

Royal Bank of Canada

# RBC Green Bond Report



April 2022

## Introduction

Royal Bank of Canada (RY on TSX and NYSE) (RBC, we, us, or our) is a global financial institution with a purpose-driven, principles-led approach to delivering leading performance. Our success comes from the 88,000+ employees who bring our vision, values and strategy to life so we can help our clients thrive and communities prosper. As Canada's biggest bank, and one of the largest in the world based on market capitalization, we have a diversified business model with a focus on innovation and providing exceptional experiences to our 17 million clients in Canada, the U.S. and 27 other countries. We strive to have a positive economic, environmental and social impact, and to provide responsible leadership wherever we operate.

We believe sustainable finance represents a growth opportunity for our business and our clients. We will work with our clients to understand and support their transition plans and facilitate \$500 billion in sustainable financing by 2025. This is a key commitment in our enterprise climate strategy, [the RBC Climate Blueprint](#), aimed at supporting our clients in the transition to net-zero and accelerating clean economic growth.

Our commitment to sustainable finance builds on our longstanding support for the growth of the green bond market. RBC Capital Markets is active in the global sustainable bond market, leading transactions across multiple currencies and in the U.S. municipal finance market. Since 2014, RBC Capital Markets has hosted an annual Sustainable Debt Conference (formerly Green Bond Conference) and published several global green bond market reports. Further, we are a member of the International Capital Market Association (ICMA) Green Bond Principles, a partner of the Climate Bonds Initiative, and an active participant in a number of global sustainable debt working groups.

In April 2019, we launched our inaugural EUR500 million, 5-year Green Bond offering. In July 2021, we issued our second Green Bond, a 5-year USD750 million offering. We also maintain a Green Structured Notes program, through which 13 notes were outstanding as of October 31st, 2021.

This Green Bond Report provides investors with details regarding our Green Bond Asset Portfolio, the allocation of proceeds to that Portfolio and the associated environmental impacts. This is our third report and intended to be renewed annually to outline any changes to our Portfolio. We recommend this report be read in conjunction with the [RBC Sustainable Bond Framework](#).

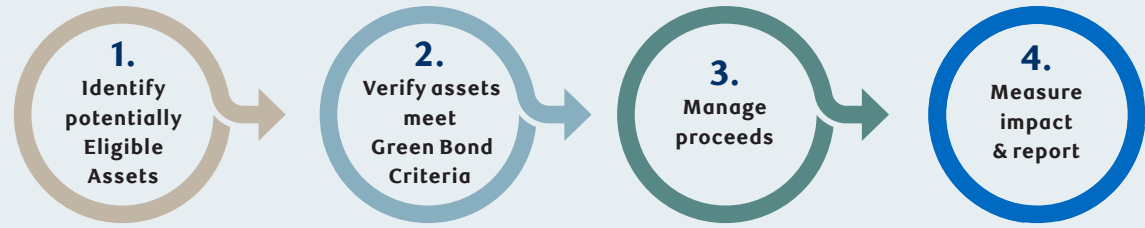


# Sustainable Bond Framework

The **RBC® Sustainable Bond Framework** (the “Framework”) was developed in line with the International Capital Market Association Green Bond Principles 2018, Social Bond Principles 2020 and Sustainability Bond Guidelines 2018, and provides transparency in our Green Bond issuance and reporting processes. It was published in June 2020 and replaces the RBC **Green Bond Framework**, which was published in March 2019. An overview of the Eligible Categories for the use of Green Bond proceeds and the key processes described in the Framework are summarized below.

