



2022

Bruce Power Green Bond Report



This Green Bond Report covers the reporting period of the second quarter of 2022 through the first quarter of 2023. The report includes information on new issuances during the reporting period and information on the allocation and impact of all green bond proceeds through the first quarter 2023.

On March 21, 2023, Bruce Power L.P. issued the following private placement green bonds in accordance with Bruce Power's Green Financing Framework:

- \$300 million of 4.70% Senior Unsecured Notes due December 21, 2027 (ISIN no CA116705AL82)
- \$300 million of 4.99% Senior Unsecured Notes due December 21, 2032 (ISIN no CA116705AM65)

The net proceeds of the green bond offering were allocated in full to the Unit 6 Major Component Replacement project and Project 2030, which are Eligible Investments described in Bruce Power's Green Financing Framework. These projects focus on extending the life and increasing efficiency of the nuclear generation facility, to enable Bruce Power to provide clean, reliable power for decades to come, while displacing millions of tonnes of emissions from carbon-emitting electricity generators.

The background of the page is a light, monochromatic photograph of green leaves, possibly from a tree or shrub, creating a natural and organic feel.

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Company Overview

Bruce Power is Canada's only private-sector nuclear generator, annually producing approximately one third of Ontario's power. Established in 2001, Bruce Power is a Canadian-owned partnership indirectly owned by TC Energy, Ontario Municipal Employees Retirement System (OMERS), the Power Workers' Union, The Society of United Professionals and the Bruce Power Employee Investment Trust.

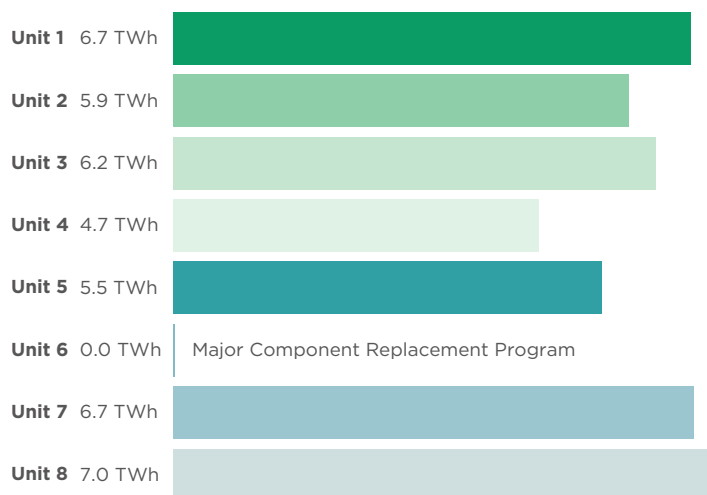
The Bruce Power site is located on the eastern shore of Lake Huron near Tiverton, Ontario, within the traditional lands and treaty territory of the people of the Saugeen Ojibway Nation (SON), which includes the Chippewas of Nawash and Saugeen First Nation, and the traditional harvesting territory of the Métis Nation of Ontario (Region 7) and the Historic Saugeen Métis.

Ontario's energy and environmental plans are counting on Bruce Power to provide a reliable and carbon-free source of affordable energy through 2064. To do so, Bruce Power's Life-Extension Program is currently underway, consisting of the Major Component Replacement (MCR) Program and the Asset Management Plan. The MCR Program focuses on the replacement of key reactor

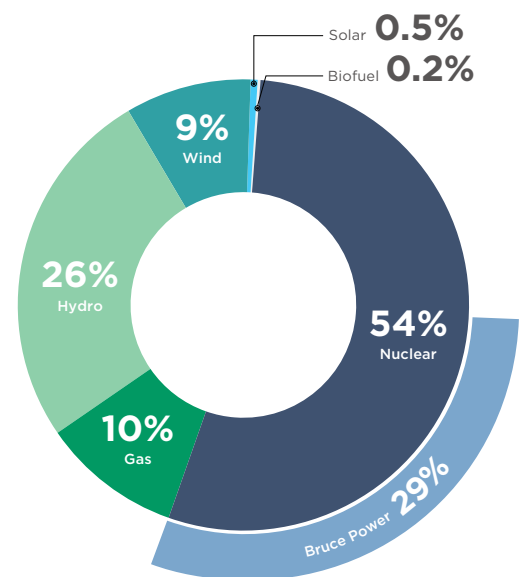
components in Units 3-8. The life extension of each unit will add 30 to 35 years of operational life, through the year 2064. The Asset Management Plan involves inspections and the gradual replacement of equipment which is performed during regularly scheduled maintenance outages.

