Category
Debt

Geography/ Location
BC, NB, NS, ON, QC

Municipality Size
Large

Tier
Enabling

Constraints
Feasibility; Complexity

Administrative Capacity Required
High

Fiscal Tool Brief: Green or Climate Bonds

Local Governments for Sustainability
Les gouvernements locaux pour le développement durable
CANADA

Green or climate bonds help municipalities raise capital specifically for environmentally beneficial projects, such as clean energy, low-carbon transportation, and climate-resilient infrastructure.

Municipal bonds are a common tool used by Canadian municipalities to raise money for major infrastructure projects such as water systems, transit lines, roads, bridges and stormwater management among others. These bonds allow municipalities to borrow funds from investors and pay them back over time, usually at a lower interest rate because municipalities tend to be low-risk borrowers. Municipalities are not allowed to borrow money to cover operating deficits, but they can borrow to fund capital projects that improve public services and infrastructure. Larger cities like Toronto, Ottawa, and Vancouver often issue their own bonds directly in the capital markets. Smaller municipalities usually access loans through pooled arrangements managed by provincial entities like the Municipal Finance Authority in British Columbia (MFABC), the Nova Scotia Municipal Finance Corp (NSMFC), the New Brunswick Municipal Finance Corp (NBMFC), or Infrastructure Ontario (IO) to mention a few. The funding requirements can vary from approximately C$50 million a year for smaller municipalities to C$2 billion in an active year for larger borrowers.[1,2] As municipalities look to address not only infrastructure renewal but also climate and environmental priorities, green bonds have emerged as a targeted financing option within the broader municipal debt landscape.

Green Bonds are a type of debt instrument issued by governments, municipalities, or corporations to raise funds specifically for projects that deliver environmental benefits. These bonds are part of the broader sustainable finance landscape and are designed to support initiatives such as renewable energy development (solar, wind), energy efficiency upgrades, clean transportation, wastewater and stormwater upgrades, flood protection, climate

resilience, amongst others. Unlike traditional bonds, the proceeds from green bonds are designated exclusively for "green" or "sustainable" projects, and issuers are expected to provide transparency on how the funds are used and the environmental impacts achieved. Climate bonds are essentially the same and are often used interchangeably but emphasize climate-specific outcomes like GHG reduction or climate change adaptation.

Examples

Green and Climate Bonds are increasingly being used by Canadian municipalities to fund climate and infrastructure projects. Ottawa (ON) became the first Canadian municipality to issue a Green Bond in 2017 and has since issued five Green Bonds totaling C$1.027 billion.[3] A major focus of Ottawa's green bond proceeds has been the expansion of its Light Rail Transit (LRT) system, a key project for reducing transportation-related emissions and improving transit accessibility. Other funded projects include areas such as energy-efficient municipal buildings and stormwater upgrades. Toronto (ON) issued its first green bond in 2018 to help finance transformative climate action projects, and since then raised $1.38 billion with a total of seven bonds issued to date.[4] Initiatives funded through green bonds in 2023, included renewable thermal energy systems, cycling infrastructure, and capacity improvements at the Yonge-Bloor transit hub.[5] Vancouver (BC) introduced its Green Bond Program in 2018, issuing $85 million in bonds maturing in 2028 to support climate resilience and sustainability initiatives. Proceeds have been allocated to projects focusing on green redevelopment of Roddan Lodge, affordable housing and upgrades to sewer and water mains to improve flood resilience.