Use of proceeds	
Eligible Green Categories	Alignment with Sustainable Development Goals
 <b>Renewable energy</b>	 7 AFFORDABLE AND CLEAN ENERGY
 <b>Energy efficiency</b>	 7 AFFORDABLE AND CLEAN ENERGY
 <b>Pollution prevention and control</b>	 12 RESPONSIBLE CONSUMPTION AND PRODUCTION
 <b>Sustainable land use</b>	 15 LIFE ON LAND
 <b>Clean transportation</b>	 9 INDUSTRY INNOVATION AND INFRASTRUCTURE
 <b>Sustainable water and wastewater management</b>	 6 CLEAN WATER AND SANITATION
 <b>Green buildings</b>	 11 SUSTAINABLE CITIES AND COMMUNITIES
 <b>Climate adaptation and resilience</b>	 13 CLIMATE ACTION

## Proceeds management and reporting




Representatives from Capital Markets, Personal & Commercial Banking and the Corporate Citizenship Sustainability Group (‘Sustainability Group’) are responsible for evaluating potential Eligible Assets against the applicable Eligible Categories outlined in the Framework.

The Sustainability Group completes the final evaluation of all Eligible Assets. Publicly available information, client information and sustainability expertise are used to screen assets against the criteria for the Eligible Categories. The net environmental and/or social benefits of each potential Eligible Asset are considered in the evaluation.

The Sustainable Bond Working Group<sup>1</sup> monitors the aggregate amount of assets in the Green Bond Asset Portfolio on at least a quarterly basis to ensure that all Eligible Assets continue to meet the Eligible Categories and that the total Eligible Assets in the portfolio is equal to or greater than the aggregate amount of proceeds raised by the Green Bonds. Proceeds are managed in a portfolio approach. The Green Bond Asset Portfolio is dynamic with Eligible Assets maturing and new Eligible Assets being added.

RBC renews Green Bond reporting annually. Reporting is made publicly available on [rbc.com](http://rbc.com). Where feasible, RBC will provide further information and examples of eligible businesses and projects financed or refinanced by RBC Green Bonds, including quantitative performance measures. For further details on the methodology used, see the Impact measurement section on page 3.

## External review

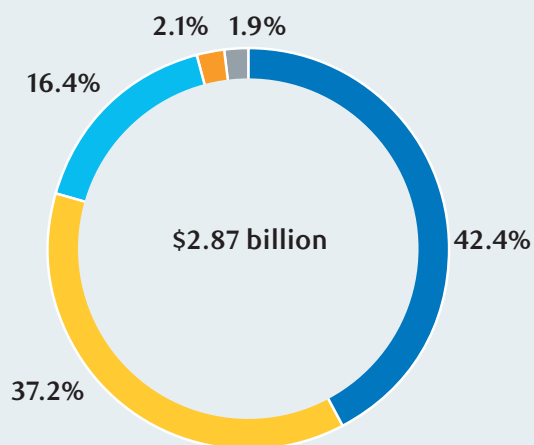
RBC has obtained a [Second-Party Opinion](#) from Sustainalytics to confirm the alignment of our framework with the Green Bond Principles 2018, Social Bond Principles 2020 and Sustainability Bond Guidelines 2018. PricewaterhouseCoopers LLP (PwC), our independent auditor, has provided limited assurance on the allocation of Green Bond proceeds identified with an  on page 3 of this Report. The remainder of the information contained within this Report is unaudited. See the Appendix for PwC’s Limited Assurance Report.

<sup>1</sup> The Sustainable Bond Working Group is composed of representatives from Corporate Treasury, Capital Markets, and the Sustainability Group and draws on Group Risk Management and Personal & Commercial Banking as required.

# Green Bond Asset Portfolio

The total amount of RBC Green Bond proceeds<sup>2</sup> was allocated to the Green Bond Asset Portfolio (the “Portfolio”), which contains financed and/or refinanced assets across the Eligible Categories. The allocation by Eligible Category and a summary of the estimated environmental impact for our second and third largest categories, Green buildings and Renewable energy, are below. Impact metrics for Clean transportation are not available at this time due to data limitations. All data presented is as at October 31, 2021 and in Canadian dollars unless otherwise stated.

