



# GREEN BOND IMPACT REPORT 2021

**ONTARIOPOWER**  
GENERATION

Where a brighter  
tomorrow begins

Nanticoke Solar panels

# Ontario Power Generation 2021 Green Bond Impact Report

This Impact Report covers the reporting period of Q2 2020–Q1 2021. During this time period, Ontario Power Generation (OPG) issued a third and fourth green bond offering under its Medium Term Note Program on April 8, 2020. The issuance, totaling \$1.2 billion, consisted of \$400 million of senior notes maturing in April 2025 with a coupon interest rate of 2.89 percent and \$800 million of senior notes maturing in April 2030 with a coupon interest rate of 3.22 percent.

The net proceeds from the issuance were used to finance or re-finance Eligible Projects as defined under OPG's

Green Bond Framework, primarily the October 2019 acquisition of Cube Hydro Partners, LLC and affiliate Helix Partners, LLC (collectively, Cube Hydro) and the construction of the Nanticoke Solar facility. Cube Hydro is now operating under Eagle Creek Renewable Energy.

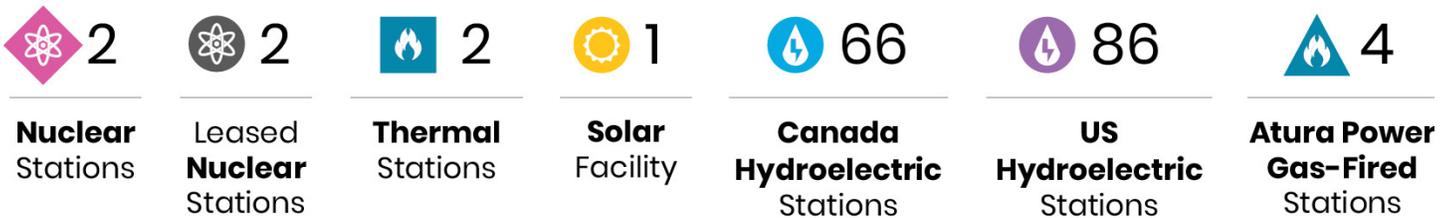
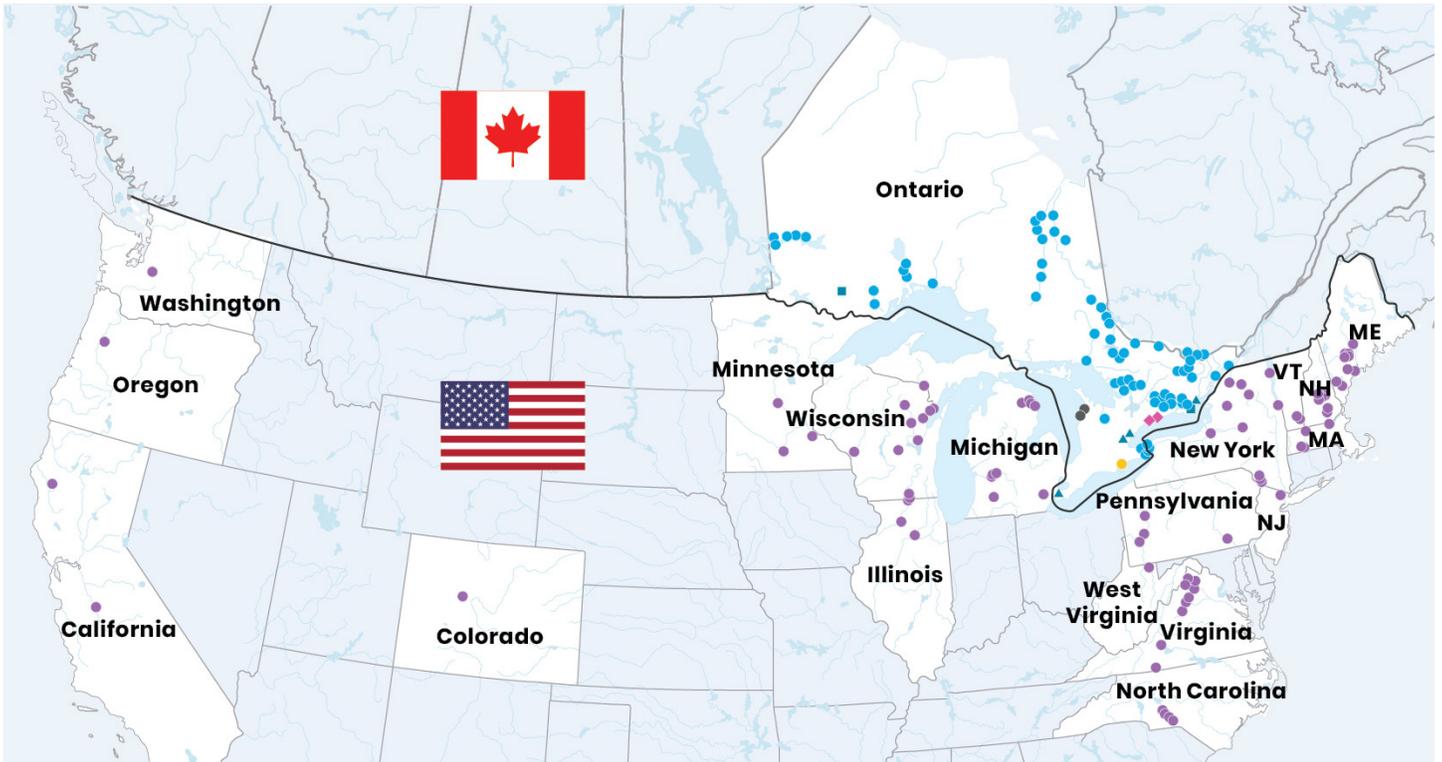
OPG's Green Bond Framework encompasses projects that offer tangible environmental benefits. This report outlines the environmental benefits of new issuances and projects approaching completion from previous issuances.

