

Financing Water Systems: Green Bonds & Canada Infrastructure Bank

February 11, 2020



CWN Webinars

Connecting water professionals to decision-ready knowledge



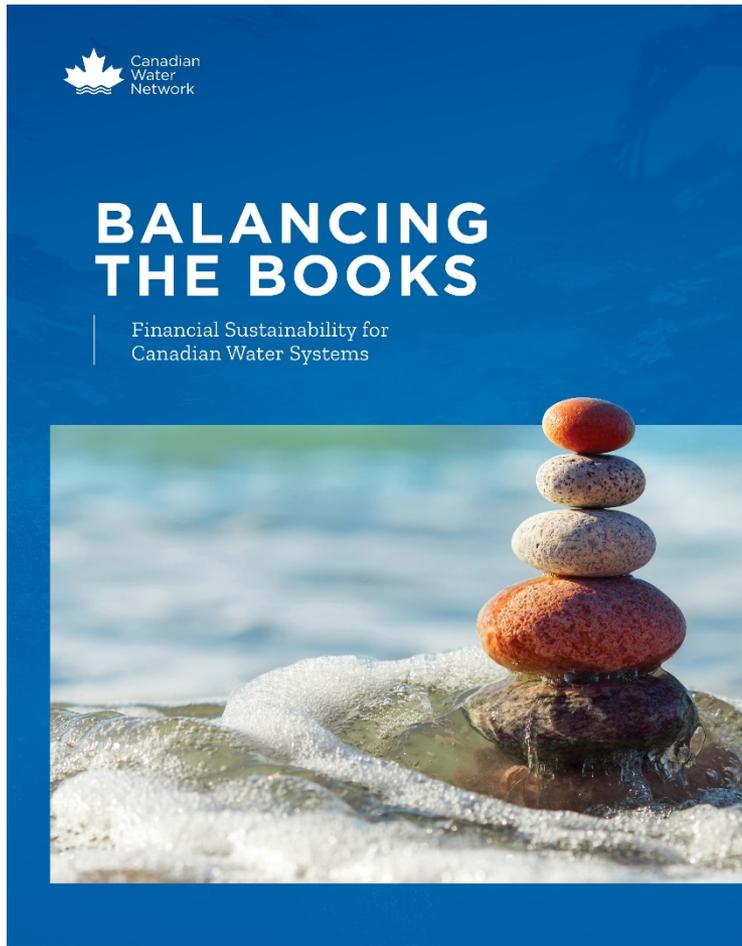
Insights for the water sector

helping decision-makers move forward

Canadian Water Network frames what is known and unknown in a way that usefully informs the choices being made.

cwn-rce.ca

Finding Financial Solutions



“As the costs of managing water systems rise, the socio-economic consequences of decisions are becoming more central in the search for sustainable financing options.”

— Balancing the Books

Evolving Challenges

- Historical underinvestment in infrastructure
- Deteriorating distribution systems
- Growing stormwater & flood management needs
- Additional wastewater treatment
- Growing levels of service for high quality, affordable water and wastewater

Typical Revenue Sources



FIGURE 3: Average breakdown of revenue sources for 35 water and 31 wastewater utilities in Canada from 2009 - 2013

Data source: NWWBI database

- Revenue-generating approaches have the ability to account for some expanding utility costs
- Financing tools are needed to bridge the gap

Balancing the Equation

- There's no one-size-fits-all model
- A growing need to broaden the parameters of cost accounting
- Greater guidance on incorporating environmental & climate-related costs

INVOICE 05/2017

Company Inc.

1452 Avenue
New York, NY 0002

Bill to

Invoice date: 01.05.2017

No.	Description	Unit	Price	Total
1.	Water used	1	9,12	
2.	Sewer services charge	1	4,25	
3.	Storm drain	1		
				Total: 82,29

Terms & Conditions

Payment is due within 14 days

Financing Tools

Types of tools

- 💧 Reserves and debt
- 💧 Green bonds
- 💧 Public-private partnerships (P3)
- 💧 Service concession financing

Challenges/considerations

- 💧 Type of municipality or utility
- 💧 Service area
- 💧 Service population
- 💧 Debt limits
- 💧 Customer affordability and equity

Speakers



Sashen Guneratna

Managing Director
Investment Group
Canada Infrastructure Bank



Lindsay Caldwell

Director
Investment Group
Canada Infrastructure Bank



Sarah Thompson

Director
Sustainable Finance
RBC Capital Markets



Mansoor Khan

Director
Government Finance
RBC Capital Markets

Canada Infrastructure Bank: Water and Wastewater

February 11, 2020



Introduction

- The Canada Infrastructure Bank (“CIB”) is a federal Crown Corporation
- The CIB’s mandate is to invest **\$35 billion in new, revenue generating public infrastructure** projects within **four priority sectors**:
 - Green Infrastructure (water and wastewater, renewable generation, transmission, energy storage, etc.);
 - Public Transit;
 - Trade and Transportation; and
 - Broadband
- The CIB will invest in projects that:
 - **Benefit and are supported** by municipalities, provinces, territories or Indigenous groups;
 - **Attract private sector capital** to facilitate the delivery of innovative infrastructure; and
 - **Transfers risk** to the private sector
- The CIB team’s expertise allows us to play an active **advisory role** with public sector sponsors to assist them to bring forward project proposals and structure appropriately for the **CIB investment**

Challenges in the water and wastewater sector

- The CIB understands municipalities are facing several challenges investing in their water and wastewater systems, including:
 - The true **cost** of delivering water and wastewater services is often **unknown**;
 - **Taxpayers are subsidizing ratepayers** and vice versa;
 - Municipalities are often close to reaching existing **debt limits**;
 - **Significant investment** is required for replacement, growth and / or compliance;
 - **Small tax and / or rate base** cannot absorb large investments, resulting in irregular spikes in rates; and
 - Timing and amount of **development fees are uncertain** to support infrastructure for new development communities
- **Innovative project structures** can help address these challenges
 - A municipality in Ontario is pursuing a unique model with the transaction expected to close in early 2020
- The CIB can assist municipalities with their water and wastewater projects by offering a **standardized debt product** to projects meeting the CIB's criteria

Concession / Services Agreement Model

- Under this model, a **municipality enters into a Concession / Services Agreement**
- The **private sector would operate** its water and wastewater system for a **fixed term**
- While similar to a Public-Private Partnership structure, the Concession / Services Agreement can be developed to **meet the unique needs of water and wastewater assets**
- The private sector party would **design, build, finance, operate and maintain** new (and existing) infrastructure assets under a Special Purpose Venture (“SPV”)
 - These **risks would be transferred to the private sector**
- The private sector would receive **ongoing payments** from the Municipality
 - Payments can be cost of service, availability payments or other flexible revenue models
- The municipality would **retain responsibility** for rate setting, billing, administration and system planning
- The municipality would **retain ownership** over the water and wastewater system