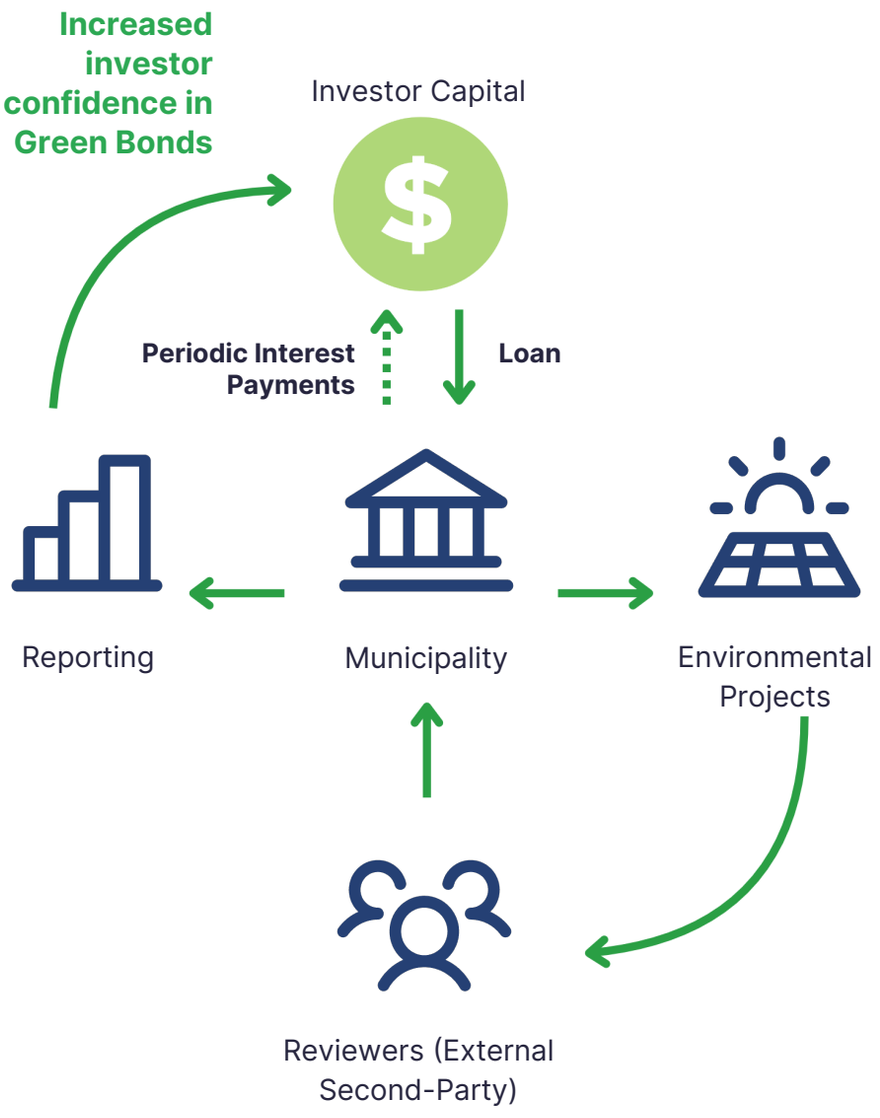

Figure 1. Visual representation of how Green and Climate Bonds work

Relevance to Advancing Adaptation

Green bonds enable municipalities to raise upfront capital specifically for projects with environmental benefits, making them a valuable tool for financing large-scale adaptation initiatives without immediately impacting general revenue or raising taxes. Since proceeds must be allocated to eligible green projects, municipalities can use green bonds to target adaptation investments such as flood protection infrastructure, cooling systems for heat-prone areas, or resilient transit upgrades. For example, a coastal municipality facing increased storm surge and sea level rise might issue a $100 million green bond to fund a multi-phase shoreline adaptation project. This could include elevating critical roads, installing modular sea walls, and retrofitting stormwater outflows to prevent backflow flooding. These investments reduce the risk of infrastructure failure during extreme weather events while also supporting long-term economic stability in vulnerable districts. Since projects funded by green bonds often improve public health and reduce climate risk, they can also attract strong investor interest. Furthermore, by issuing green bonds under a recognized framework with clear reporting and third-party validation, municipalities can demonstrate climate leadership and build confidence in their long-term resilience strategies.

Accessibility

Green bonds are available to municipal governments in Canada mainly through two pathways: direct issuance (for large cities) or pooled borrowing (for smaller communities). At the municipal level, only a small number of large cities such as Toronto, Ottawa, and Vancouver have issued green bonds to date. Access is generally limited to jurisdictions with strong credit ratings, established capital markets experience, and sufficient administrative capacity to develop a green bond framework, manage proceeds, and report on outcomes.[6] For smaller municipalities, green bonds remain less commonly used due to the complexity of issuance and ongoing reporting requirements. They typically do not have the capacity, market presence, or legal authority to issue independently. Instead, they rely on pooled programs such as those offered by the Municipal Finance Authority of BC (MFABC). Similar pooled borrowing structures exist in Nova Scotia (NSMFC), New Brunswick (NBMFC), and through Infrastructure Ontario (IO). Sometimes, other concerns such as operational and compliance demands may lead a municipality to reconsider issuing green bonds. For example, Montreal explored the idea of issuing green bonds, but after a thorough internal analysis, the City ultimately decided not to pursue this path for several reasons, including the interest rates being equivalent to those of regular bonds, the monitoring and reporting requirements, and the legal and reputational risks. Therefore, Montreal finances its adaptation-related activities through standard bond issuance for its capital investment projects and made a policy to allocate approximately 10–15% of its capital investment budget to adaptation initiatives to maintain its commitment to climate adaptation.