## Corporate Profile

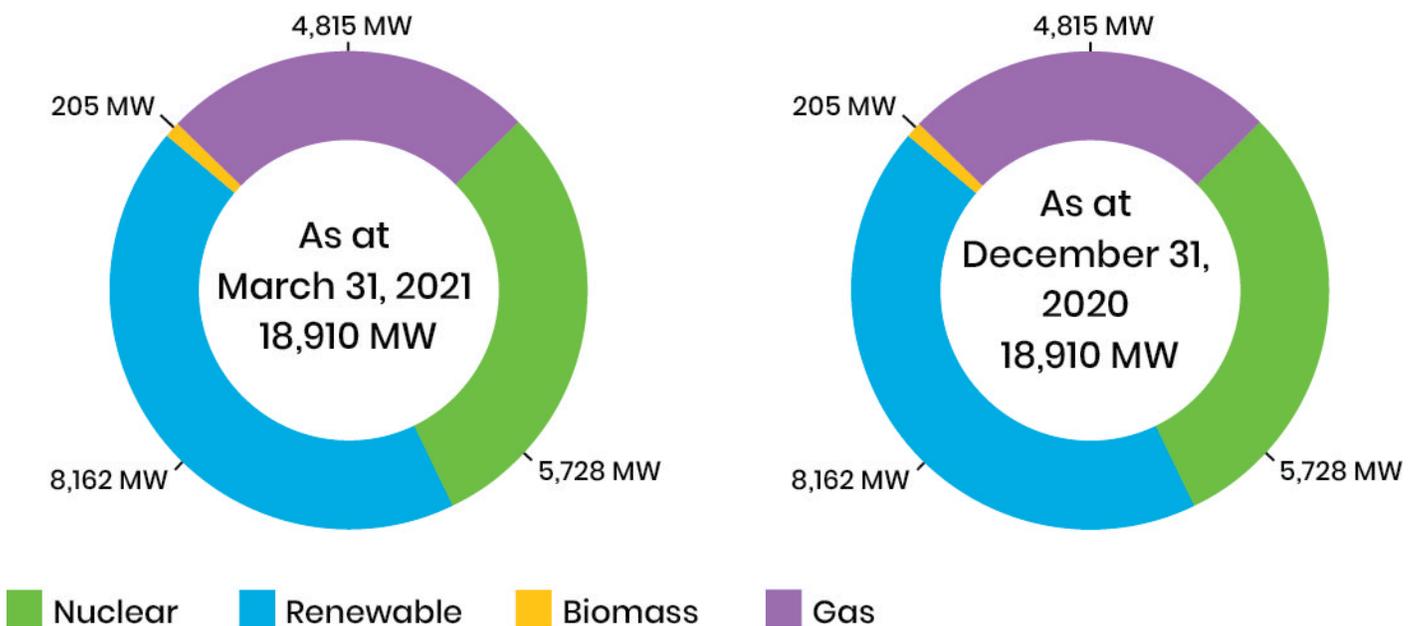
OPG is an Ontario-based electricity generation company whose principal business is the generation and sale of electricity. OPG was established under the *Business Corporations Act* (Ontario) and is wholly owned by the Province of Ontario (Province or Shareholder). OPG's electricity generation portfolio had an in-service generating capacity of 18,910 megawatts (MW) as at March 31, 2021.

