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Green Bonds for a Green Economy:

Considerations for Ontario

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1. Background/ Introduction

IN OCTOBER 2013, Ontario Premier Kathleen Wynne announced her government's plan to issue green bonds. The Government of Ontario will be the first province in Canada to issue green bonds, but not the first government agency in Canada to do so.[1] Export Development Canada issued a green bond in January 2014, and TransLink, Metro Vancouver's regional transportation authority, has issued very similar bonds without adding the 'green' label. The Ontario government plans to use the bond proceeds for investment in "transit and other environmentally friendly infrastructure projects across the province."[2] At press time, the Government of Ontario had not released further details regarding the specific allocation of the bonds' proceeds.

The political promise behind green bonds is that they could raise money for infrastructure projects that help to 'green' the economy. A green economy is one that improves "human well-being and social equity, while significantly reducing environmental risks and ecological scarcities."[3] In more tangible terms, "a green economy can be thought of as one which [*sic*] is low carbon, resource efficient and socially inclusive."[4] Similarly, then, a green infrastructure is one that is low carbon, resource efficient and socially inclusive. Ontario's green bonds could help to green its infrastructure and push the economy toward an environmentally sustainable pathway. Yet these outcomes are not a given.

The purpose of this policy brief is fourfold. First, it explains how green bonds hold potential as policy tools for assisting the transition to a green economy. Second, it contributes to the body of knowledge on green bonds and provides a brief overview of green bonds issued elsewhere. Third, it identifies potential problems with Ontario's green bonds, which could undermine their potential. Fourth, it observes some steps that the Government of Ontario could take to make its green bond program a success for Ontarians and the environment.

2. The Promise of Green Bonds

AS POLICY TOOLS, green bonds hold potential in five ways. First, they could help to meet public goals that the market has not done. Specifically, they could help to reduce greenhouse (GHG) emissions. GHG emissions could help to meet public policy goals by explicitly addressing a severe market failure, and by and contributing to cleaner air and a more stable climate. As Nicholas Stern noted in 2007, climate change is "the greatest market failure the world has ever seen."[5] By raising money specifically to fund lower-carbon infrastructure projects, green bonds could potentially be useful policy tools for reducing GHG emissions.

Second, green bonds could raise money for public infrastructure projects that have long amortization horizons. This could help to overcome the problem of political and economic short-termism. *Table 1* shows examples of various ways in which green bond proceeds are allocated – many of these projects have long amortization horizons. Typically, investors make their investment decisions based primarily on anticipated quarterly and annual performance. Similarly, policymakers typically focus their agenda on policies that enhance re-electability. In other words, policymakers tend to focus their attention on the election cycle, which is typically four years or less. These propensities lead to investments and public policies that heavily favour short-term results. Yet large-scale infrastructure investments typically do not generate financial rewards in the short term. The prevalence

of short-term thinking constrains the scale of green infrastructure investment, whose financial benefits may not be apparent for several years or decades. Since green bonds can have maturities of ten, twenty, thirty, or more years, these debt instruments could enable issuers to raise capital for investments in large-scale green infrastructure projects whose benefits accrue over a longer time horizon and whose costs can be amortized over a lifetime. Thus green bonds could potentially help to overcome the problems of political and economic short-termism.

An important caveat, however, is that the successful completion of infrastructure projects is always subject to politics. So although green bonds could help to overcome the problem of short-term thinking, their potential to do so is not absolute.

Table 1 provides an overview of some of the ways that other green bond issuers have allocated proceeds. It is not a comprehensive overview; rather, it is a selection of recently issued green bonds that reflect the diverse characteristics that a green bond may have. Within this selection, maturities range from three to thirty years; interest rates range from .625% to 3.85%; and proceeds are allocated to a wide range of projects including clean tech development, fuel-switching, and making solar panels more accessible to household consumers.

Third, green bonds could be key devices for building a new, green economy, which could create jobs and subsequently increase tax revenues. A report by the Organization for Economic Cooperation and Development (OECD) explains the jobs potential of building a green economy: "Despite all of the uncertainty, it can confidently be predicted that the transition to a low-carbon and resource efficient economy will require a significant expansion of employment" not only in environment-specific sectors like renewable energy and waste management, but also across other, larger sectors like construction and manufacturing.[12] So by spearheading the shift to a green economy, green bonds could generate positive employment and macroeconomic effects.

