



Climate Finance in Ontario: Can Debt Finance Be Green?

Gustavo Carvalho

Postdoctoral Fellow

Institute on Municipal Finance and Governance

June 21, 2017



@imfgtoronto | #IMFGtalks

IMFG
Institute on Municipal
Finance & Governance

at the

MUNK
SCHOOL
OF
GLOBAL
AFFAIRS



UNIVERSITY OF
TORONTO

Overview

What private financing tools can municipalities use for funding infrastructure projects that tackle climate change?

- Municipalities are crucial stakeholders
- Private financing is a valid tool and can be “green”, but markets can fail and interests can diverge
- Climate financing is about using private finance in the public benefit

Presentation Outline

1. What is climate financing?
2. What is the role of municipalities in climate finance? What are the challenges they face?
3. What is the role of the private sector?
4. What is debt financing? Can it be “green”?
5. Three climate financing instruments. Can they be implemented in Ontario?
6. Conclusions

Scope

This presentation does **not** cover:

- policy initiatives that depend on the action of **higher levels of government** (carbon taxes, cap-and-trade or emission-trade systems, and removal of subsidies to fossil fuels)
- programs targeting **individual households or businesses**, such as Home Energy Loan Program (HELP) (in Toronto), or “in-bill” financing
- **land-based finance instruments**, even if they involve debt financing (TIF bonds)

1. What is climate finance?

- **Climate finance:** provision of financing for (infrastructure) projects that aim at tackling the phenomenon of climate change
- **Resilience:** the ability of a system to resist, absorb, and recover from the impact of a hazard in a timely and efficient manner (physically, socially, and financially)

Climate mitigation versus adaptation

- **Climate mitigation:** projects and actions that aim at reducing GHG emissions
 - E.g.: public transit, electrification of transportation systems, energy efficiency retrofits, provision of energy from renewable sources (wind, solar)
- **Climate adaptation:** projects that aim at increasing resilience to climate change
 - E.g.: stormwater runoff systems and early warning systems

77% of the total available finance goes toward mitigation projects (OECD)

2. Why should municipalities care?

1. Stakeholders: urban areas are major sources of environmental externalities (GHG emissions, waste, urbanization)

- Cities consume 70-80% of the world's energy and emit 70-75% of the world's GHGs (CCFLA, CDP)

2. Impact: high costs (and opportunity costs) from extreme weather events

- Higher density, more economic activity and taxpayer base

3. Co-benefits: capital investments can have benefits beyond the environment

- E.g.: ameliorating congestion, decreasing health hazards, creating jobs

4. Public presence: counterbalance to market failures and natural monopolies

- Short vs long-term horizons
- Profit motivations vs community needs

The Global Investment Gap

- Estimates of climate investment needs (2° C):
 - Globally, US\$ 1 trillion annually until 2020, US\$ 2-2.5 trillion annually in 2021-2030, US\$ 4.5 trillion annually in 2031-2035 (EC/OECD)
- Estimates of disaster recovery needs:
 - Annual costs worldwide between US\$ 250 and 300 billion (UNEP)
- “Regular” infrastructure needs:
 - US\$ 3.6 trillion in the US by 2020 (ASCE), CAD 29 billion in Toronto.

The context for municipal funding

Why do we need to look for new ways to pay for climate projects?

- Traditional municipal revenue sources are insufficient to cover current needs and capital investments for climate change projects
- Budget constraints at the federal and provincial levels make fiscal transfers for these projects more difficult to attain
- Innovative funding solutions have been slow to catch on (e.g. carbon tax, vehicle registration tax)

3. What is the role of the private sector?

Blended finance: use of public funds to mobilize private capital

Advantages

- Mitigates market failures by mobilizing and leveraging private finance
- Taps a large reserve of private capital
- Some municipalities already have experience with debt financing and blended finance (Toronto HELP)

Debt financing is a crucial tool in blended finance

4. What is debt financing?

Debt financing: financing of projects through borrowing

- **Debentures/Bonds:** long term (more than 1 year) debt obligations issued to the public in the form of securities
- **General obligation bonds:** backed by the full credit and assets of an issuer
- **Revenue bonds:** backed by a specific revenue stream

Pros and Cons of debt financing

Pros	Cons
Easier than raising taxes.	Not as transparent as raising revenue through taxation.
Low interest rates currently prevailing in capital markets.	The interests of the creditors may not align with those of the broader community.
Fairer from an intergenerational point of view.	Current taxpayers also benefit from infrastructure investment.
Aligns spending and repayment requirements with the asset's lifecycle.	Taxes and fees may be better at enforcing fiscal discipline.