As at March 31, 2021, OPG owned and operated two nuclear generating stations, 66 hydroelectric generating stations, two thermal generating stations, one solar facility and four combined-cycle natural gas-fired plants in Ontario, Canada. The combined-cycle

natural gas-fired plants are owned and operated through the Company's wholly-owned subsidiary operating as Atura Power. Through the Company's United States (US)-based wholly-owned subsidiary OPG Eagle Creek Holdings LLC (Eagle Creek), OPG also wholly or jointly owned and operated 86 hydroelectric generating stations and held minority interests in 14 hydroelectric and two solar facilities in the US as at March 31, 2021. In addition, OPG owns two nuclear generating stations in Ontario, the Bruce A Generating Station (GS) and the Bruce B GS, which are leased on a long-term basis to, and operated by, Bruce Power L.P. (Bruce Power).

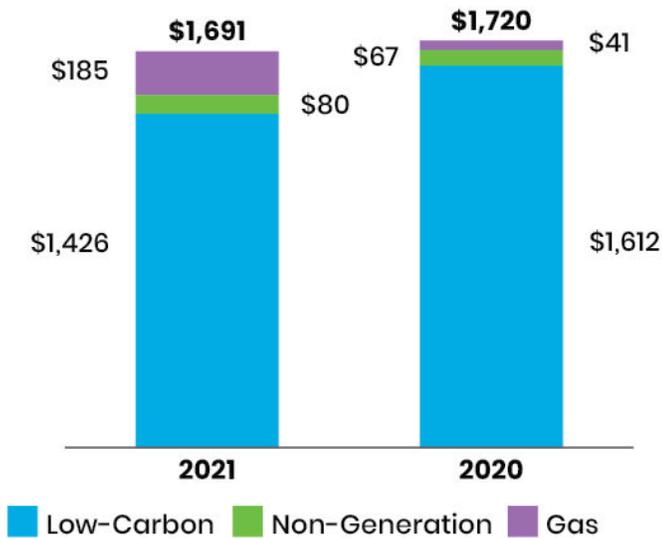


### In-service generating capacity by generation type (MW)<sup>1</sup>



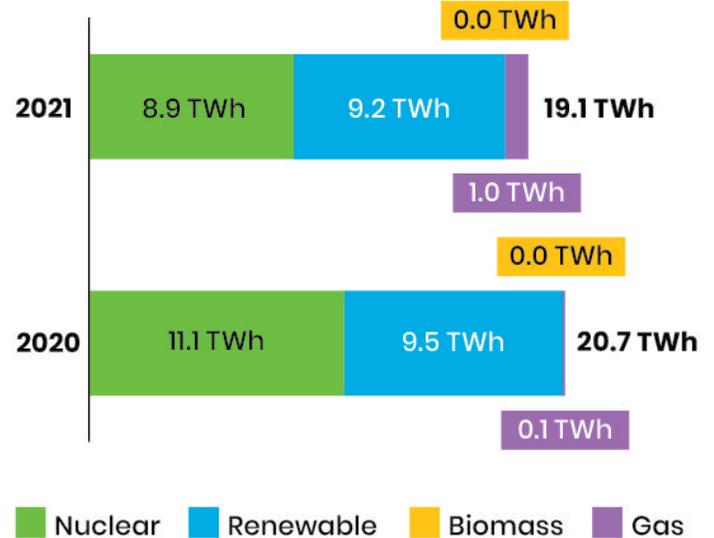
## Revenue by facility category (millions of dollars)<sup>1</sup>