How to engage CIB on Water/Wastewater Projects

- **Identify water and wastewater investment** that is required - new infrastructure or rehabilitation of existing infrastructure
- Hire and work with a **financial and legal advisor** to help develop:
 - Project scope;
 - Business case and rate impact;
 - Project structure; and
 - Procurement / selection process
- **Engage early with the CIB** to ensure the Project meets the CIB's criteria (see next slide)
 - The CIB would typically be involved before the procurement process launches and the project structure is fully developed
- If the municipality chooses to run a competitive tender process, the CIB would provide a **stapled term sheet** that can be used by all bidders
- Once the preferred proponent is selected by the municipality, the CIB would **complete due diligence and finalize the terms** and financing agreement with the preferred proponent

Criteria for CIB involvement

	Potential Project Characteristics
Scope of the Project	<ul style="list-style-type: none"> ▪ Rehabilitation and / or greenfield development or expansion of water and wastewater infrastructure ▪ Risk-transfer to a private sector entity ▪ Private sector capital invested in the project (debt and / or equity)
Public Sponsor	<ul style="list-style-type: none"> ▪ Project is sponsored by the relevant Municipality and / or Indigenous group
Public Interest	<ul style="list-style-type: none"> ▪ Project is in the public interest of the community that it serves
Project Size	<ul style="list-style-type: none"> ▪ \$30 million minimum
Revenues	<ul style="list-style-type: none"> ▪ Revenue through user rates and / or payments from the Municipality
Selected Structure	<ul style="list-style-type: none"> ▪ Concession / Services Agreement Model ▪ Ownership of the system and rate setting responsibility remains with the Municipality
Selection Process	<ul style="list-style-type: none"> ▪ Private sector partner is selected through a competitive tender process undertaken by a Municipality or is bilaterally selected by the Municipality
Private Sector Qualifications	<ul style="list-style-type: none"> ▪ Envisioned to broadly rely on Municipal selection criteria, subject to the CIB review

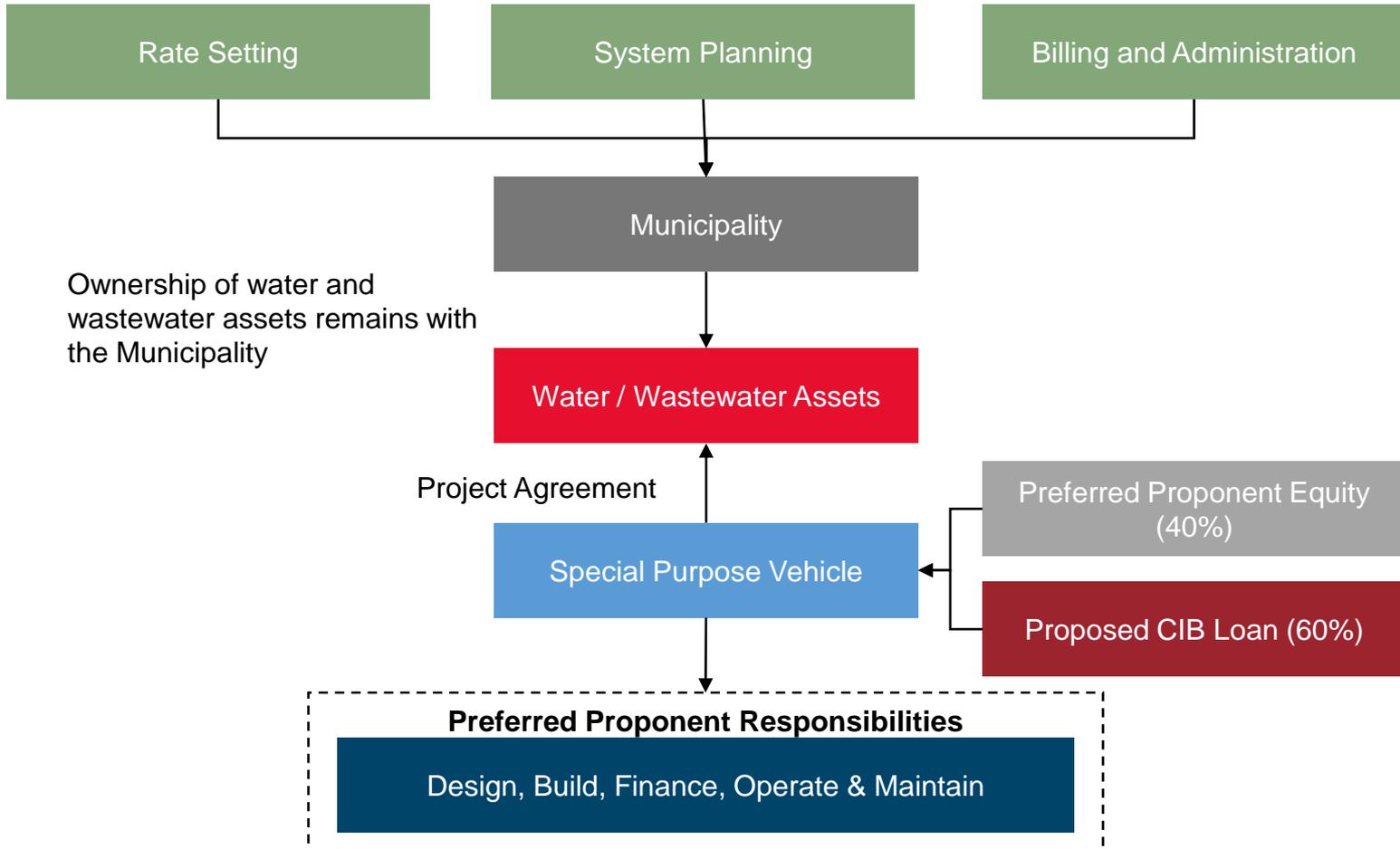
Potential CIB Loan Terms

Criteria	Details
Amount	<ul style="list-style-type: none">▪ Minimum of \$20 million▪ Up to 60% of the cost of the Project to match the regulated utility model (60 / 40 debt to equity ratio)▪ Intended to cover eligible costs (including costs associated with new infrastructure and transaction costs)
Interest Rate	<ul style="list-style-type: none">▪ TBD on a project by project basis
Tenor	<ul style="list-style-type: none">▪ Long term to match the duration of the Concession / Service Agreement to eliminate refinancing risk and help smooth rate increases to users
Amortization	<ul style="list-style-type: none">▪ Flexible terms available to accommodate unique needs of the Project
Security	<ul style="list-style-type: none">▪ Secured against revenues of a water and wastewater system▪ Non-recourse to the Municipality