Ontario – Borrowing regulations

Legal limits to all municipalities (Toronto and York are special cases):

- For “municipal purposes” only
- Ontario municipalities can issue general obligation bonds; only Toronto can issue revenue bonds
- Long-term borrowing restricted to capital investments
- Fixed rate borrowing is the rule; variable rate and foreign currency borrowing restricted
- “Annual Repayment Limit” (ARL): 25% of own-source revenues, net of financial payments;
 - Special Cases: York can add 80% of the revenue with development charges to ARL (until 2021); Toronto has no ARL – “soft” limit of 15% of property tax revenues

5. Three climate financing instruments

1. Green Bonds

2. Environmental Impact Bonds

3. Green Banks

Criteria for judging the tools' relevance for Ontario:

- **Compliance:** do Ontario regulations allow the use of this instrument by municipalities?
- **Usefulness:** can this instrument leverage private investment? Does it deliver on its promises?
- **Accountability:** does this instrument foster transparency and accountability?

A. Green Bonds

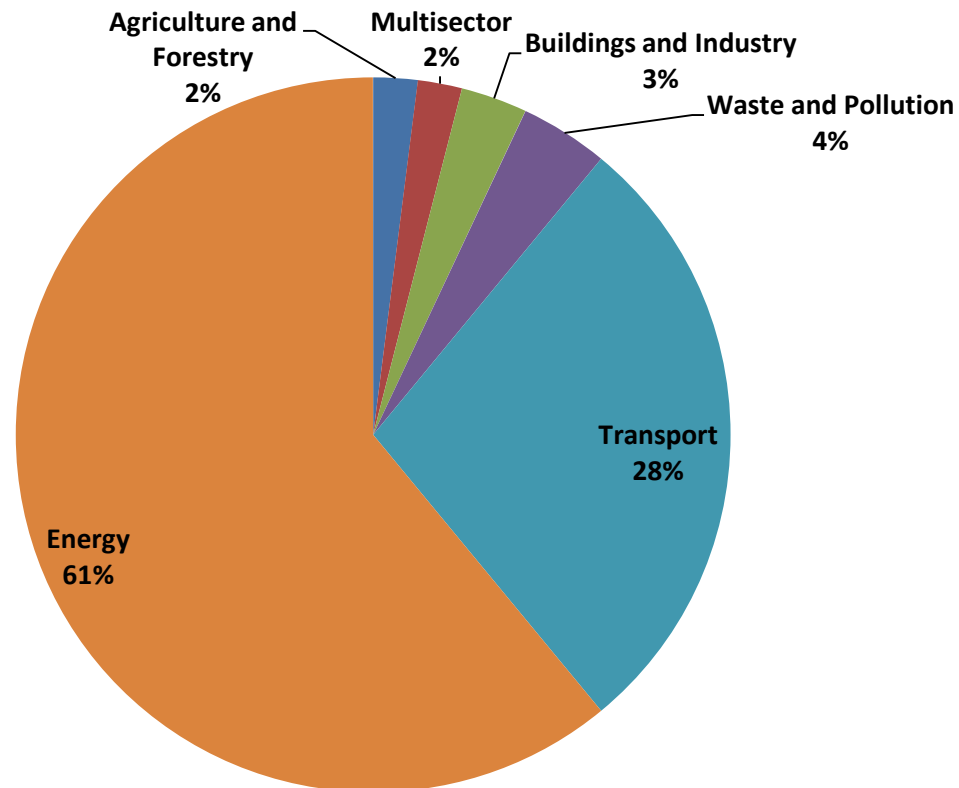
Green Bonds used for the financing of climate adaptation and climate mitigation projects:

- Can be either general obligation or revenue bonds
- Can be either “labelled” (i.e. expressly labelled as green, subject to standards) or “climate-aligned” (i.e. underlying projects are climate-aligned)
- Market-based verification with two main standards: Green Bond Principles, Climate Bonds Standard

The green bond market

- International pioneers: European Investment Bank in 2007, World Bank in 2008
- First government issue: French regions in 2012
- First labelled Canadian green bonds in 2014 (Ontario, TD Bank, EDC); no green bonds issued by Canadian municipalities
- International market is ~US\$ 600 billion (labelled and aligned); Canadian market is ~CAD\$ 33 billion (CAD\$ 3 billion in labelled bonds)

Green Bonds, Canada – Use of Proceeds (2016)



Source: Climate Bonds Initiative

The green bond market

- China became the biggest national green bond market in 2016 (estimate)
 - Market size, strong official support, weaker local green standards
- European market is dominated by the UK, France, Germany, and the Netherlands
 - Strong official support, political consensus
- The US is still (possibly) the biggest issuer
 - Lack of support and widespread skepticism about costs/benefits

Green Bonds, Pros & Cons

Pros	Cons
Taps into increased awareness of and demand for environmentally and socially responsible bonds.	Challenged by lack of standardization and difficult verification of the use of the proceeds.
Institutional investors have longer time horizons.	Smaller market overall. May lead to higher borrowing costs.
Provides “reputational” benefits for the issuer.	Reputational costs with “greenwashing”.
	Privileges proven technologies and projects with clear revenue streams.