Bruce Power has been a global leader in the production of medical isotopes for more than 35 years, beginning with the production of cobalt-60 which is used to sterilize medical equipment and treat cancer around the world. In 2022, Bruce Power took another leap forward in its isotope program, becoming the first commercial nuclear generator to produce lutetium-177, a short-lived medical isotope used to fight cancer.

BRUCE POWER OUTPUT 2022



ONTARIO ELECTRICITY OUTPUT BY FUEL TYPE 2022





Our Approach to Sustainability

Bruce Power's approach to sustainability is integrated across the organization and has a significant positive impact. We support provincial and federal carbon-reduction goals, while contributing to economic growth, innovation, and environmental protection.

Our Sustainability Program focuses on four key areas – Environment, People and Safety, Products and Services, and Community. We have a responsibility to both the environment and society to implement sustainable business practices and to foster a culture of equality. We recognize these practices can be achieved while ensuring the continued delivery of energy to the province at an affordable rate.

The Sustainability Program is led by the Environment, Sustainability and Net Zero Division, which reports quarterly to the Environment and Sustainability Oversight Committee. The Bruce Power Board approves the strategy and governance related to Environment, Social and Governance (ESG) matters, and performance is reported quarterly to the Board. This governance and

oversight ensure the integration of ESG monitoring and goals into the long-term business strategy, and that due consideration is given to social and environmental trends that could impact the company's short-, medium- and long-term operations.

Bruce Power is committed to continuous improvement, clear quantitative and qualitative disclosure of our ESG performance, and actions that drive real, tangible benefits in the near and long-term.

To access Bruce Power's Sustainability Reports, please visit our website. A copy of our 2023 Sustainability Report can be found [here](#).



Net Zero 2027

In 2021, Bruce Power made a commitment to Net Zero Greenhouse Gas Emissions (GHG) from our site operations by 2027. We were the first nuclear operator in North America with such an ambitious commitment. While the company reliably produces large volumes of emissions-free electricity, this next step ensures it minimizes and offsets emissions from routine undertakings such as vehicles, machinery, buildings, and equipment.

Bruce Power's Net Zero 2027 target accounts for all direct and indirect GHG emissions that occur from sources that are owned, controlled, or purchased by the company (Scope 1 and Scope 2 emissions).

Supporting our commitment to Net Zero GHG emissions by 2027, Bruce Power released our Net Zero 2027 Strategy in 2022, outlining how emissions reduction targets will be achieved. This strategy includes implementing energy and emission-reduction projects

and initiatives in our operations, finding alternatives to high-emission energy sources and, where further reductions are not feasible, pursuing emission offsets.

Bruce Power has met all its emissions reduction targets in 2022 and continues to work on the implementation of on-site operational initiatives and partnering with local carbon sequestration and offset projects to support further reductions to its net Scope 1 and Scope 2 emissions.

Emission-reduction projects currently underway to increase efficiencies in our on-site operations, buildings, and fleet include:

- Site building-use optimization and decommissioning of buildings no longer required to reduce space heating demands
- Building heating upgrades onsite and offsite, switching to more efficient heating sources
- Emergency generator testing frequency and duration optimization
- Evaluation of additional metering opportunities in buildings to measure usage and identify reduction opportunities
- Adding buildings to Building Automation Systems (BAS) to allow temperature to be monitored and adjusted remotely based on occupancy timing and requirements
- Fleet electric vehicle (EV) upgrades and fleet use optimization strategies, such as fleet size reduction and vehicle sharing, as well as implementation of anti-idling strategies
- EV infrastructure expansion for fleet and employee use
- Interior and exterior LED lighting upgrades
- Regular inspection and maintenance of refrigeration equipment to reduce leaks of Halocarbons



Where further emissions reductions are not achievable in a given year to meet set targets, we continue to leverage locally generated carbon offset credits from well-recognized voluntary programs and from provincial offset projects, and more local projects in the region, funded by the Carbon Offset Accelerator Fund.