Case Study: Concession / Services Agreement

- Municipality launched a **procurement process** for the provision of services for their **existing and new water and wastewater assets** (the “Project”)
- Municipality will **continue to own** all existing and new infrastructure assets
- This will be Ontario’s first **Design-Build-Finance-Operate-Maintain** (“DBFOM”) water project
- The CIB loan will assist the Municipality realize the Project by:
 - Providing **debt that would not otherwise be available** by the commercial lending market, given the small investments required over a decade
 - Providing a **lower cost of financing** to assist the Municipality in implementing its investment requirements
- The CIB has offered a “stapled” **20-year loan** to the Project to cover **60% of the cost** of the new infrastructure or **up to \$20 million** with the **balance provided by the private sector**

Case Study: Project Structure



Thank you

Contact us at investments@cib-bic.ca

Green Bonds for the Water Sector

February 11, 2020



CANADIAN WATER NETWORK
RÉSEAU CANADIEN DE L'EAU



Capital
Markets

Green Bond Market Overview

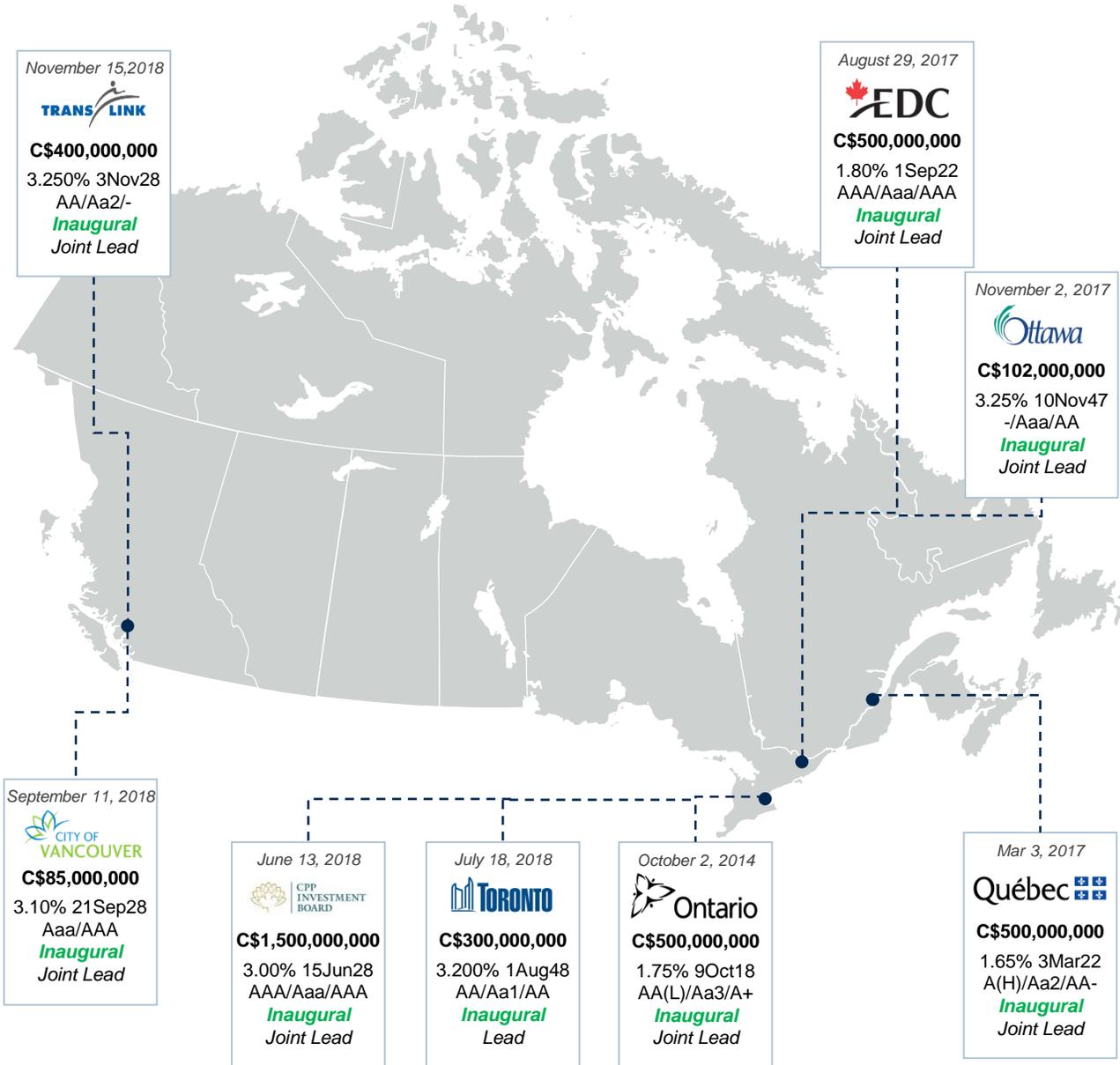
Section I



Capital
Markets

RBC's Green Bond Underwriting

RBC is the undisputed leader in the Canadian public sector green bond market



2019 CAD Green Bond League Table*

Rank	Dealer	Credit (MM)	# Deals	MS %
1	RBC	1,644	10	26%
2	CIBC	1,304	8	21%
3	BMO	1,078	6	17%
4	TD	944	7	15%
5	HSBC	522	4	8%
6	SC	400	3	6%
7	NBF	232	3	4%
8	BOA	190	1	3%

6,313						
Year	2014	2015	2016	2017	2018	2019
RBC Capital Markets	#1	#1	#1	#1	#1	#1

All Canadian Government Green Bond Issues to Date

Price Date	Issuer	Size (C\$MM)	Maturity	RBC Role
20-Nov-19	Province of Ontario	800	5-Feb-25	Joint Lead
22-Oct-19	TransLink	200	29-Oct-50	Co-Mgr
9-Sep-19	City of Toronto	200	24-Sep-39	Joint Lead
24-Jul-19	EDC	500	31-Jul-24	Joint Lead
22-Jul-19	City of Ottawa	200	10-Nov-47	Joint Lead
22-Feb-19	Province of Quebec	800	22-Feb-24	Joint Lead
7-Feb-19	Province of Ontario	950	5-Feb-25	Joint Lead
23-Nov-18	TransLink	400	23-Nov-28	Joint Lead
11-Sep-18	City of Vancouver	85	21-Sep-28	Joint Lead
1-Aug-18	City of Toronto	300	1-Aug-48	Lead
6-Jul-18	Province of Quebec	500	6-Jul-25	Joint Lead
15-Jun-18	CPPIB	1,500	15-Jun-28	Joint Lead
1-Mar-18	Province of Quebec	500	1-Mar-23	Joint Lead
5-Feb-18	Province of Ontario	1,000	5-Feb-25	Joint Lead
10-Nov-17	City of Ottawa	102	10-Nov-47	Joint Lead
5-Sep-17	EDC	500	1-Sep-22	Joint Lead
3-Mar-17	Province of Quebec	500	3-Mar-22	Joint Lead
2-Feb-17	Province of Ontario	800	27-Jan-23	Joint Lead
29-Jan-16	Province of Ontario	750	27-Jan-23	Joint Lead
2-Oct-14	Province of Ontario	500	9-Oct-18	Joint Lead