Fourth, as noted above, green bonds could be tools for greening the economy. And greening the economy, even if it means incurring a moderate level of debt, is cheaper to do now than it will be in the future. As a UNEP report put it:

> The cheapest way to reduce CO_2 emissions is to ensure that new capital equipment is very efficient and powered by low-carbon sources. It will be enormously costly if the world misses this opportunity, builds inefficient infrastructure, and then has to renovate it.[13]

TABLE 1 Selection of Recent Green Bond Issues

Issuer	Date	Volume	Term	Rate	Allocation of proceeds
Massachusetts[6]	May 2013	USD $100m	20 yrs; 8 yr. call option	3.20% to 3.85%	Proceeds will be used for energy efficiency and environmental conservation projects. These include the Accelerated Energy Program, which aims to reduce energy consumption by 20–25% over 700 state sites, create 4,000 clean energy jobs and save the state approx. $43 million annually.
Hawaii[7]	TBD 2014	up to USD $200m, TBD	up to 30 yrs, TBD	TBD	Proceeds will be used to distribute Green Infrastructure Loans. These loans will be provided to businesses to lease or provide green infrastructure equipment (e.g. solar panels) at no upfront cost to electric utility customers. Customers repay the loans via on-bill repayment system using savings generated by reduced energy costs.
International Finance Corporation (IFC)[8]	Feb. 2013	US $1bn	3 yrs	0.625%	Proceeds will support projects to reduce GHG emissions. Examples include rehabilitating power plants and transmission facilities, installing solar and wind power, and providing funding for new technologies that result in significant reductions in emissions.
Électricité de France[9]	Nov. 2013	USD $1.9bn	7.5 yrs	2.25%	Proceeds will be used exclusively to finance new renewable energy projects.
European Bank for Reconstruction and Development (EBRD)[10]	Sep. 2013	USD $250m	4.5 yrs	1.75%	Proceeds provide financing for: solar installations and production of photovoltaic cells; energy efficiency gains in mass transport; geothermal and biomass facilities; rehabilitation of power and heating plants; new technologies that generate significant reductions in total GHG emissions, including smart distribution networks; fuel-switching from carbon-intensive to less carbon intensive fuels.
European Investment Bank (EIB)[11]	Jan. 2014	USD $384m	11 yrs`	1.625%	Proceeds will be used to cut GHG emissions, adapt to climate change, or to expand the use of renewable energy. The EIB uses EU environmental law and EU climate policy objectives to guide its project selection process. Proceeds support European climate policy objectives by investing in renewable technology and energy efficiency to meet 2020 targets.

Delayed action on greening the economy will be expensive not only due to: (1) the high cost of renovating infrastructure; but also because (2) delaying action will create a need for more drastic GHG emissions cuts in the future; and (3) as climate change progresses, governments will have to spend increasingly greater sums of money on disaster response. The recent Ontario ice storm, which federal Conservative MP Peter Braid attributed to climate change,[14] is expected to cost Ontario's municipalities up to $250 million in damages.[15] Since extreme weather events are expected to occur more frequently as the climate changes,[16] it simply makes good financial sense to mitigate climate change by investing in low-carbon, climate-resilient infra-

structure. Since the cost of greening the economy will only rise as action is delayed, it could be prudent to incur a moderate level of debt today, rather than incurring greater costs and potentially higher levels of debt in the future.

Fifth, green bonds could address the abundant demand for socially responsible, low-risk investment options. In finance, *oversubscription* refers to a scenario in which demand exceeds the total amount of an investment product that is available to buyers. For example, if investors commit a total of $1.5 million for a $1 million bond issue, then that bond is oversubscribed by 50%. Oversubscription was a common feature in the market for green bonds in 2013. In February, Kexim, The Export-Import Bank of Korea, issued a green bond that was 260% oversubscribed.[17] In June, the Government of Massachusetts issued a green bond that was 30% oversubscribed.[18] In November alone, the International Finance Corporation's USD $1 billion green bond issue was 50% oversubscribed;[19] Kommunalbanken, a Norwegian government agency, issued a bond that was 200% oversubscribed;[20] and Électricité de France, a French utility provider, issued a bond that was 200% oversubscribed.[21] Investors are showing enormous demand for socially responsible, low-risk investment products, and green bond issuers could leverage this demand to scale up socially responsible investment. But there is a potential downside to the oversubscription trend. This downside is explained in the next section.

3. Potential Problems With Ontario's Green Bonds

ALTHOUGH GREEN BONDS show tremendous promise, there are three potential problems with Ontario's green bonds that could jeopardize their potential.

1. The trend of oversubscription in the green bond market indicates a potential risk that could generate unnecessary costs for Ontario taxpayers.