For more information about the Carbon Offset Coalition and Carbon Offset Accelerator Fund, visit <https://www.carbonoffsetcoalition.com/about-the-coop>



Bruce Power further solidified its commitment to leading Canada on the path to a zero-emissions future by launching Bruce Power Net Zero (BPNZ), which repurposes and leverages the business of Huron Wind, a nine-megawatt (MW) wind farm located near Tiverton, Ontario to identify and invest in clean energy initiatives that complement the role of nuclear and assist Bruce Power and Ontario in achieving its Net Zero targets. BPNZ will focus on projects that are complementary to leverage Bruce Power nuclear, including storage, carbon offsets, renewables, hydrogen, and electrified transportation.

Green Financing Framework Overview

The Green Financing Framework¹ (the “Framework”) applies to Green Financings issued by Bruce Power and sets out the guidelines for Bruce Power’s Green Financing issuances in accordance with the Green Bond Principles² dated June 2021 issued by the International Capital Markets Association (ICMA) as well as the Green Loan Principles³ dated February 2021 issued by the Loan Market Association (LMA) and Loan Syndications and Trading Association (LSTA).

1. Use of proceeds	<ul style="list-style-type: none"> Bruce Power’s Life-Extension Capital Program (which includes the MCR Program and the Asset Management Plan as described in the Company Overview) Investments related to increasing the output of existing Bruce Power units
2. Process for Project Evaluation and Selection	<ul style="list-style-type: none"> Dedicated Environment and Sustainability Oversight Committee Proceeds evaluated and allocated based on criteria laid out in Green Bond Framework Ongoing review of Eligible Investments to ensure compliance with Eligibility Criteria
3. Management of Proceeds	<ul style="list-style-type: none"> Value of allocated funds to the financing or refinancing of existing or future Green Investments is equal to the net proceeds from the issuance of each Green Financing Full allocation of Green Financing to be made within 36 months from the date of issuance Pending allocation, proceeds may be temporarily invested in cash or short-term investment instruments that do not include GHG-intensive projects
4. Reporting	<ul style="list-style-type: none"> Allocation of funds and associated impacts published on an annual basis Finance reporting will include summary of outstanding Green Financings, allocations to Green Investments on a project-by-project basis, and project updates Impact reporting to include qualitative and/or quantitative environmental performance at a project level including estimated annual GHG emissions reduced or avoided, methodology disclosure for calculations, and annual nuclear energy generation.
5. External Review	<ul style="list-style-type: none"> Opinion by CICERO Shades of Green (“CICERO”), a Second-Party Opinion provider, that confirms the framework is credible and impactful (available on Bruce Power’s website) Report from independent account firm attesting to management’s assertion of the allocation of bond proceeds to eligible projects

For further detail please see:

- Green Bond Framework: <http://www.brucepower.com/wp-content/uploads/2021/11/Bruce-Power-Green-Financing-Framework-Final.pdf>
- International Capital Markets Association, “The Green Bond Principles (GBP) 2021”, published June 2021. <https://www.icmagroup.org/sustainable-finance/the-principles-guidelines-and-handbooks/green-bond-principles-gbp/>
- Loan Syndications & Trading Association and Loan Market Association, “Green Loan Principles”, published in February 2021. Green Loan Principles - LSTA. <https://www.lsta.org/content/green-loan-principles/>

GREEN BOND ISSUANCES AND ALLOCATION

Below are the details of Bruce Power's green bond issuances and allocation to the portfolio of outstanding Eligible Green Investments. All amounts are in Canadian dollars unless otherwise stated.