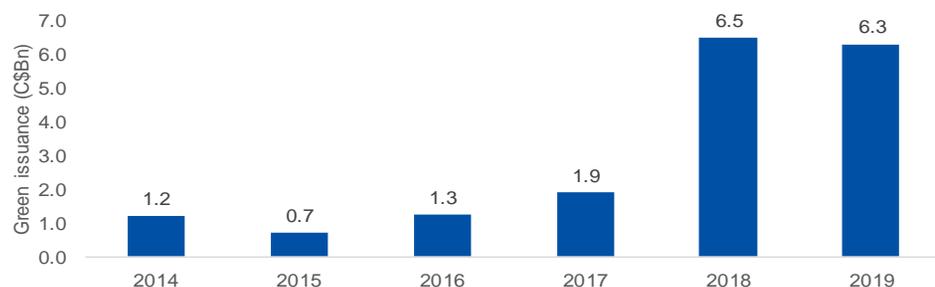
RBC is the only bank to have led all provincial, municipal or crown CAD green bonds for inaugural issuers

Green Bond Market Update

Canadian dollar green bond market

Overview

- In 2019, CAD Green Bond issuance aggregated to C\$6.3 billion similar to 2018 when issuance peaked at C\$6.5 billion
- There have been a total of 23 issuers in the CAD market with resulting in a current outstanding market size in excess of C\$20 billion
- Province of Ontario is the largest Green Bond issuer having issued C\$4.75 billion since their inaugural deal in 2014 followed by Province of Quebec who have C\$2.3 billion outstanding having issued their inaugural deal in 2017
- Canada Pension Plan Investment Board became the first pension investment board to issue a Green Bond globally in 2018. The transaction also marked the largest CAD Green Bond issue to date (C\$1.5bn)
- European Investment Bank, IFC and World Bank are the only three development banks who have accessed the Canadian Green Bond market to date
- City of Ottawa became the first municipal issuer to issue a Green Bond in 2017 and since we have seen the likes of City of Toronto, TransLink and City of Vancouver all issue Green Bonds
- In corporates, Ontario Power Generation has been the largest issuer having accessed the market twice for an aggregate size of C\$950 million
- 85% of the issuance has been in 10 years and under while a few issuers have accessed the long end
- Most of the Canadian issuers have issued after setting up a Green Bond framework and getting a second party opinion from the likes of CICERO, Sustainalytics or DNV GL
- Most Green bonds have priced relatively flat to the conventional bond curve despite larger orderbooks and new investor participation adding depth
- Post issue, these bonds have often traded 2-5bps tighter in the secondary market given the quality and breadth of distribution for these bonds



CAD Green Bond Issuance to Date

Price Date	Issuer	Size (C\$MM)	Maturity	Verifier
08-Jan-20	EIB (European Investment Bank)	500	22-Jan-25	N/A
10-Dec-19	Ivanhoe	300	12-Dec-24	Sustainalytics
20-Nov-19	Province of Ontario	750	05-Feb-25	CICERO
22-Oct-19	TransLink	200	29-Oct-50	Sustainalytics
11-Sep-19	Brookfield Renewable Partners	600	2030/2039	Sustainalytics
09-Sep-19	City of Toronto	200	24-Sep-39	Sustainalytics
04-Sep-19	IFC	750	13-Sep-24	CICERO
24-Jul-19	EDC	500	31-Jul-24	CICERO
22-Jul-19	City of Ottawa	200	10-Nov-47	Sustainalytics
14-Feb-19	Province of Quebec	800	22-Feb-24	CICERO
7-Feb-19	Province of Ontario	950	5-Feb-25	CICERO
25-Jan-19	Algonquin Power & Utilities Corp	500	29-Jan-29	Sustainalytics
18-Jan-19	Ontario Power Generation	500	18-Jan-49	Sustainalytics
23-Nov-18	TransLink	400	23-Nov-28	Sustainalytics
20-Sep-18	Brookfield Renewable Partners	300	15-Jan-29	Sustainalytics
11-Sep-18	City of Vancouver	85	21-Sep-28	Sustainalytics
1-Aug-18	City of Toronto	300	1-Aug-48	Sustainalytics
6-Jul-18	Province of Quebec	500	6-Jul-25	CICERO
22-Jun-18	Ontario Power Generation	450	22-Jun-48	Sustainalytics
15-Jun-18	CPPIB	1,500	15-Jun-28	CICERO
9-May-18	Manulife Financial	600	9-May-28	Sustainalytics
1-Mar-18	Province of Quebec	500	1-Mar-23	CICERO
5-Feb-18	Province of Ontario	1,000	5-Feb-25	CICERO
18-Jan-18	EIB (European Investment Bank)	700	18-Jan-23	N/A
10-Nov-17	City of Ottawa	102	10-Nov-47	Sustainalytics
5-Sep-17	Export Development Canada	500	1-Sep-22	CICERO
3-Mar-17	Province of Quebec	500	3-Mar-22	CICERO
2-Feb-17	Province of Ontario	800	27-Jan-23	CICERO
16-Sep-16	EIB (European Investment Bank)	500	16-Sep-21	N/A
29-Jan-16	Province of Ontario	750	27-Jan-23	CICERO
5-Nov-15	EIB (European Investment Bank)	500	5-Nov-20	N/A
22-Jul-15	500 Georgia Office Partnership	225	22-Jul-25	N/A
2-Oct-14	Province of Ontario	500	9-Oct-18	CICERO
2-Jul-14	Tandem Health Partners Partnership	232	2-Jul-46	N/A
2-Apr-14	TD Bank	500	3-Apr-17	DNV GL
8-Aug-11	World Bank (IBRD)	10	9-Aug-21	Y