As noted above, oversubscription indicates that a bond issuer encountered greater demand for its product than originally anticipated. Yet it also indicates that the bond issuer set the interest rate higher than necessary; the issuer could have lowered the rate and still met demand. In the context of a government-issued green bond, oversubscription signals that the government could have borrowed money at a lower cost to taxpayers. Given other green bond issuers' experience with oversubscription, oversubscription could be viewed as a potential risk that could generate unnecessary costs to taxpayers in Ontario. Realistically assessing demand and setting an appropriate interest rate could be key challenges for the Ontario government.

2. Although Ontario is marketing these bonds as "green," these securities look a lot like conventional transport bonds.

Although Ontario will be the first provincial government in Canada to issue bonds labeled as green, a quasi-governmental organization in British Columbia has issued similar bonds without the label. TransLink, Metro Vancouver's regional transportation authority, has made five bond issues since October 2010. Although TransLink has not published extensive information regarding the allocation of bond proceeds, the available evidence shows that there are similarities between the official descriptions of TransLink's bonds and Ontario's green bonds. For instance, TransLink's press release for its June 2011 bond issue states that $200 million was raised "to finance road and capital transit projects."[22] Similarly, TransLink's press release for its December 2013 bond issue states that $150 million was raised specifically "to finance capital transit projects."[23] Since the Ontario government has stated explicitly that its green bond proceeds will be used primarily to finance public transit projects, TransLink's descriptions of its bonds strongly resemble Ontario's descriptions of its green bonds. In other words, if we look past the 'green' label on Ontario's bonds, they are quite similar in appearance to TransLink's conventional bonds.

Although TransLink has not marketed its bonds as green, the organization has shown strong commitment to environmental sustainability. TransLink's annual sustainability reports are evidence of this commitment. These reports comply with the Global Reporting Initiative (GRI) Sustainability Reporting Framework G3 Guidelines, which outline how and what to report.[24] Both UNEP[25] and the United Nations Global Compact[26] have endorsed the GRI reporting framework. In addition, TransLink has implemented a carbon offset program, which received an award from the Canadian Urban Transit Association for being public transit's first North American carbon offset initiative.[27] In partnership with BC Transit, TransLink has sold and offset the equivalent of 18,862 tons of carbon emissions.[28]

Juxtapose TransLink with Metrolinx, the comparable organization in Ontario that oversees transportation systems in the Greater Toronto and Hamilton area. Metrolinx does not publish sustainability reports and it does not use the UN-approved GRI framework. Nor do its major affiliates — such as the Ontario Public Transit Association, GO Transit, and the Toronto Transit Commission. Moreover, neither Metrolinx nor its major affiliates have implemented a carbon offset program.

The point here is not to rebuke Ontario's public transit agencies. Rather, the point is to contrast the 'greenness' of Ontario's public transit with the 'greenness' of a comparable transit system that has issued bonds without a 'green' label. The evidence suggests that, unless Ontario's transit agencies make some big changes, TransLink's bonds, which are not labelled as green, could actually be greener than Ontario's green bonds. This raises the questions: *What is the difference between Ontario's green bonds and conventional transportation bonds? What makes Ontario's bonds green?*

3. The provincial government's use of ambiguous language regarding environmental aspects of the bonds may raise questions about its objectives.

A second potential problem with Ontario's green bonds is the provincial government's use of ambiguous language to describe environmental aspects of the bonds. Ontario's latest Economic Outlook explains that the bonds' proceeds will "be invested in transit and other environmentally friendly infrastructure projects."[29] To date, the Government of Ontario has not identified specifically what is meant by the term "environmentally friendly." The International Organization for Standardization (ISO) describes the term "environmentally friendly" as "vague" and "non-specific," and advises against its use because it could be scientifically inaccurate and/or confusing to consumers.[30] The provincial government's use of non-specific language to describe environmental aspects of the bonds could jeopardize the environmental performance of the projects that benefit from the bonds' proceeds. Moreover, the use of ambiguous language could raise questions about greenwashing.

4. Policy Considerations

AS EXPLAINED ABOVE, green bonds hold potential as policy tools for greening the economy. Yet their promise is not a given. This section observes some steps that the Government of Ontario may wish to consider to make its green bonds a success.

1. The Government of Ontario could strengthen its green bonds' environmental implications by taking steps to distinguish them from conventional transport bonds found in B.C. and elsewhere.

The provincial government could take steps to concretely distinguish its green bonds from conventional bonds. An example of such a step could be to advise public transit organizations to publish annual sustainability reports. Issuing sustainability reports with standardized reporting metrics, such as those outlined by the GRI, could help to improve the 'greenness' of Ontario's green bonds. Sustainability reports could facilitate measurement and assessment of public transit's environmental performance. Other sustainability-related practices, such as improving energy efficiency and enhancing water and waste management, could be worth considering.