## Green Bond Asset Portfolio Allocation



- Clean transportation (\$1,217 million)
- Green buildings (\$1,068 million)
- Renewable energy (\$472 million)
- Energy efficiency (\$60 million)
- Sustainable land use (\$54 million)

## Impact measurement



### Green buildings

Metric	Impact of the RBC Green Bond proceeds
Green building certified space (ft <sup>2</sup> )	2,341,522
Energy saved annually (eMWh)	19,595
GHG emissions avoided annually (tCO <sub>2</sub> e)	3,076

#### Methodology

Impact measurement metrics for green buildings were calculated using the national median source energy use intensity (EUI) as reported by Energy Star Portfolio Manager for both Canada and the United States. These factors were applied to each building’s square footage to calculate a baseline energy consumption. A building’s expected energy savings compared to the baseline energy consumption was calculated using certification scorecards in the case of Leadership in Energy and Environmental Design (LEED) or averages based on level of certification in the case of Building Owners and Managers Association (BOMA). Region specific carbon intensity factors<sup>3</sup> were applied to the expected energy savings to calculate the GHG emissions<sup>4</sup> avoided from the entire Portfolio. To calculate the impact associated with the outstanding RBC Green Bonds, our loan share of each project and each project’s portfolio share of the proceeds were applied. A limited number of buildings where energy savings and avoided GHG emissions could not be reliably estimated are not included in the impact measurement metrics.




### Renewable energy

Metric	Impact of the RBC Green Bond proceeds
Energy capacity (MW)	2,037
Energy generated annually (MWh)	3,378,065
GHG emissions avoided annually (tCO <sub>2</sub> e)	936,432

#### Methodology

Impact measurement metrics for renewable energy were calculated using client reported yearly energy generation data (MWh) or, where not available, efficiency factors provided by clients multiplied by the total size (MW) of the project to approximate yearly energy generation data. Region specific carbon intensity factors<sup>3</sup> were applied to the yearly energy generation data to calculate the greenhouse gas (GHG) emissions avoided<sup>4</sup> from the entire Portfolio. To calculate the impact associated with the outstanding RBC Green Bonds, our loan share of each project and each project’s portfolio share of the proceeds were applied. A limited number of projects not yet in operation are not included in the impact measurement metrics.

<sup>2</sup> RBC Green Bond proceeds refers to issued amount, net of commissions and fees. As at October 31, 2021, 100% of RBC Green Bond proceeds were allocated. 

<sup>3</sup> Sources for carbon intensity factors include Natural Resources Canada, U.S. Environmental Protection Agency, International Energy Agency and local utilities.

<sup>4</sup> GHG emissions avoided is calculated in tonnes of carbon dioxide equivalents (tCO<sub>2</sub>e).

# Green Bond Issuances

As of October 31, 2021, RBC has a total of CAD \$1,709,157,488 of Green Bonds outstanding, including two benchmark Green Bonds and 13 Green Structured Notes.

## Benchmark Green Bonds

As of October 31, 2021, RBC had two Green Bonds outstanding: the €500 million 5-year inaugural benchmark Green Bond issued in April 2019, and the USD \$750 million 5-year benchmark Green Bond issued in July 2021.

Settlement Date	Issuance Currency	Amount Issued (in issuance currency)	Amount Issued (CAD equivalent)	Maturity Date	ISIN
2-May-19	EUR	€500,000,000	\$715,617,500	2-May-24	XS1989375412
14-Jul-21	USD	\$750,000,000	\$928,650,000	14-Jul-26	US78016EZT71
<b>Total Amount Issued</b>			<b>\$1,644,267,500</b>		

## Green Structured Notes

RBC designs and issues a range of structured note products to meet clients' investment objectives, including Green Structured Notes. Proceeds from these notes are exclusively applied to finance or refinance, in part or in full, new and/or existing Green Assets, in line with RBC's Sustainable Bond Framework. As of October 31 2021, RBC had issued a total of CAD \$64,889,988 across 13 Green Structured Notes.