Green Bond Issuance

Case Studies – Municipal Green Bond Issuance

Issuer			
Year, Size and Term	<ul style="list-style-type: none"> ▪ 2017: \$102mm 30-year ▪ 2019: \$200mm 30-year 	<ul style="list-style-type: none"> ▪ 2018: \$300mm 30-year ▪ 2019: \$200mm 20-year 	<ul style="list-style-type: none"> ▪ 2018: \$85mm 10-year
Currency	<ul style="list-style-type: none"> ▪ CAD 	<ul style="list-style-type: none"> ▪ CAD 	<ul style="list-style-type: none"> ▪ CAD
Second Party Opinion	<ul style="list-style-type: none"> ▪ Sustainalytics 	<ul style="list-style-type: none"> ▪ Sustainalytics 	<ul style="list-style-type: none"> ▪ Sustainalytics
Use of Proceeds	<ul style="list-style-type: none"> ▪ Eligible projects include renewable energy, energy efficiency, pollution prevention and control, clean transportation, sustainable water management, sustainable management of natural resources, climate adaptation and resilience, and green buildings 	<ul style="list-style-type: none"> ▪ Eligible projects include renewable energy, energy efficiency, pollution prevention and control, sustainable clean transportation, sustainable water and waste water management, climate change adaptation, co-efficient and/or circular economy principles integration, and green buildings 	<ul style="list-style-type: none"> ▪ Eligible projects include renewable energy, energy efficiency, green buildings, clean transportation, pollution prevention and control, sustainable water and wastewater management, environmentally sustainable management of living natural resources
Project Evaluation and Selection	<ul style="list-style-type: none"> ▪ The Finance Services Department (FSD) is responsible in consultation with internal and external expert stakeholders, including Planning Infrastructure and Economic Development, Legal and other departments ▪ FSD will verify the suitability and eligibility with the Planning Infrastructure and Economic Development Department 	<ul style="list-style-type: none"> ▪ The Corporate Finance Division (CFD) is responsible in consultation with internal and external expert stakeholders, including Environment & Energy, City Planning, Solid Waste Management Services, Parks, Forestry and Recreation, Toronto Water and Legal Services Divisions and other City Divisions, Agencies and Corporations 	<ul style="list-style-type: none"> ▪ The Finance, Risk and Supply Chain Management Department (FRS) is responsible for evaluating and screening capital projects in consultation with other City departments such as Engineering Services; Planning, Urban Design, and Sustainability; and Real Estate Facilities Management.
Management of Proceeds	<ul style="list-style-type: none"> ▪ Proceeds will be applied directly to the project to repay the bridge financing position of the City ▪ Where substantial completion has not been met on a project, the funds will be held in an account of the City and invested in holdings with maturities aligned with substantial completion of the projects identified in the schedule to the by-law 	<ul style="list-style-type: none"> ▪ Proceeds will be applied directly to the project to repay the City's temporary funding for the project. ▪ Where substantial completion has not been met on an Eligible Project, the funds will be held in an account of the City and invested in holdings with maturities aligned with substantial completion of the projects identified in the schedule to the by-law 	<ul style="list-style-type: none"> ▪ Net proceeds from each Green Bond will be deposited and recorded separately which tracks the use of and allocation of funds for Eligible Projects ▪ Unallocated can be temporarily held in the account of the City and invested in cash or liquid fixed income instruments in accordance with the Vancouver Charter
Reporting	<ul style="list-style-type: none"> ▪ FSD will coordinate the collective reporting requirements and provide an annual information report on its website addressing both allocation and impact reporting 	<ul style="list-style-type: none"> ▪ CFD will coordinate with relevant City divisions to collect reporting metrics and provide an annual newsletter on its website addressing both funding allocation and sustainability impact reporting 	<ul style="list-style-type: none"> ▪ As long as there are outstanding Green Bonds issued under this Framework, the City will publish through the City's website updates once a year on allocation of the proceeds and summary of Eligible Projects

Becoming a Green Bond Issuer

Section II



Capital
Markets

Becoming a Green Bond Issuer

Selecting the right sustainable debt product depends on an issuer's sustainable finance needs and objectives

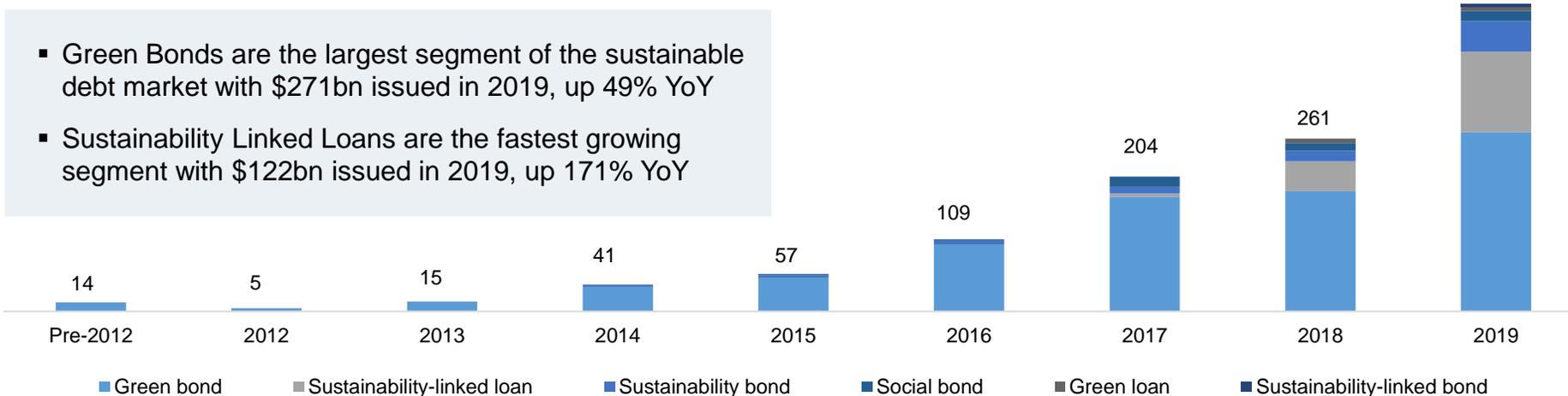
Green, Social and Sustainability Bonds and Loans

- Focus on the use of proceeds
- Proceeds must be allocated to eligible projects that provide clear environmental and/or social benefits
- The allocation of proceeds to eligible projects must be tracked by the issuer in a formal internal process; this process should be verified by an auditor or other third party
- Issuers are expected to provide annual reporting detailing the projects to which bond proceeds have been allocated, the amounts allocated, and their expected impact

Sustainability Linked Loans and Bonds

- Focus on the sustainability performance of the borrower
- Debt terms are aligned to the borrower's performance against predetermined Sustainability Performance Targets (SPTs)
- Proceeds can be used for general corporate purposes
- Borrowers are expected to provide annual reporting relating to their SPTs either privately to the lenders and/or publicly through their annual report or sustainability report
- Borrowers are encouraged to seek an external review of their performance against their SPTs