2. By making job creation a priority in the early stages of allocating green bond proceeds, the Ontario government could win additional support for green bonds, which could enable

further green bond issues and green infrastructure investment.

Of course, not all green infrastructure projects will generate significant growth and employment; such is the nature of public goods. Yet showcasing some of green bonds' potential economic benefits, such as job creation, in the early stages of project selection could enhance their legitimacy and cultivate further public support. Since public support will undoubtedly influence the probability and scale of future green bond issues and green infrastructure investment, taking steps now to showcase economic benefits could improve the government's ability to expand its green bonds program and its commitment to green infrastructure. If green bonds cultivate broad support as policy tools, then the provincial government may be better able to fund a mixture of infrastructure projects with varying growth and employment potentials.

3. If surveys indicate excess demand for Ontario's green bonds, the provincial government could tap into that additional demand to expand its commitment to green infrastructure.

Undoubtedly, the Government of Ontario will conduct a rigorous survey of demand before it issues the green bonds. If, however, the survey indicates a significant excess of demand, then the government could consider expanding both the green bond issue and its commitment to green infrastructure development. Since well-designed infrastructure spending has been shown to have positive multiplier effects, establishing and expanding Ontario's green infrastructure could be good for both the environment and Ontario's economy.[31] [32] [33]

There are myriad ways in which the provincial government could expand its commitment to green infrastructure, as shown in *Table 1*. For instance, Hawaii is using its green bond proceeds to distribute Green Infrastructure Loans. These loans are granted to businesses to provide solar panels at no upfront cost to electric utility customers. Customers repay the loans via on-bill repayment system, using savings generated by reduced energy costs. Manitoba Hydro is having success with a similar program.[34] Such programs reflect a win-win situation for consumers, the economy, and the planet. Massachusetts provides another example of a winning formula for the allocation of green bond proceeds. Massachusetts is using its green bond proceeds to cut state sites' energy use by 20-25%, which is expected to generate 4,000 clean energy jobs and cut government costs by $43 mil-

lion annually. Hawaii and Massachusetts provide two examples of the many different ways that Ontario could expand its green bond issue and its commitment to green infrastructure.

4. The use of assertive and specific terms, rather than ambiguous ones, could clarify the provincial government's objectives for its green bonds.

As explained above, the ISO states that ambiguous terms like 'environmentally friendly' are open to a wide range of interpretations. Forgoing ambiguous terms for more specific ones like 'low-carbon' could send a clearer message. Even using subjective terms like 'environmentally sustainable' and 'green growth' would be an improvement, since these terms reflect a greater degree of assertiveness and ambition. Using more specific and assertive terms could send a clear message that 'green bonds' are more than just marketing tools. Furthermore, Ontario's capacity to green the economy would be improved if the provincial government aligned its rhetoric with concrete, long-term targets for public transit's environmental performance. To measure the environmental performance of Ontario's green bonds, there must be benchmarks. The provincial government could develop benchmarks by setting GHG emissions targets and fuel-switching targets, among others.

5. By establishing an inventory of green bond projects and outlining a forward-thinking vision to guide these projects, the provincial government could strengthen its capacity to catalyze green economic development.

Establishing an inventory of green bond projects with supportive cost-benefit analyses could help the government to identify successes and areas for improvement in the selection and administration of future projects. It could also provide a framework for other Canadian governments to learn from, which could help Ontario to become a leader on green bonds and green infrastructure in Canada.

Outlining a vision for the future of green infrastructure in Ontario could strengthen the provincial government's capacity to achieve successful green infrastructure development. This vision could include a set of general principles, policies, and objectives to guide Ontario's green infrastructure strategy. It could also include a clear demonstration of the government's selection criteria for green infrastructure projects, similar to what the World Bank

has done.[35] Articulating a forward-thinking vision for green infrastructure in Ontario could lay the foundation for future green infrastructure development and institutions to support it.

On this topic, Ontario could learn from Hawaii's experience. The Government of Hawaii has outlined a tangible vision for the future of its green infrastructure, which is part of its Clean Energy Initiative.[36] A key feature of this initiative is Hawaii's goal of meeting 70% of its energy needs with clean energy by 2030.[37] The state has outlined an action plan to realize this goal, which is available online. The Government of Hawaii also recently created a Green Infrastructure Authority to oversee the successful execution of its green infrastructure strategy.[38] Dedicating a government authority specifically to the monitoring and facilitation of green infrastructure development shows a strong commitment to green infrastructure and strengthens a jurisdiction's ability to realize a pathway to a green economy. Ontario may wish to consider dedicating a small agency or task force to green economic development, particularly if its green bonds are met with the tremendous levels of demand that investors are showing worldwide.

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