Issuer	Series No.	Size (\$ million)	Coupon	Issuance Date	Maturity Date	Net Proceeds
Bruce Power LP	2021-1	\$500	2.68%	November 18, 2021	December 21, 2028	\$496.8
Bruce Power LP	2023-1	\$300	4.70%	March 21, 2023	December 21, 2027	\$298.3
Bruce Power LP	2023-2	\$300	4.99%	March 21, 2023	December 21, 2032	\$298.0
Total		\$1,100				\$1,093.1

GREEN BOND ALLOCATION (CANADIAN DOLLARS, MILLIONS)

Net Proceeds from 2021-1 Green Bonds	496.8
Add: Net proceeds from 2023-1 Green Bonds	298.3
Add: Net proceeds from 2023-2 Green Bonds	298.0
Total Green Bond net proceeds	1,093.1
Allocation of proceeds to eligible investments:	
Unit 6 Major Component Replacement Project	1,024.1
Project 2030	69.0
Total allocated proceeds	1,093.1
Remaining unallocated proceeds	\$0.0

GREEN BOND IMPACT SUMMARY

Net proceeds obtained from Bruce Power's Green Bond issuances were allocated to the Unit 6 Major Component Replacement Project and the Project 2030 power recovery stage 1 and 2.

These projects are Eligible Investments under Bruce Power's Framework and duly approved by the Environment and Sustainability Oversight Committee.

Green Bond funding allocations and estimated avoided tonnes of carbon dioxide equivalent (tCO₂e) emissions are as follows. The methodology for calculating estimated annual avoided emissions is provided at the end of this report.

Project	Allocation	Estimated Energy Production	Estimated Annual Avoided Emissions	Benefit Realization
Unit 6 Major Component Replacement	\$1,024.1 million	6.4 TWh estimated average annual output post MCR	2,582,730 tCO ₂ e	Expected return to service date is end of 2023
Project 2030 – Power Recovery Stage 1 and 2	\$69.0 million	0.7 TWh estimated annual incremental output from 2021 to 2064	278,481 tCO ₂ e	Target expected peak of incremental gains is in early 2030's



Bruce Power's Major Component Replacement



The life-extension of each added unit will add 30 to 35 years of operational life, while other investments will add a combined 30 reactor years of operational life to the units.

Bruce Power's Life-Extension Program, Ontario's largest private sector clean energy infrastructure project, consists of Major Component Replacement (MCR) Projects in Units 3-8 and lifetime Asset Management Program that will extend the life of the site until 2064 and beyond. The life extension of the reactor units at Bruce A and B will secure decades of reliable, carbon-free energy for the people of Ontario.

The MCR Project focuses on the removal and replacement of large nuclear components such as the fuel channels in the core of the reactor, feeder tubes, and the steam generators. During this multi-year campaign, upgrades are also made to electrical, cooling water, turbines, and safety systems, among others.

The Unit 6 MCR project began in 2020. Lead in activities commenced with the unit's shut down, the reactor defuel and the installation of bulkheads and shielding to separate the fuelling duct from the vault. The removal series began late in the year and continued on into 2021 with the removal of all major vault components including feeders, pressure tubes,

end fittings, and calandria tubes. The inspection series followed the removals and was completed in 2021, with the vault installation work commencing as Bruce Power rebuilds the reactor. This work included calandria tube installation, installation of 960 feeder tubes and 480 fuel channels. Completion of component installation and moderator refill was followed by fuel reload in early 2023. Lead out and commissioning activities continue the transition of the unit back to its operational state with the return to service of Unit 6 planned for late 2023.

On March 1, 2023, Unit 3 was removed from service to begin the preparatory work for MCR construction. Unit 3 is scheduled to return to service in late 2026. Unit 4 MCR breaker open is planned for early 2025 with Units 5, 7 and 8 to follow, until the completion of the Life-Extension Program, in 2033.

Bruce Power and Ontario Power Generation continue to collaborate and benchmark their MCR projects, setting a worldwide standard for nuclear refurbishment.