Settlement Date	Issuance Currency	Amount Outstanding (in issuance currency)	Amount Outstanding (CAD equivalent)	Maturity Date	ISIN
31-Dec-19	USD	\$3,300,000	\$4,086,060	31-Dec-24	XS2092547194
31-Dec-19	GBP	£2,125,000	\$3,601,027	31-Dec-24	XS2092546972
31-Dec-19	GBP	£500,000	\$847,301	31-Dec-24	XS2092546386
26-Feb-21	EUR	€10,000,000	\$14,312,350	26-Feb-41	XS1991340784
25-Feb-21	USD	\$10,000,000	\$12,382,000	25-Feb-36	XS1991334621
15-Sep-21	AUD	\$13,000,000	\$12,106,250	15-Sep-36	XS1991334035
11-May-21	CAD	\$3,594,000	\$3,594,000	15-May-28	Not applicable
11-May-21	CAD	\$683,000	\$683,000	16-Nov-27	Not applicable
8-Jun-21	CAD	\$3,541,000	\$3,541,000	12-Jun-28	Not applicable
8-Jun-21	CAD	\$531,000	\$531,000	10-Dec-27	Not applicable
6-Jul-21	CAD	\$2,880,000	\$2,880,000	10-Jul-28	Not applicable
6-Jul-21	CAD	\$326,000	\$326,000	10-Jul-28	Not applicable
13-Aug-21	CAD	\$6,000,000	\$6,000,000	14-Aug-28	CA78014Y2042
<b>Total Amount Outstanding</b>			<b>\$64,889,988</b>		

## Currency

All amounts in this document are in Canadian Dollars unless otherwise noted. U.S. Dollars, British Pounds, Euros, and Australian Dollars are converted using the spot exchange rate as of October 31, 2021.<sup>5</sup>

<sup>5</sup> Exchange rate data as of October 31, 2021: 1 AUD = 0.93125 CAD; 1 EUR = 1.431235 CAD; 1 USD = 1.2382 CAD; 1 GBP = 1.694601 CAD.

# Case Studies on Portfolio Assets

The RBC Green Bond proceeds are allocated to a portfolio of projects and companies aligned to the Eligible Categories as outlined on page 2. The following case studies<sup>6</sup> are examples of assets in our Portfolio.

## Nautilus Solar Energy, LLC – Renewable energy

RBC Capital Markets acted as Joint Lead Arranger to Nautilus Solar, an owner-operator of solar projects serving residential and corporate customers throughout the United States. The loan supports the construction and development of community solar projects in various U.S. states. To date, Nautilus has developed over 800 MW of solar projects across 250 sites. Through community solar, subscribers are able to capture the environmental and financial benefits of electricity generated from local solar facilities without having to install rooftop panels. Community solar eliminates common barriers to solar access associated with residential rooftop systems, including cost, homeownership requirements, and structural challenges. A number of projects have been developed specifically to provide power to low- and moderate-income communities, with Nautilus offering a guaranteed discount on the community solar portion of the consumer's electric bill as an incentive.



## Wataynikaneyap Power LP – Energy efficiency

RBC Capital Markets acted as Mandated Lead Arranger and Administrative Agent for the syndicated credit facility financing the Wataynikaneyap Power LP (“Wataynikaneyap”) Transmission Line Project. Wataynikaneyap is a licensed transmission company majority-owned by 24 First Nations communities (51%) in partnership with Fortis Inc. and other investors (49%) and is one of the largest First Nations-led projects in Canada. Once completed, the transmission line will connect 17 remote First Nation communities to the provincial transmission grid in Ontario for the first time. These communities will no longer need to rely on diesel generation for electricity which will reduce load restrictions and the occurrence of power outages. The project is expected to avoid approximately 25 million litres/year of diesel usage, resulting in over 6.6 million tonnes of avoided GHG emissions over 40 years. The project was selected as a Top Project for 2021 by Clean50 and serves as a model and catalyst for greater prosperity and economic self-determination.



<sup>6</sup> Information for the case studies has been provided and reviewed by the clients profiled in the case studies.