Cumulative Sustainable Debt Issuance (\$bn) by Instrument Type



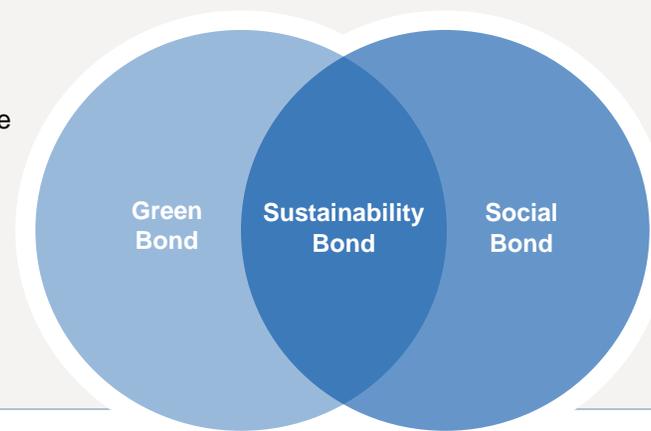
Source: Bloomberg NEF

Becoming a Green Bond Issuer

Definitions

- Green, Social and Sustainability Bonds are just like regular bonds, except their proceeds are earmarked to fund projects that have environmental and/or social benefits
- Green Bonds finance eligible green projects and align with the Green Bond Principles (GBP); Social Bonds finance eligible social projects and align with the Social Bond Principles (SBP); and Sustainability Bonds finance green and social projects and align with both the GBP and SBP
- All types of issuers in the debt capital markets can issue a Green, Social or Sustainability Bond as long as it is aligned with the four core components of the GBP/SBP

Green Bond	Social Bond	Sustainability Bond
<ul style="list-style-type: none"> Proceeds are exclusively applied to finance or re-finance eligible Green Projects Aligned with the four core components of the Green Bond Principles (GBP) Eligible green project categories include: <ul style="list-style-type: none"> ✓ Renewable energy ✓ Energy efficiency ✓ Pollution prevention and control ✓ Sustainable management of natural resources and land use ✓ Biodiversity conservation ✓ Clean transportation ✓ Water and wastewater management ✓ Climate change adaptation ✓ Eco-efficient and/or circular economy adapted products, production technologies and processes ✓ Green buildings 	<ul style="list-style-type: none"> Proceeds are exclusively applied to finance or re-finance eligible Social Projects Aligned with the four core components of the Social Bond Principles (SBP) Eligible social project categories include: <ul style="list-style-type: none"> ✓ Affordable basic infrastructure ✓ Access to essential services ✓ Affordable housing ✓ Employment generation ✓ Food security ✓ Socioeconomic advancement and empowerment Social projects should aim to address or mitigate a specific social issue for a target population, such as those living below the poverty line, and excluded and/or marginalized populations and/or communities 	<ul style="list-style-type: none"> Proceeds are exclusively applied to finance or re-finance a combination of both Green and Social Projects Aligned with the four core components of both the GBP and SBP Certain social projects may also have environmental co-benefits, and certain green projects may have social co-benefits. The classification of a use of proceeds bond as a Green Bond*, Social Bond, or Sustainability Bond should be determined by the issuer based on its primary objectives for the underlying projects



Note: at least 90% of a bond's proceeds must be dedicated to projects with environmental benefits in order to qualify as Green Bond index-eligible.

Becoming a Green Bond Issuer

Voluntary process guidelines for issuance

- The Green Bond Principles (GBP), Social Bond Principles (SBP) and Sustainability Bond Guidelines (SBG) have become the leading framework globally for issuance of Green, Social and Sustainability bonds
- The GBP were launched in 2014 and the SBP and SBG in 2017
- The Principles are voluntary process guidelines that recommend transparency and disclosure
- They promote integrity in the market by clarifying the process for issuance
- The International Capital Market Association (ICMA) serves as Secretariat, assuming administrative duties and providing guidance for the governance of the Principles
- The Principles are governed by an Executive Committee voted by members, including investors, intermediaries and issuers

Key features of the Green and Social Bond Principles

1 Use of Proceeds

- This is the cornerstone of a Green, Social or Sustainability Bond
- Issuers should state eligible green and/or social project categories in the Use of Proceeds section of the offering document

2 Process for Project Evaluation and Selection

- Issuers should describe the process by which they will determine how projects fit within the eligible project categories
- This information should be positioned within the context of the issuers' overarching sustainability objectives, strategy, policy and/or processes

3 Management of Proceeds

- The net proceeds, or an amount equal to the net proceeds, should be credited to a sub-account, moved to a sub-portfolio or otherwise tracked by the issuer in an appropriate manner

4 Reporting

- Issuers are expected to report annually on the allocation of proceeds until full allocation
- The use of qualitative performance indicators and, where feasible, quantitative performance measures are also recommended

External review recommended; early involvement encouraged

Becoming a Green Bond Issuer

External review providers

- It is recommended that issuers appoint an external review provider to confirm the alignment of their Bond with the four core components of the Principles
- Independent external reviews may vary in scope and may address a Green, Social or Sustainability Bond Framework, an individual Green, Social or Sustainability Bond issue, the underlying assets and/or procedures
- External reviews can be grouped into the following categories:
 - A. Second Party Opinion**
 - Assessment of the issuer’s overarching objectives, strategy, policy and/or processes relating to environmental sustainability
 - May also include an evaluation of the environmental features of the type of projects intended for the Use of Proceeds
 - B. Verification**
 - Assurance or attestation regarding an issuer’s internal tracking method for Use of Proceeds, allocation of funds from Green Bond proceeds, statement of environmental impact or alignment of reporting with the GBP
 - C. Certification**
 - Certification against a recognized external green standard or label (e.g. Climate Bonds Standard)
 - D. Scoring**
 - Evaluation or assessment by a qualified third party, such as specialized research providers or rating agencies, according to an established scoring/rating methodology

Examples of External Review Providers



Becoming a Green Bond Issuer

Eligible water projects

Water supply management & wastewater treatment				
	Asset type	Asset Specifics	Screening criteria	
Water Infrastructure	Water monitoring	Smart networks, early warning systems for storms, droughts, floods or dam failure, water quality or quantity monitoring processes		
	Water storage	Rainwater harvesting systems, storm water management systems, water distribution systems, infiltration ponds, aquifer storage, groundwater recharge systems, sewer systems, pumps, sand dams	No net GHG emissions are expected, and the issuer discloses the justification for this decision with supporting documentation OR Negative net GHG emissions are expected, and the issuer has estimated and delivered the GHG mitigation impact that will be delivered over the operational lifetime of the project or asset	
	Water treatment	Drinking water treatment, desalination plants, water recycling systems, wastewater treatment facilities, manure and slurry treatment facilities Ecological retention system, current force reduction mechanisms		
	Water distribution	Rainwater harvesting systems, gravity fed canal systems, pumped canal or water distribution systems, terracing systems, drip, flood and pivot irrigation systems		
	Water defences	Surge barriers, pumping stations, levees, gates		
	Nature based solutions	Water storage from aquatic ecosystems, aquifer storage, snowpack runoff, groundwater recharge systems, riparian wetlands		No net GHG emissions are expected, and the issuer discloses the justification for this decision with supporting documentation OR Negative net GHG emissions are expected, and the issuer has estimated and delivered the GHG mitigation impact that will be delivered over the operational lifetime of the project or asset
		Flood defences by ecological retention, restoration of riparian wetlands, relocation of assets		
		Drought defences by aquifer storage, recharge zone management, wetland management		
		Water treatment by natural filtration systems, forest and fire management		
		Stormwater management by permeable surfaces, erosion control systems, evapotranspiration systems		