Applicability – Green bonds

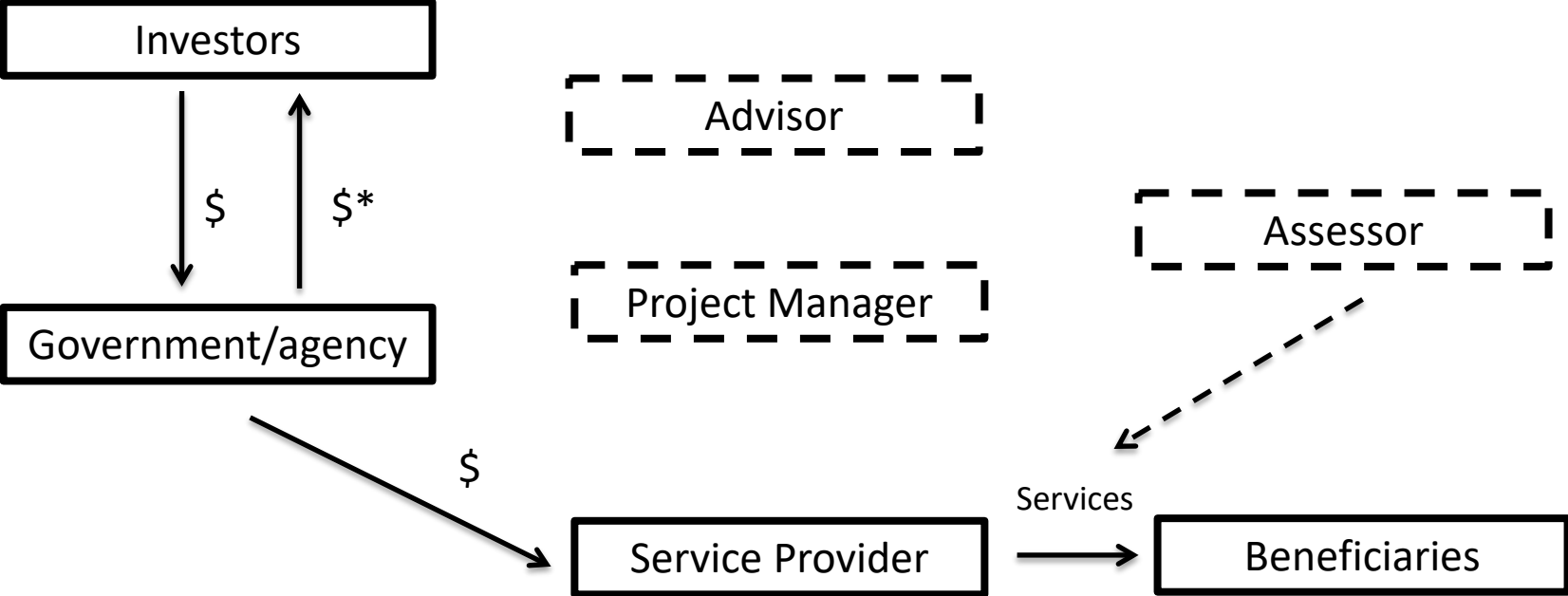
- **Compliance:** municipalities can issue green bonds under current regulations – although not revenue bonds (except for Toronto)
- **Usefulness:** can mobilize private investment, but capacity for leveraging depends on the nature of investors (public entities, pension funds, banks, investment funds?)
- **Accountability:** are relatively transparent and public officials are accountable, to a certain extent; verification makes them more transparent

B. Environmental Impact Bonds

Environmental impact bonds (EIBs) are an adaptation of social impact bonds (SIBs), which are contractual structures that include, but are not limited to, the issuance of bonds to investors

- First SIB launched in 2010. First EIB issued in 2016 by the DC Water and Sewer Authority
- “Pay-for-performance” or “pay-for-success”
- Structures may vary, but investors are repaid based on the success of the intervention being funded