Three months ended March 31, 2021



## Electricity generation by generation type (TWh)<sup>1</sup>

Three months ended March 31, 2021



<sup>1</sup>Includes OPG's proportionate share of in-service generating capacity and electricity generation from co-owned and minority-held facilities, as applicable. Gas category includes the dual-fuelled oil and natural gas Lennox GS and the Company's combined-cycle natural gas-fired plants operated through Atura Power.

## Our Approach to Sustainability

At OPG, we believe that operating sustainably is good business. Our company's mission is to provide low-cost power in a safe, clean, reliable and sustainable manner for the benefit of our customers and our Shareholder, the Province of Ontario.

We maintain transparency with our partners and stakeholders through our dynamic and interactive digital media where we provide the latest information, stories, videos and tweets about our sustainability initiatives. OPG's [Sustainability Reporting](#) can be found on the Company's website [www.opg.com](http://www.opg.com).

## Green Bond Framework

OPG strives to be a leading energy innovation company, advancing technologies and solutions to help the markets where it operates achieve net-zero carbon economies by 2050. We believe reliable, clean power is fundamental to a healthy environment and a strong, low-carbon economy.

OPG released its [Climate Change Plan](#) in November 2020 as part of the Company's commitment to being a North American clean energy leader.

OPG's Green Bond Framework was last updated in April 2021.

## Eligible Projects

Proceeds obtained from green bond issuance shall be used to finance and/or refinance “Eligible Projects”, projects that offer tangible environmental benefits. The look-back period for Eligible Projects is 36 months prior to the date of issuance.

Without limitation, Eligible Projects generally fall into the categories specified in the table below.

The green bond proceeds can also be used to finance the acquisition, including minority equity participation, of Eligible Projects.

### Renewable Energy Generation

Investments that help supply energy from renewable sources

#### **Solar Energy**

- Construction of new solar energy facilities
- Maintenance and/or refurbishment of existing solar energy facilities

#### **Wind Energy**

- Construction of new wind energy facilities
- Maintenance and/or refurbishment of existing wind energy facilities

#### **Hydroelectricity**

- Construction of new run-of-river hydroelectricity projects with low storage capacity
- Refurbishment, repowering, modernization, and/or maintenance of existing hydroelectricity facilities with the purpose of increasing generation efficiency, operational life span and/or renewable energy output while maintaining or improving the level of operational safety

### Energy Efficiency and Management

Investments that help reduce energy consumption or help manage and store energy

- Transportation Electrification <sup>1</sup>
- Climate change and eco-efficient products, production technologies and process <sup>2</sup>

## Climate Adaptation and Resilience

Investments that help reduce potential damages from extreme weather events

- Flood protection and stormwater management
- Extreme weather resistant infrastructure and other forms of flooding mitigation

<sup>1</sup> Includes projects such as development of electric vehicles related infrastructure

<sup>2</sup> Includes projects such as energy storage facilities

Exclusionary Criteria: OPG commits to not knowingly use the proceeds for financing of assets/projects for that involve the generation from fossil fuels.

## Process of Project Evaluation and Selection

OPG's Treasury group will be responsible for review and selection of the green projects that will qualify as Eligible Projects. The Treasury group will verify the suitability and eligibility of such investments in collaboration with internal experts and stakeholders, including OPG's Operations and Environment groups.