# Case Studies on Portfolio Assets

(Continued)



## Eighth Avenue Place – Green buildings

RBC Capital Markets acted as sole Bookrunner and Agent on a long-term commercial mortgage for Eighth Avenue Place in Calgary, Alberta, Canada. Eighth Avenue Place is a 1.9 million square foot office complex located across two towers in downtown Calgary, and as of October 2021, was 99.4% leased. Eighth Avenue Place is Canada's first pre-certified LEED Platinum office tower, and is the first office tower in Canada to have been awarded LEED Platinum Core and Shell Certifications under the U.S. Green Building Council's LEED rating system. Sustainability and energy resource management were a priority in the design and construction of the building, which features recycled and regional construction materials and low-emitting paints, adhesives and sealants. A smart building platform is used to collect and analyze building and energy performance data, and low-flow and water saving plumbing features are intended to reduce water use by approximately 40%. A 25,000 square foot green roof was installed for storm water runoff and is home to approximately 600,000 honey bees.



## Mosaic Transit Partners GP – Clean transportation

RBC Capital Markets acted as Joint Lead Arranger, Joint Bookrunner and Underwriter on the bond component of the financing for the Finch West Light Rail Transit (LRT) project and acted as Mandated Lead Arranger and IRS provider on the syndicated credit facility component. Mosaic Transit Partners is the consortium that was awarded the contract to design, build, finance and maintain the Finch West LRT project. The Finch West LRT will provide faster, more frequent and reliable transit service to existing local transit users and will contribute to reduced congestion, improved air quality and reduced GHG emissions along the transit corridor. The project will bring 11 kilometers of rapid transit to Finch Avenue West, one of the most heavily used surface corridors in northwest Toronto and will feature 18 stops, with trains running every 5-7 minutes during peak hours. Once completed, the Finch West LRT is expected to service 46,000 passengers each weekday by 2031 with the capacity to service up to 6,300 passengers per hour per direction.



# Appendix: PwC Limited Assurance Report



## Independent practitioner's limited assurance report on select key performance indicators presented within Royal Bank of Canada's Green Bond Report

### To the Board of Directors and Management of Royal Bank of Canada ("RBC")

We have undertaken a limited assurance engagement on the following select key performance indicators detailed below (the selected information) presented within RBC's Green Bond Report as at October 31, 2021.

#### Selected information

Our limited assurance engagement was performed on the following selected key performance indicators:

Performance indicator	Report page(s)
Allocation of the Green Bond Portfolio to each of the Eligible Categories	3
Allocated proceeds at the reporting period end	3

#### Management's responsibility

Management is responsible for the preparation of the selected information in accordance with RBC's Sustainable Bond Framework, established June 2020 and available at <https://www.rbc.com/investor-relations/assets-custom/pdf/RBC-Sustainable-Bond-Framework-EN.pdf> (the applicable criteria). Management is also responsible for such internal control as management determines necessary to enable the preparation of the selected information that is free from material misstatement, whether due to fraud or error.

#### Our responsibility

Our responsibility is to express a limited assurance conclusion on the selected information based on the evidence we have obtained. We conducted our limited assurance engagement in accordance with the Canadian Standard on Assurance Engagements (CSAE) 3000, *Attestation Engagements Other than Audits or Reviews of Historical Financial Information* and the International Standard on Assurance Engagements (ISAE) 3000, *Assurance Engagements Other Than Audits or Reviews of Historical Financial Information*. These standards require that we plan and perform this engagement to obtain limited assurance about whether the selected information is free from material misstatement.

A limited assurance engagement involves performing procedures (primarily consisting of making inquiries of management and others within the entity, as appropriate, and applying analytical procedures) and evaluating the evidence obtained. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the decisions of users of our report. The procedures are selected based on our professional judgment, which includes identifying areas where the risks of material misstatement, whether due to fraud or error, in preparing the selected information in accordance with the applicable criteria are likely to arise.

Our engagement included, among others, the following procedures performed:

- Making enquiries of management to obtain an understanding the overall governance and internal control environment relevant to the management, aggregation and reporting of the selected information;
- Evaluating the design of key structures, systems, processes and controls for managing, recording and reporting the selected information;
- Obtaining the internal listing of assets allocated into the Green Bond Portfolio and confirming this was consistent with the proposed disclosures within the Green Bond Report on a sample basis; and
- Agreeing and testing the underlying data related to the selected information on a sample basis.