Feasibility

Green bonds are increasingly recognized as a viable financial mechanism for funding “green” projects in municipalities. However, their feasibility varies across provinces and municipalities, influenced by factors such as political commitment, economic capacity, and administrative infrastructure. In Ontario, the feasibility of green

bonds is notably high. The City of Toronto, has successfully issued multiple green bonds since 2018, raising substantial funds to finance climate action projects.[7] This is an existing strong political support for environmental initiatives, a robust economy, and well-established administrative systems capable of managing complex financial instruments. In British Columbia all local governments and regional districts, except the City of Vancouver, borrow through the MFABC, a legislated bond-issuing body that aggregates loans into sustainable bond issuances on their behalf.[8] The City of Vancouver launched its Green Bond Program[9] in 2018 to support projects aligned with its climate mitigation and adaptation plans at the time, the Renewable City Strategy and the Climate Change Adaptation Strategy respectively.[10] The province's commitment to sustainability, combined with Vancouver's strong credit rating and financial management, enhances the feasibility of green bond issuance. In contrast, provinces like Nova Scotia and Quebec have shown slightly less municipal-level activity in green bond issuance, mainly due to the lack of independent access to capital markets for bond issuance. Interest in green bonds are growing, but their use remains concentrated in larger, well-resourced municipalities with the scale to justify the transaction costs such as preparing a green bond framework, hiring external reviewers, legal and financial advisory services, and ongoing reporting.[11]

Risk

There is a risk that projects financed by green bonds may not fully deliver on their promised environmental outcomes or may not be as "green" as publicly portrayed. If investors or the public perceive that funds are used for projects lacking genuine environmental benefit, or if reporting is unclear or inconsistent, municipalities may face reputational damage. This challenge is even greater for climate adaptation projects, since it is harder to measure avoided damages, such as reduced flood risk or fewer heat-related illnesses, compared to tracking greenhouse gas reductions. This can create uncertainty about how to define and report adaptation outcomes. However, new tools such as resilience taxonomies, including the Climate Bonds Initiative's 2025 framework, are helping set clearer standards and improve transparency, which supports investor confidence in adaptation-focused green bonds. The Green Bond Framework acknowledges this by requiring independent second-party reviewers such as Sustainalytics in Toronto and Ottawa, or the Centre for International Climate Research (CICERO) in Québec.[12] Moreover, green bonds require specialized expertise to evaluate, report, and verify eligible projects annually. Municipalities with limited administrative capacity may struggle to meet these demands, risking non-compliance with transparency and impact reporting commitments. The Framework requires both allocation and environmental impact reporting until all proceeds are spent, which may strain smaller municipalities without dedicated sustainability finance teams.[13] Additionally, if projects do not meet expectations or if reporting is poor, investors may lose confidence, which could lead to a lower credit rating. This downgrade would make future borrowing more expensive and could reduce the municipality's ability to raise funds.

Scalability

Green bonds offer a flexible and potentially scalable financial mechanism for large municipalities to support long-term climate action and adaptation investments. Municipalities like Toronto, Ottawa, and Vancouver have successfully issued multiple green bonds over time, raising hundreds of millions to fund clean transportation, energy-efficient buildings, and climate-resilient infrastructure under a consistent framework. However, the ability to scale green bonds is constrained by municipal debt limits set under provincial legislation, which cap how much a municipality can borrow relative to its revenue base.[14] These debt ceilings are designed to protect taxpayers but can restrict additional green bond issuances, particularly if a municipality already carries significant capital debt. For smaller or rural municipalities, scalability is even more challenging due to tighter borrowing capacity, less access to capital markets, and more limited administrative resources.

Evaluation Matrix

Scoring: High = +1 | Medium = 0 | Low = –1

Criterion	Rating	Score	Key Evidence	Assessment
Effectiveness & Performance	High	+1	Earmarked funding for environmental projects	Directly finances adaptation with strong targeting through eligibility and reporting frameworks.
Economic Efficiency	Medium	0	Additional reporting and verification costs	Accesses capital efficiently but introduces added compliance and transaction costs.
Equity & Fairness	Medium	0	Broad tax-backed repayment	Benefits are diffuse with limited direct alignment between payers and beneficiaries.
Political Acceptability	High	+1	Strong climate alignment and transparency	High public and political support due to environmental branding and accountability.
Feasibility (Admin/Legal)	Medium	0	Requires specialized expertise and strong credit	High public and political support due to environmental branding and accountability.
Coherence (Portfolio Fit)	High	+1	Builds on existing debt frameworks	Integrates well with municipal finance systems and complements climate finance strategies.

Best Use Context

Green or climate bonds are most effective in large, well-resourced municipalities with established capital programs and climate strategies. They perform best where there is a clear pipeline of eligible projects and sufficient institutional capacity to meet reporting and verification requirements.

Context Factor	Relevance	Notes
Municipal Size	High	Primarily suited to large municipalities with capital market access.
Administrative Capacity Required	High	Requires technical, financial, and reporting expertise.
Development Pressure	Low	Not dependent on growth; linked to capital planning and climate priorities.
Climate Risk Targeting	High	Strong ability to target specific adaptation and mitigation investments.
Fiscal Flexibility Required	High	Requires debt capacity and stable revenues.

Recommended Citation

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This brief is part of a larger catalogue. The Catalogue of Fiscal Tools to Advance Adaptation examines how municipalities can use and optimize existing fiscal tools to support climate adaptation and climate-resilient infrastructure. Each brief included in this catalogue explores a specific tool, assesses its strengths and limitations through a common analytical framework, and highlights examples of how it has been applied in practice.

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