Environmental Impact Bonds



Example: DC Water EIB

- Project: to build infrastructure to help manage stormwater runoff (US\$ 25 million par value)
- Issued by the DC Water and Sewer authority, with Goldman Sachs and the Calvert Foundation as investors
- US\$ 3.3 million payment dependent on runoff reduction (under a certain threshold, investors pay the amount to DC Water)

EIBs, Pros & Cons

Pros	Cons
Can align the interests of investors, local governments, and service providers.	May subordinate the public good and the interest of the beneficiaries to financial considerations and incentives.
Can tap into private capital, reducing public spending and transferring performance risk to private investors.	May be costly, and may not be financially attractive to investors.
Offers an alternative, and steadier, source of funds to NGOs.	Metrics can be controversial and the results, difficult to assess.
Promotes the use of proven interventions.	Focus on proven interventions and assessment metrics may stifle innovation and diffusion.

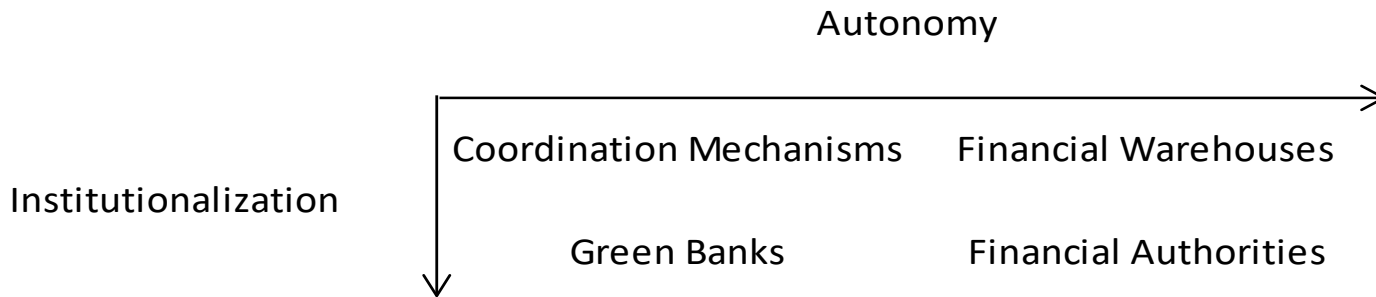
EIBs: Applicability in Ontario

- **Compliance:** may not be possible under current regulations (capital investments, fixed-rate limitations)
- **Usefulness:** can mobilize private investment, but leveraging depends on the returns offered. Scalability and applicability to adaptation projects is questionable
- **Accountability:** EIB structures can be opaque; many of the actors involved are not accountable to the public. Beneficiaries may have little or no say on methods/assessment

C. Green Banks

Green banks are financial aggregators that provide financing for green projects

- Financial aggregators: aggregate borrowing and financial services, with different degrees of autonomy and institutionalization



Green banks - examples

Ontario is exploring the creation of its own green bank.

- There are some green banks in the US (Connecticut, New York). They focus mostly on support for consumers and businesses (energy efficiency programs, investment).
- In the UK, the Green Investment Bank (GIB) was established in 2012.

Green banks - examples

What not to do (UK Green Investment Bank):

- Quasi-Public company, with limited sources of capital – initial £3 billion, not allowed to borrow
- Focus on sectors with well-established technologies (wind power, biofuels). Not focused on innovation, transit, or financial services (credit enhancements)
- Privatization – uncertain future.

Aggregators, Pros and Cons

Pros	Cons
May decrease borrowing costs and increase market access for smaller municipalities. Reduce transaction costs and attend to underserved sectors.	May compete with commercial banks and other lenders, such as infrastructure banks.
May reduce the risk of political interference in lending decisions.	If public, may be seen as “picking winners”. May also crowd-out private investors.
Can provide important financial services such as warehousing and credit enhancements.	If they follow industry/commercial lending practices, may not be as effective.
	May require regulatory change.

Green Banks – Applicability in Ontario

- **Compliance:** not clear if municipalities can/should create a financial institution
- **Usefulness:** can mobilize private investment, but can also compete with other sources of capital (private banks, Infrastructure Ontario)
- **Accountability:** more opaque than elected officials or city staff, but accountable depending on structure/oversight mechanisms; “technical expertise” may hinder political accountability

6. Conclusions

- Debt financing can be green, but smart use of blended financing and debt will be crucial for climate infrastructure investment
- Low-hanging fruit: green bonds
- Further study of innovative instruments such as EIBs will be important. Despite regulatory obstacles, they may prove useful in the future.
- Green banks provide important services, but they should be left to the provinces (or the federal government).

Q and A

Contact:

Gustavo Carvalho

[gustavo.carvalho at utoronto.ca](mailto:gustavo.carvalho@utoronto.ca)