UNIT 6 MCR ACTIVITIES





Project 2030

In October 2021, Bruce Power announced Project 2030, which is the company's goal of achieving a site peak capacity of 7,000 megawatts (MW) by the early 2030s in support of Ontario's climate change targets and future clean energy needs.

Project 2030 focuses on continued asset optimization, innovations, and leveraging new technology, which could include integration with storage and other forms of energy, to increase the eight-unit peak capacity at Bruce Power. This additional generation will be achieved through a three-stage series of projects, and the increase to Bruce Power's generation will be approximately equivalent to adding about a ninth large-scale reactor to our site without the need to build new infrastructure.

The average annual incremental output resulting from Project 2030 stage 1 and stage 2 power recovery projects from 2021-2063 is 0.7 terawatt hours (TWh) per year. This results in the avoidance of approximately 280,000 metric tonnes of CO₂ equivalent emissions from the grid annually, or the equivalent of taking over 85,000 cars off of the road.

BrucePower
Project2030



Greenhouse Gas Avoidance Calculation Methodology

In line with best practice greenhouse gas (GHG) accounting guidance, the carbon impact of electricity supply projects is estimated by determining the difference in GHG emissions between the project and the sources of electricity that the project activity displaces (i.e., avoided emissions).

The quantification of GHG avoidance resulting from Bruce Power's Unit 6 Major Component Replacement (MCR) Project considers the forecasted average annual output of the unit at the completion of the project.

The quantification of GHG avoidance resulting from Project 2030 stage 1 and stage 2 considers the average annual incremental output resulting from related power recovery projects from 2021 (resulting in an average incremental gain of 0.7 terawatt hours (TWh) per year from 2021 through to 2064). Note that incremental gains were also achieved starting in 2018; however, for the purpose of calculations the boundary was set at 2021 through to 2064.

To ensure that we are not overstating the GHG emissions avoidance benefits related to the Unit 6 MCR project and Project 2030 stage 1 and 2, the output datasets related to each are split out and calculated separately using the same methodology.

Since the current IESO forecast assumes any increase in electricity demand is met by natural gas electricity generation, this annual output associated with zero direct emissions, is compared with the amount of GHG emissions that would result from the same power output being provided from natural gas electricity generation, instead of nuclear.

Using 2019 data taken from the Government of Canada's National Inventory Report (NIR) 1990-2019 (2021), the greenhouse gas intensity of electricity generated from natural gas in Ontario has been calculated as 406 g CO₂e/kWh. Every kWh of electricity generated from carbon-free sources, such as nuclear, avoids 406 g CO₂e compared to electricity generated in Ontario from natural gas. It is of note that the NIR data represents direct emissions from the generation plant only and does not include wider lifecycle emissions such as extraction, processing, and fuel transport, which results in inherently higher generation intensity values. Data is sourced from the Government of



Canada's NIR 1990-2019 (2021) to provide a consistent, conservative estimate on avoided emission projections, recognizing that natural gas electricity generation intensity fluctuates year over year.

The estimated average annual output of Unit 6 at the completion of MCR Projects (TWh) is then multiplied by the GHG intensity of natural gas electricity generation (g CO₂e/kWh) to determine the annual amount of greenhouse gas emissions avoided as the result of the investment in the Life Extension of Bruce Power Unit 6 via the MCR Projects (2,582,730 tCO₂e per year).

A similar calculation is done to determine the annual amount of greenhouse gas emissions avoided as the result of the investment in power recovery projects related to Project 2030 (278,481 tCO₂e per year). The average annual incremental output resulting from Project 2030 power recovery projects from 2021-2064 (TWh) is multiplied by the GHG intensity of natural gas electricity generation.

ELECTRICITY GENERATION AND GHG EMISSIONS FOR ONTARIO, 2019

	GHG Emissions (kt CO ₂ e)*	Electricity Generation (GWh)	Generation Intensity (g CO ₂ e per kWh electricity generated)
Natural Gas	3,820	9,400	406
Nuclear	0	90,500	0

Source: National Inventory Report, 2021

*data represents emissions from on-site combustion of fuel directly related to electricity generation