Projects are evaluated using financial and risk-based analyses as well as strategic considerations. OPG has

formal risk management policies, procedures and systems in place to identify, assess and mitigate risks to the Company. OPG's [Code of Business Conduct Policy](#) and [Environmental Policy](#) establish the Company's parameters for ethical behaviour and environmental management, respectively.

## Management of Proceeds

The green bond proceeds will be deposited to OPG or its subsidiaries' general account and an amount equal to the net proceeds will be earmarked for allocation to Eligible Projects. The proceeds could be held in cash and/or short-term money market instruments

prior to allocation. OPG and its subsidiaries intend to fully allocate the green bond proceeds to Eligible Projects within 36 months from the issuance date. The Treasury group will be responsible for tracking the allocation of the net proceeds to Eligible Projects.

## Transparency & Reporting

### Allocation Reporting

OPG will update investors annually in regards to the use of proceeds by OPG and its subsidiaries. The reports will include a list of major Eligible Projects to which green bond proceeds have been allocated, a brief description of the major Eligible Projects, amounts allocated and the remaining balance of funds that have not yet been allocated.

### Issuances

Net proceeds from the April 2020 issuances were used to finance or re-finance Eligible Projects as defined under OPG's Green Bond Framework, primarily the October 2019 acquisition of Cube Hydro Partners, LLC and affiliate Helix Partners, LLC (collectively, Cube Hydro) and the construction of the Nanticoke Solar facility.

Cube Hydro is a hydropower platform with 385 MW of in-service generating capacity across 19 hydroelectric facilities located throughout the northeastern and southeastern US at acquisition date. The acquisition provided additional scale to the Company's US hydroelectric business acquired as part of Eagle Creek Renewable Energy, LLC, and the operations of the two platforms have now been merged. The combined organization operates under the Eagle Creek Renewable Energy name.

### Impact Reporting

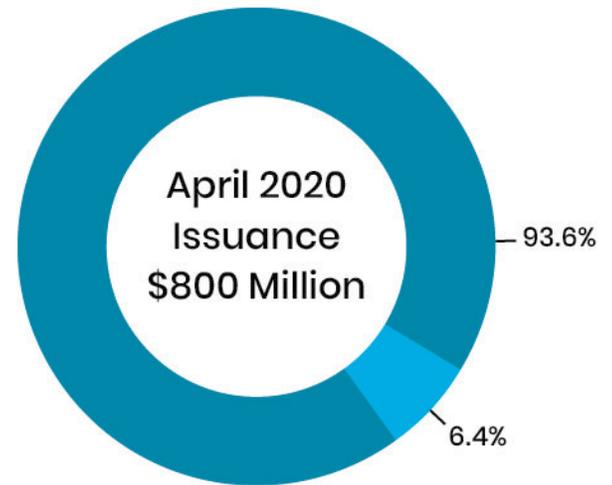
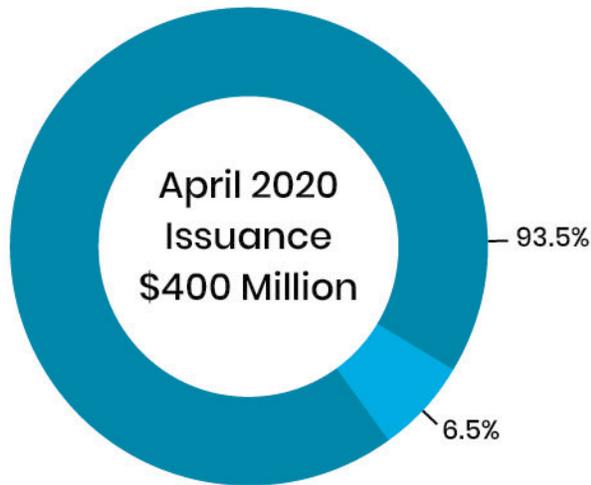
Where feasible, the report will include qualitative and quantitative environmental performance indicators (e.g. greenhouse gas emissions reduced/avoided, renewable energy generation, capacity of renewable energy plant constructed or rehabilitated).