Becoming a Green Bond Issuer

Becoming an issuer: a step by step roadmap

	Process	Description	Details	Estimated Cost & Timing
Pre-issuance	1 Identify eligible projects	<ul style="list-style-type: none"> Identify environmental and/or social projects that would qualify per the GBP/SBP 	<ul style="list-style-type: none"> Sustainability teams can help identify eligible projects 	<ul style="list-style-type: none"> N/A (indirect salaries)
	2 Establish a Framework	<ul style="list-style-type: none"> Establish a Framework describing the process for Green, Social or Sustainability Bond issuance and reporting 	<ul style="list-style-type: none"> It is recommended that issuers articulate how the issuance supports the organization's broader sustainability strategy and objectives 	<ul style="list-style-type: none"> N/A (indirect salaries)
	3 Obtain a Second Party Opinion (SPO)	<ul style="list-style-type: none"> Most issuers hire an independent external reviewer to provide an opinion on the alignment of their Framework with the GBP/SBP Examples of SPO providers include Sustainalytics, CICERO, and DNV GL 	<ul style="list-style-type: none"> Market Practice: most issuers obtain an SPO on their Framework Best Practice: Some issuers also get their individual bond issue certified to a market standard like the Climate Bonds Standard 	<ul style="list-style-type: none"> C\$15,000-\$25,000 3-4 weeks depending on the scope and complexity of the framework and issuer's responsiveness
	4 Introduce the Framework to investors	<ul style="list-style-type: none"> Most first time issuers would undertake marketing to introduce their Framework to investors At minimum, RBC recommends an investor call in the week leading up to the initial offering 	<ul style="list-style-type: none"> This can be a great way to test a draft Framework and solicit feedback from investors without making a commitment to issue Also an opportunity to communicate broader sustainability strategy and objectives to investors 	Fixed income roadshow: <ul style="list-style-type: none"> National Call (C\$1,000-\$2,000) Full Roadshow (C\$10,000-25,000)
Post-issuance	5 Manage the proceeds	<ul style="list-style-type: none"> Segregation and tracking of funds deployed post issuance 	<ul style="list-style-type: none"> Market Practice: Funnel through existing accounts (with reporting to track proceeds) Best Practice: Full segregation of proceeds in separate bank account(s) 	<ul style="list-style-type: none"> N/A (indirect salaries, depends on approach) Ongoing
	6 Report annually	<ul style="list-style-type: none"> Issuers are expected to report annually on the allocation of proceeds and, where feasible, the environmental and/or social impacts associated with the projects financed 	<ul style="list-style-type: none"> Market practice: report annually until capital has been fully allocated Best practice: report annually through maturity of the bond Can be incorporated into annual sustainability reporting cycle 	<ul style="list-style-type: none"> N/A (indirect salaries)
	7 Obtain annual assurance	<ul style="list-style-type: none"> Many issuers hire an external independent auditor to provide assurance on the allocation of bond proceeds 	<ul style="list-style-type: none"> Cost depends on scope of assurance (i.e. allocation of proceeds only vs. allocation and impact measurement; number of KPIs to be verified; new engagement vs. part of existing engagement with auditor, etc.) 	<ul style="list-style-type: none"> C\$5,000-\$40,000 3-6 weeks depending on the preparedness of the issuer

Becoming a Green Bond Issuer

Benefits to issuers

1	Investor diversification	<ul style="list-style-type: none">▪ Investor demand for Green Bonds is strong▪ Provides issuers with the ability to access new pools of capital by adding new ESG/SRI focused investors to their investor base and/or unlocking new pockets of capital from existing investors
2	Helps provide access to capital for sustainability initiatives at efficient levels	<ul style="list-style-type: none">▪ Provides much needed capital for sustainability-related projects▪ Potential for lower cost of funding 0-5bps inside of conventional bond pricing▪ Flexible sizing available – no difference compared to a conventional bond
3	Green, Social and Sustainability Bonds are just like regular bonds but with a dedicated use of proceeds	<ul style="list-style-type: none">▪ Execution is the same<ul style="list-style-type: none">– Relatively easy sustainable finance product to structure given the familiar issuance process▪ Note: there are additional requirements for Green Bonds, including identifying eligible assets, establishing a Framework, obtaining an external review(s), and annual reporting commitments
4	Disclosure requirements help communicate the issuer's sustainability strategy and objectives	<ul style="list-style-type: none">▪ Investors increasingly require greater levels of transparency from issuers▪ Green Bond Frameworks allow issuers to highlight the environmentally and socially beneficial initiatives that will be financed by bond proceeds, while also providing an opportunity to highlight their key sustainability goals and objectives▪ Alignment with the Green Bond Principles can help issuers tailor their sustainability story to the investor audience
5	Enhances internal integration between Finance and Sustainability departments	<ul style="list-style-type: none">▪ Finance departments have the opportunity to attract new investors and gain insight into ESG risks and opportunities▪ Sustainability departments can improve their understanding of investor perspectives to more clearly communicate the financial value of their sustainability efforts

Appendix: RBC Credentials

Section III



Capital
Markets

Green Bond Product Experts

The RBC team is comprised of seasoned and experienced professionals with expertise in the Green Bond market



Sarah Thompson
Director, Sustainable Finance
RBC Capital Markets

- As part of the Sustainable Finance Group, Sarah works closely with corporate and institutional clients globally who view Environmental, Social and Governance (ESG) factors as important considerations in their strategic planning and investment decision-making process.
- Sarah joined RBC in 2011 as the bank's first Green IT Manager. In 2013, she moved to RBC's Corporate Sustainability Team to oversee enterprise-wide operational footprint reduction initiatives, produce ESG disclosure and support business units with the development of sustainable financial products and services.
- Sarah partnered with RBC's Corporate Treasury Group to establish RBC's Green Bond Program. The bank issued its inaugural Green Bond in April 2019.
- Sarah represents RBC Capital Markets on the ICMA Green and Social Bond Principles Advisory Council and ICMA Climate Transition Finance Working Group. She is also a Vice Chair of the CSA Group Green & Transition Finance Technical Committee.
- Sarah holds a Bachelor of Commerce in Economics from McGill University and an MBA in Sustainability from York University's Schulich School of Business.