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\*PwC refers to PricewaterhouseCoopers LLP, an Ontario limited liability partnership.

The procedures performed in a limited assurance engagement vary in nature and timing from, and are less in extent than for, a reasonable assurance engagement and, consequently, the level of assurance obtained is substantially lower than the assurance that would have been obtained had a reasonable assurance engagement been performed.

#### Our independence and quality control

We have complied with the relevant rules of professional conduct/code of ethics applicable to the practice of public accounting and related to assurance engagements, issued by various professional accounting bodies, which are founded on fundamental principles of integrity, objectivity, professional competence and due care, confidentiality and professional behaviour.

The firm applies Canadian Standard on Quality Control 1, *Quality Control for Firms that Perform Audits and Reviews of Financial Statements, and Other Assurance Engagements* and, accordingly, maintains a comprehensive system of quality control, including documented policies and procedures regarding compliance with ethical requirements, professional standards and applicable legal and regulatory requirements.

#### Conclusion

Based on the procedures we have performed and the evidence we have obtained, nothing has come to our attention that causes us to believe that RBC's selected information as at October 31, 2021, is not prepared, in all material respects, in accordance with the applicable criteria.

#### Purpose of statement and restriction on use of our report

The selected information has been prepared in accordance with the applicable criteria to assist RBC's management to report to the Board of Directors the selected information. As a result, the selected information may not be suitable for another purpose. Our report is intended solely for RBC. We neither assume nor accept any responsibility or liability to any third party in respect of this assurance report.

*PricewaterhouseCoopers LLP*

Chartered Professional Accountants

Toronto, Ontario  
April 4, 2022

# Disclaimer

This Green Bond Report is provided for informational purposes only and is subject to change without notice. After the date of this document, Royal Bank of Canada (“RBC”) does not assume any responsibility or obligation to update or revise any statements in this document, regardless of whether those statements are affected by the results of new information, future events or otherwise. No representation or warranty, express or implied, is or will be made in relation to the accuracy, reliability or completeness of the information contained herein. No liability whatsoever is or will be accepted by RBC for any loss or damage howsoever arising out of or in connection with the use of, or reliance upon, the information contained in this document.

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This material is not intended for distribution to, or use by, any person or entity in any jurisdiction where such distribution or use would be contrary to law or regulation. This Green Bond Report may contain projections and forward-looking statements within the meaning of certain securities laws, including the “safe harbour” provisions of the United States Private Securities Litigation Reform Act of 1995 and any applicable Canadian securities legislation. Forward-looking statements contained in this document may include, but are not limited to, statements regarding the allocation of Green Bond proceeds and the estimated impact associated with outstanding Green Bonds. Forward-looking statements are typically identified by words such as “believe”, “expect”, “foresee”, “forecast”, “anticipate”, “intend”, “estimate”, “goal”, “plan” and “project” and similar expressions of future or conditional verbs such as “will”, “may”, “should”, “could” or “would”.

By their very nature, forward-looking statements require certain assumptions and are subject to inherent risks and uncertainties, which give rise to the possibility that predictions, forecasts, projections, expectations or conclusions will not prove to be accurate and that such assumptions may not be correct. Readers are cautioned not to place undue reliance on these statements as a number of risk factors could cause actual results to differ materially from the expectations expressed in such forward-looking statements. These factors – many of which are beyond RBC’s control and the effects of which can be difficult to predict – include: difficulty identifying assets that meet the Green Bond criteria, and the risk that eligible projects will be completed within any specified period or at all or with the results or outcome as originally expected or anticipated by RBC.

Readers are cautioned that these risk factors are not exhaustive. When relying on the forward-looking statements contained in this document to make decisions with respect to RBC, investors and others should carefully consider the foregoing factors and other uncertainties and potential events.

Except as required by law, none of RBC or its affiliates undertakes to update any forward-looking statement that may be made from time to time in this document.



