Plan (LTEP). Bruce Power must work closely with the IESO in order to help plan generation day-to-day, month-to-month and for the future. They must work with nuclear operators like Bruce Power to develop a coordinated schedule for outages or refurbishments for the long term.

To meet the province's energy needs, the IESO secures new supply to meet future demand for energy, whether through contracts or market-based approaches. It does this by procuring new generation, identifying transmission needs and developing conservation measures, while working toward a clean energy supply mix. The IESO oversees the wholesale electricity market, where the price of energy is determined. It establishes and manages thousands of contracts, with Bruce Power being one of the largest, and through contracts it controls the price of electricity. All of these activities are carried out consistent to Ontario's LTEP. The low-cost power through contracts means significant financial benefit to Ontario ratepayers. Finally, it administers the rules that govern the market and, through an arm's-length market monitoring function, ensures it is operated fairly and efficiently.

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