Mansoor Khan
Director, Government Finance
RBC Capital Markets

- Mansoor joined RBC in 2011
- As Director, Government Finance in Debt Capital Markets, he covers Canadian provincial, crown, and municipal clients across Canada
- Prior to joining RBC, Mansoor worked at a U.S. bank in New York in structured product sales and Private Placements
- Mansoor leads Green Bond underwriting activities at RBC and has been closely involved in bringing several new issuers to the Green Bond market, including Ontario, EDC, CPPIB, Ottawa, Toronto, Vancouver and TransLink
- Mansoor holds a Bachelor in Mathematics from University of Waterloo, Bachelor in Business Administration from Wilfrid Laurier University, and received the Chartered Financial Analyst designation

RBC Capital Markets' Commitment to Sustainable Finance

Proven Environmental, Social and Governance (ESG) Capabilities with Global Reach

RBC Capital Markets Sustainable Finance Group

Creation of a Focused Team of Experienced Professionals

- Global cross-platform team has a unique skill set that integrates Capital Markets, Corporate Sustainability and Government Policy experience
- Differentiated approach works in collaboration with partners in Investment and Corporate Banking, as well Global Markets, to deliver bespoke advice and differentiated solutions to our clients
- Member of SASB Advisory Council, ICMA GBP Advisory Council, ICMA Climate Transition Finance Working Group, Vice Chair of Canadian Transition Finance Taxonomy Group

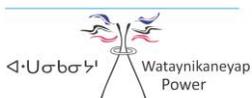
Enterprise Leadership & Focus on Sustainability

Memberships, Ratings, Recognitions



Overall ESG Composite Index¹ **“81%”**

RBC's Commitment: \$100BN in Sustainable Financing by 2025

 <p>CAD 680,000,000 Transmission line construction financing for remote First Nations communities</p> <p>Senior Bank Administrative Agent, Collateral Agent, Co-Lead Arranger and Joint Bookrunner October 2019</p>	 <p>USD 250,000,000 Green Preferred Stock Offering</p> <p>Joint Active Bookrunner August 2019</p>	 <p>AUD 1,400,000,000 Syndicated Sustainability Linked Loan</p> <p>Lead Arranger May 2019</p>	 <p>CAD 750,000,000 Sustainability Bond</p> <p>Joint Bookrunner August 2019</p>	 <p>GBP 375,000,000 Equity Placing / Common Shares</p> <p>Sole Bookrunner May 2019</p>	 <p>USD 10,576,834 Federal, State, and Solar Tax Credit Equity</p> <p>Tax Credit Investor and Syndicator December 2019</p>
<ul style="list-style-type: none"> Connecting 17 remote communities to the main electricity grid for the first time, eliminating reliance on unsustainable diesel generation 	<ul style="list-style-type: none"> Proceeds of the offering will be used to finance eligible Green Projects, making it the first green preferred stock offering in history 	<ul style="list-style-type: none"> The first syndicated SLL in Australia, the first syndicated airport SLL in APAC and the largest syndicated airport SLL globally to date 	<ul style="list-style-type: none"> Represents SLF's inaugural Sustainability Bond and the first issuance of a Sustainability Bond by a life insurance company globally 	<ul style="list-style-type: none"> The biggest equity capital raise by a European renewable infrastructure fund to date 	<ul style="list-style-type: none"> Federal, state, and solar tax credit equity for the rehabilitation and preservation of 38 units of affordable housing on tribal land

RBC's Inaugural Green Bond

€500 million 5-year Senior Notes



€500 million

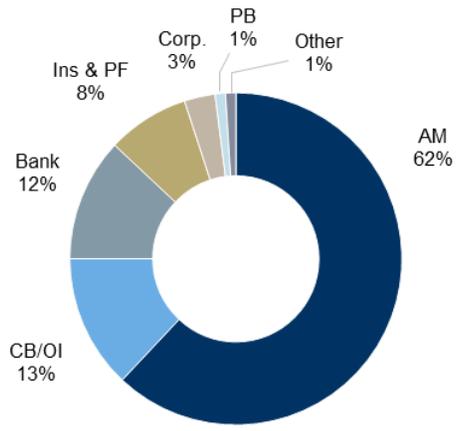
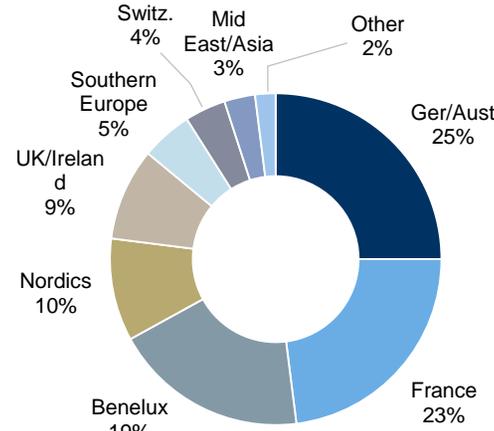
MS+33bps
Due 2024
A2/A/AA



Joint Bookrunner
April 2019

Issue Highlights

- On April 23, 2019, Royal Bank of Canada (RBC) announced a mandate for a new 5-year EUR Green Senior Note offering, RBC's first Green Bond globally and first EUR senior benchmark in over three years. The announcement followed the release of RBC's Green Bond Framework and a Second Party Opinion from Sustainalytics
- Following a positive response and strong IOIs from key investors a EUR500m transaction was announced on April 24, 2019
- Books grew swiftly from the outset. There was minimal price sensitivity and final terms were announced with the EUR500m 5-year transaction pricing at MS+33 (the tight end of guidance). Books closed unchanged at over EUR3bn, illustrating the high quality and strong investor demand for the offering
- The transaction succeeded in establishing RBC in EUR as the tightest trading EUR bail-in or TLAC bond, a new "best-in-class", and achieved a c.5bps "Green premium" - one of the clearest and strongest results for a Green Bond versus vanilla senior issuance
- The orderbook was extremely granular with over 190 accounts in the final book, with allocations split broadly across geographies. Asset Managers drove demand representing over 60% of orders.
- The reoffer level of MS+33bps represented a zero new issue concession and provided the issuer a material 7-10bps saving vs. alternative currency markets on an indicative after swap basis for bail-in eligible debt as well as significant diversification to both European and green investors
- The bonds performed well on the break, underscoring the high quality and depth of the order book

Final Terms		Distribution by Investor Type	Distribution by Geography
Issuer:	Royal Bank of Canada	 <p>Source: Bookrunners</p>	 <p>Source: Bookrunners</p>
Issue Ratings (Exp):	A2/A/AA (M/S&P/F)		
Instrument:	Senior Unsecured Green Fixed Rate Notes		
Format:	Regulation S Bearer Notes, NGN (not ECB eligible), TEFRA D applicable. Not Rule 144a eligible		
Size:	EUR 500mm		
Coupon:	0.25% Fixed, Annual ACT/ACT ICMA		
Reoffer:	MS+33bps / 0.356% / 99.476		
Benchmark:	OBL 0% 04/05/24 #179		
Launch Date:	24 Apr 2019		
Settlement Date:	2 May 2019		
Maturity Date:	2 May 2024		
RBC Role:	Active Bookrunner		

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