The Nanticoke Solar facility, placed in service in March 2019, is located at the former coal-fired Nanticoke GS site and adjacent lands. The facility represents the first solar facility operated by OPG. The facility can generate 44 MW of clean, renewable power for the province — that's enough to power a small town.

Net proceeds from OPG's green bond issuances prior to 2020 were fully allocated to eligible hydroelectric projects under OPG's Green Bond Framework. Details regarding these projects are provided in the previous Green Bond Impact Reports available on the Company's [green bond website](#).

Green bond funding allocations and avoided carbon dioxide equivalent (CO<sub>2</sub>e) emissions for the major Eligible Projects are as follows.

## Value and use of net proceeds from 2020 green bond offerings



■ Cube Hydro
 ■ Nanticoke Solar

## Project funding and impact reporting of major Eligible Projects

Project	Allocation	Energy Production (MWh)*	Annual Avoided Emissions (tonnes CO <sub>2</sub> e)	Expected In-Service Dates
Eagle Creek Acquisition (includes original Eagle Creek Renewable Energy and Cube Hydro acquisitions)	\$1,612.5M	2,484,880	1,768,513	Operating
Nanticoke Solar	\$76.6M	78,745	31,498	Operating
Ranney Falls GS Unit 3 Improvement	\$60.2M	33,070	13,228	Q4 2021
Sir Adam Beck I Units 1 and 2 Replacement	\$35.2M	143,995	57,598	2022

\* Upon completion of projects approaching operation



## Projects Approaching Operation

### Ranney Falls Generating Station

The Ranney Falls GS expansion project, which will double the station's output, continues tracking on budget of \$77 million.

During final commissioning of the new 10 MW single-unit powerhouse on the existing Ranney Falls GS site in September 2020, the generator sustained damage and commissioning activities were halted. Work is underway by the vendor to repair and reassemble the unit at their own cost. The revised in-service date is expected to be in the fourth quarter of 2021.

### Sir Adam Beck Generating Station

At OPG's flagship Sir Adam Beck I GS, work has begun to replace two historic generating units to provide more climate change-fighting, clean power for Ontario.

During the first quarter of 2021, OPG completed the removal of 100-year-old embedded turbine scroll cases from the G1 unit and the installation of new scroll cases for the G2 unit, with the installation of new scroll cases for the G1 unit underway. The project also began receiving turbine parts during the first quarter of 2021. The project is expected to be placed in service in 2022 and is tracking on budget of \$128 million.

## Greenhouse Gas Mitigation Calculation Methodology

The quantification of greenhouse gas mitigation for the increased generation in Ontario Power Generation's hydroelectric fleet is calculated using a computer based model that determines how much generation will be displaced from combined cycle gas turbine plants. Using the incremental annual generation profile from the increased hydroelectric capacity, the model determines when the combined cycle gas turbine plants will be displaced. When the incremental hydroelectric generation is displacing gas, the Ontario grid emission factor of 0.4 tonnes carbon dioxide/MWh is used to calculate the net greenhouse gas mitigation.

The annual greenhouse gas mitigation from Eagle Creek is calculated using the tool from the United States Environmental Protection Agency called the Avoided Emissions and Generation Tool. This tool splits the contiguous 48 states into 10 regions across the United States and assigns emission factors to the appropriate generating stations.

The relevant AVERT regions and related NERC subregions are:

- Northeast region includes NERC subregions NEWE (Northeast Power Coordinating Council/New England), NYUP (Northeast Power Coordinating Council/Upstate New York)
- Great Lakes / Mid-Atlantic region includes NERC subregions RFCM (Reliability First Corporation/Michigan), RFCW (Reliability First Corporation/West), RFCE (Reliability First Corporation/East)
- Upper Midwest region includes NERC subregions MROE (Midwest Reliability Organization/East), MROW (Midwest Reliability Organization/West), SRMW (SERC Reliability Corporation/MISO-Central)
- California region includes NERC subregion CAMX (Western Electric Coordinating Council/California)
- Rocky Mountains region includes NERC subregion RMPA (Western Electric Coordinating Council/Rockies)